public service

BY RICHARD FISHER,* KI6SN

EmComm in Focus:

The Well-Oiled Baltimore County Auxiliary-Communications Service

The September 2009 Public Service column, "Pieces of the EmComm Puzzle Come Together in New York State," detailing the development of a statewide packet radio system, got the attention of a lot of *CQ* readers.

Many found the Empire State radio amateurs' plans really interesting and inspiring and asked if we would be featuring other EmComm groups in other states. What are they doing to advance capabilities for disaster communications in terms of organizational and emergency communications infrastructure?

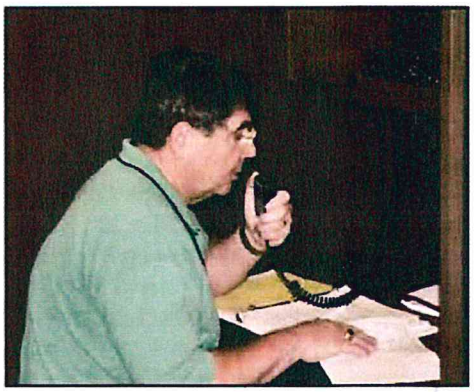
Well, this month, Maryland's Baltimore County Auxiliary Communications Service (BaCo ACS) is front-and-center, and its mission statement goes to the soul of the organization: "To establish and maintain the leadership and organizational infrastructure necessary to provide emergency, back-up and supplemental communications support to the Office of Homeland Security and Emergency Management, its affiliated agencies and the citizens of Baltimore County."

Taking in elements of the Radio Amateur Civil Emergency Service (RACES), Amateur Radio Emergency Service (ARES), Radio Emergency Associated Communications Team (REACT), and Community Emergency Response Teams, and Neighbors Helping Neighbors (CERT/NHN), the BaCo ACS was founded in 2006. For background on how this highly coordinated and well-run organization was developed and is maintained, we turned to Joseph Krysztoforski, AJ3X, BaCo ACS County Radio Officer, who has played a critical role in the start-up and ongoing operation of the organization.

CQ: *Why was BaCo ACS formed—and how? Whose idea was it?*

AJ3X: The Director of Homeland Security and Emergency Management was considering dropping amateur radio from the County EOP (or Emergency Operations Plan), due to a number of organizational, training, and EmComm management problems. The director saw a need but wasn't sure if the existing structure could satisfy the need. An exploratory committee was formed and tasked with determining if a viable program could be developed and implemented.

The current County Radio Officer was appointed to head the committee and the resulting organization was the Baltimore County Auxiliary Communications Service. What exists now is a true partnership with BaCo ACS personnel being viewed in the same light as volunteer fire fighters and volunteer Emergency Medical Service personnel: "Professionals in every sense of the word."

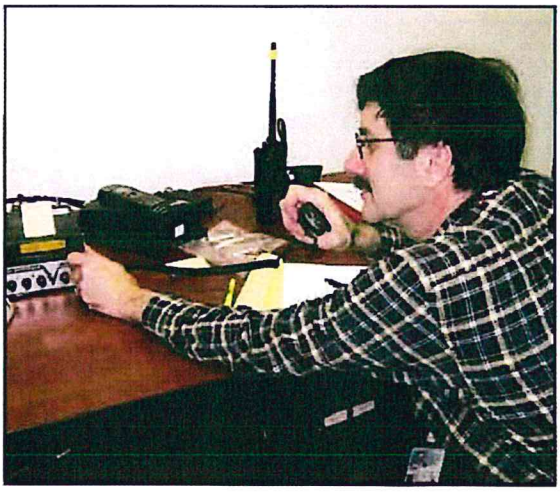


Bud Governale, W3LL, of the Baltimore County Auxiliary Communications Service (BaCo ACS), serves as net control at the Emergency Operations Center station during an emergency sheltering exercise. (Photos courtesy of BaCo ACS)

CQ: *How was such an ambitious initiative managed? How often do the key players gather to assess and fine-tune BaCo ACS' operation plan?*

AJ3X: Public safety agencies in Baltimore County are very dependent on each other during major incidents because resources are very limited. When a major incident occurs, agencies throughout this entire area will respond.

Knowing this, the BaCo ACS made a firm commitment in 2006 to build interoperability into our backup and supplemental communications plan. The objective is to ensure agencies responding to



John La Costa, N3SBP, operates at the Command Center during the inauguration of President Barack Obama in January.

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an event are able to communicate when primary systems fail or become overloaded.

One of the first tasks taken on by the County Radio Officer was to establish an advisory committee. The advisory committee consists of six members. Five are appointed by the County Radio Officer and source from personnel with at least five years of practical experience in emergency communications and completion of the Emergency Communicator training program. The sixth member is a representative of the Office of Homeland Security and Emergency Management (OHSEM) and is appointed by the Director.

Each member of the committee serves for a period of two years. At the end of the two-year period, he or she may be reappointed or his/her seat on the committee may be offered to another emergency communicator.

The committee meets monthly to review operations, update the Emergency Operations Plan (EOP) and Standard Operating Procedures (SOP) based on after-action reports filed by team leaders, and develop scenarios for future exercises. Additionally the committee makes recommendations for the acquisition of equipment and improvement of the amateur radio emergency communication systems in place throughout the county.

The committee serves at the pleasure of the County Radio Officer, who in turn, serves at the pleasure of the Director of OHSEM.

CQ: *With RACES, ARES, REACT, CERT/NHN, Homeland Security and Emergency Management involved, how are coordination and interoperability accomplished? What challenges have been faced and overcome? What challenges still exist?*

AJ3X: Coordination with Emergency Management is not as difficult a task as it would seem to be on the surface—at least not in Baltimore County and its sister community of Harford County.

Seeing the need early on for coordination between providers of emergency services, the players formed the County Emergency Management Task Force.

Representatives from county hospitals, universities, and colleges (used as surge centers, where an evacuation site is designated to handle the overflow of non-critical patients from nearby hospital emergency rooms during an incident), fire, police, health, social services, American Red Cross, BaCo ACS, and other stake-holders are members. The Task Force meets monthly to review pre-

paredness status, work out memoranda of understanding (MOUs), review training plans, interoperability issues, etc.

In Baltimore County, Harford County and a number of other jurisdictions in the state, there is no real distinction between emergency communication volunteers. For all intents and purposes, there is no RACES, ARES, etc. However, there is a dedicated group of trained volunteer emergency communicators willing and ready to serve when called.

The volunteers all complete the same training program and are registered with the Auxiliary Communications Service, which, in turn, is registered with the local jurisdiction. The biggest challenge we had to overcome, in counties where ACS is active, was resistance from a number of people who could not see the forest through the trees.

However, as time went on, the benefit of a unified organization overrode most objections and resistance. Those who could not reconcile the concept and realize the benefits of cooperation vs. competition (the old RACES vs. ARES vs. REACT vs. whatever...) dropped out of the program.

By eliminating the antagonism among emergency communication groups in Baltimore and Harford counties, we have been able to remove one of the biggest obstacles we faced in being taken seriously and being viewed as professional communicators by emergency managers.

The Advisory Committee goes a long way in helping with the integration of volunteers. All county agencies and a number of private organizations (for example, telco, power, and Red Cross) have command positions in the EOC. BaCo ACS, as a volunteer agency, operates in the EOC alongside other agencies.

CQ: *On what frequencies and using what modes is information passed? And what is the nature of that information in a disaster vs. public service event?*

AJ3X: Our primary mode of communication is FM voice on 2 meters, since most natural and manmade disasters are local and most traffic tactical in nature. We use two local repeaters for net operations, simplex frequencies to transfer formal traffic, and when needed, 70 cm for local on-site handheld communications.

For data transfer we are set to use 1.25 meters and MT63. Tactical messages are usually requests for resources or equipment, transfers of medicine, accident reports, shelter operations, neighborhood situational awareness reports, etc. When necessary, noncritical emergency responder traffic is passed on amateur frequencies to prevent overload of county frequencies.

Formal messages, using ICS-213, are used for SITREPS (situation reports). To communicate inter-county, the 6-meter band is used; and for cross-state communications and for long-haul, the 60-, 20-, 80-, and 40-meter bands are used.

Public service traffic characteristically consists of requests to track runners/walkers, locate event officials, and route traffic. Our public service communications activities typically support organizations such as the March of Dimes, Multiple Sclerosis Society, and other community-based groups.

CQ: *Describe the "command structure" during an emergency or exercise. Who reports to whom and how many operators are generally involved?*

AJ3X: BaCo ACS and groups in Harford and Cecil counties adhere to Incident Command policies and procedures. During an incident, ACS is part of the Service Branch within the Logistics Section. All personnel have, at a minimum, completed IC-700.a and IC-100.a (training). Many of our team leaders have gone on to complete IC-800, IC-300 and IC-400. Team members report to team leaders who are responsible to the site Incident Communications Manager (ICM). At the end of the day, all team leaders and members report to and are responsible to the County Radio Officer, who in turn reports to the OHSEM Director.

Incidents start with a call-up and dispatch of key ACS personnel (County RO, Net Control) to the EOC.

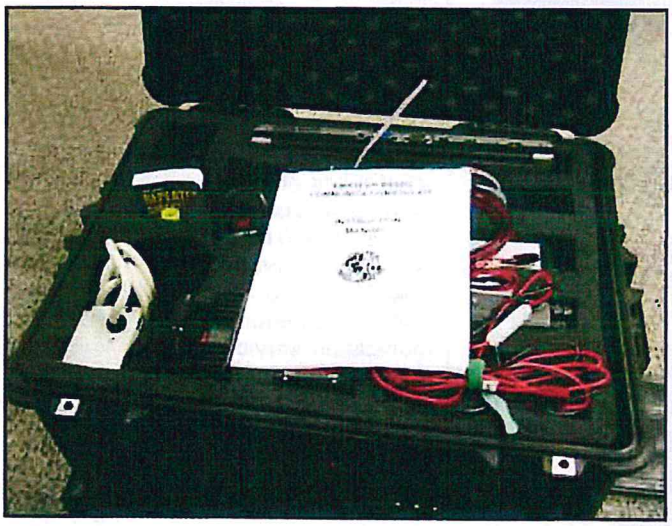
During the incident briefing an assessment is made and additional personnel are called and dispatched to field locations and facilities as needed.

CQ: *How is BaCo ACS outreach/recruiting handled? How difficult, or not, is it to get the numbers of volunteers necessary to keep things going?*

AJ3X: The initial recruiting effort (late 2005) consisted of a mailing to 700 amateurs from the Director of Homeland Security on department letterhead. The list was an extract from the FCC ULS of all amateurs in Baltimore County zip codes, which was then scrubbed to include only newly licensed amateurs and amateurs who renewed their license six months prior to extract date. We find it easier to recruit newly licensed amateurs rather than those who have been licensed for seven-plus years.

Letters were mailed in late December

inviting the amateurs to attend an orientation session scheduled in late January. A reminder was mailed a week prior to the meeting, and 120 amateurs attended the two-hour orientation and before the end of the meeting, 70 (of them) enrolled in the program. Recruiting is an ongoing, never-ending process to ensure we have an adequate number of trained personnel.



For quick deployment emergency communications, BaCo ACS has assembled "go kits," consisting of a dual band 2-meter/70-cm transceiver, D-STAR ID-1 transceiver, laptop PC, portable antenna system, data modem, and a high-capacity battery backup.

From the original 70, the group has been pared down to 60 active with a core group of 28. The core group consists of personnel who participate in all drills and exercises. The remaining personnel swap in and out depending on the time and date of the exercise.

We repeat the mailing every six to eight months—mailing to approximately 100 amateurs and usually picking up three to four additional personnel each time to back-fill those lost to attrition. We also promote the group over the air, at county events (fairs, etc.) through volunteer coordination agencies, club meetings, and at CERT and Neighbors Helping Neighbors training sessions.

CQ: *Are there regular nets to disseminate internal information?*

AJ3X: BaCo ACS schedules weekly information and training nets on the first Tuesday, third Friday, and last Sunday of the month. We alternate days to give everyone an opportunity to participate in a net. We found that restricting the net to a set day of the week, every week, limited the number of participants. By alternating the days, we open up participation to those who have to work late on a Tuesday, have a family obligation on a Sunday, etc.

The second Tuesday of every month is reserved for a deployment exercise. Three days before the exercise we announce the incident (BAD BUG, DARK SKY, etc). Thirty minutes before the start of the exercise, personnel deploy to county agencies and facilities for an hour-long drill.

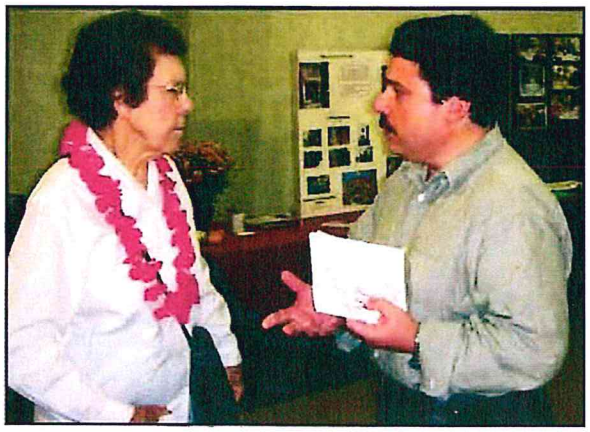
Net Control reads the full scenario over the air at the start of the exercise. Facility Emergency Managers prepare tactical and formal injects for passing by BaCo ACS personnel that are appropriate to the scenario and accelerated timeline. In addition to the on-air training nets, BaCo ACS—in con-

Looking Ahead in CQ

Here are some of the articles we're working on for upcoming issues of *CQ*:

- Marconi's First Great Miracle, by Stew Gillmor, W1FK
- Results, 2009 CQ WPX SSB Contest
- A High-Performance Regenerative Receiver, by N1TEV

Do you have a ham radio story to tell? See our writers' guidelines on the CQ website at <http://www.cq-amateur-radio.com/guide.html>.



Joseph Krysztoforski, AJ3X, BaCo ACS County Radio Officer, right, spreads the EmComm message during the Baltimore County Department of Aging's Baby Boomer Expo/Senior Expo in 2008.

junction with neighboring county ACS groups—schedules quarterly classroom training.

***CQ:** What are some of the specific incidents (disasters) or events BaCo ACS has supported and how did they play out?*

AJ3X: BaCo ACS deployed personnel during the 2009 Presidential Inauguration. The operation ran from 0600 Saturday, January 17, through 0030 Sunday, January 18, during the President-elect's train ride to Washington, and again from 0600 Monday, January 19 through 0015 Wednesday, January 21.

Teams were deployed to the County Command Center, EOC, Department of Human Resources EOC, and two emergency shelters. Each team operated one shift and consisted of a team leader and two to three operators. To reduce stress and burnout, shifts were limited to six hours. The event was supported by a total of 44 ACS personnel from Baltimore and Harford counties.

During the summer of 2008 and the winter of 2009, BaCo ACS deployed a total of four times to support emergency management and the opening of shelters by Department of Social Services. During these activations personnel were assigned to the shelters and the County EOC to handle tactical and formal messages.

BaCo ACS leadership receives information about pending incidents directly from the OHSEM via conference calls, e-mail, Short Message Service (SMS, or text messages), and monitoring of the county's WebEOC local and regional awareness boards. When an incident is imminent, personnel are notified over the air, via the website, by SMS, e-mails. and phone trees.

***CQ:** "When an incident occurs, BaCo ACS RACES personnel are assigned to one or more facilities located throughout the county. . ." How many facilities and what types of facilities are designated communications sites? What kind of gear is at each facility? And who decides which volunteers go where?*

AJ3X: BaCo ACS provides backup and supplemental and emergency communication services for five hospitals, three universities, four county agencies, three state agencies, and two evacuation centers. MOUs are in process to provide support to other agencies.

Facilities have fixed operating positions in their EOCs consisting of a 2-meter dual-band transceiver, 1.25-meter transceiver, a D-STAR dual-band transceiver, a laptop PC, and a data modem for MT63. The PC is tied into the facility's intranet and has access to

SUCH A HAM

Try not to forget the linear amp this year.

the internet. The D-STAR transceivers, recently installed, will be used for voice, e-mail, and transfer of small data files.

The radio room at the county EOC is equipped with two dual-band D-STAR transceivers, two 2-meter/70-cm dual-band transceivers, a 6-meter FM transceiver, two high-frequency transceivers and a 23-cm ID-1 transceiver for high-speed data transfer.

When necessary, teams deploy to shelters or field sites with "go kits" consisting of a dual-band 2-meter/70-cm transceiver, D-STAR ID-1 transceiver, laptop PC, portable antenna system, data modem and a high-capacity battery backup.

BaCo ACS works in teams consisting of a team leader and two to three additional personnel. The Radio Officer calls out the team leaders assigning teams to facilities. Team leaders then call up their teams. Rarely will all facilities need to be manned. Therefore, not all teams will deploy at the same time. The first team deployed to a facility is the primary team assigned to the facility. Teams whose facilities are not opened during the incident provide relief service to another facility's primary team.

BaCo ACS has cooperative working arrangements with the ACS groups in Harford and Cecil counties. When necessary, we can draw upon their personnel for support and they can draw upon our personnel during their deployments.

Over the last several months we have purchased D-STAR-capable equipment to take advantage of the Harford County ACS group's D-STAR repeater system, which is the first D-STAR repeater system to become operational in Maryland. BaCo ACS is also in the process of installing a D-STAR system.

Both BaCo and Harford ACS are extremely excited over the new D-STAR repeater systems. When they become fully operational during the fourth quarter, we will have plugged a significant "hole" in the D-STAR repeater network that exists between New York and Washington, DC. By plugging this "hole" it will be possible to transfer data from the New York City metropolitan area to the Washington, DC metropolitan area using RF. The BaCo and Harford D-STAR repeater systems will be connected to the D-STAR Gateway during the first quarter of 2010.

***CQ:** How do the radio and computer nets operate/coordinate during events?*

AJ3X: There is a limit to the amount of traffic that can be handled by an NCS using one frequency. The amount of traffic passed will vary with the length of the message, the skill of the operators, the type of transmission, and operating conditions. On average, 40 ICS-213 messages can be passed per hour using one frequency. To overcome this limit, BaCo ACS uses multiple tactical frequencies for voice messages and D-STAR, MT63, and other digital modes for data and file transfers.

Depending on the incident, BaCo ACS will run an emergency net, a tactical net, and a resource net. Each net maintains a liaison with Command and Control. In addition to amateur frequencies, the EOC monitors traffic on designated FRS and GMRS frequencies. FRS is used by unlicensed personnel; GMRS by personnel so licensed.

***CQ:** Does Baltimore County's proximity to the nation's capital, given the post 9-11 era, play a role in the urgency for the need of such a communications plan and infrastructure?*

AJ3X: Baltimore County and surrounding counties are evacuation areas for sites south and the importance of having a supplemental communications group at the ready cannot be overstressed.

North Carolina Radio Amateurs Tackle "Hurricane" in SET

"This is only a drill." This became the on-air mantra on Oct. 3, as hundreds of amateur radio operators took to the air for the annual North Carolina statewide simulated emergency test exercise, or "SET."

For 75 years, amateur radio has had formal emergency response organizations that work with state and municipal governments and agencies to supply supplemental emergency communications.

The SET is held the first weekend in October, and many of North Carolina's 1800 members of ARES (Amateur Radio Emergency Service) were on the air checking out their equipment and honing their operating skills.

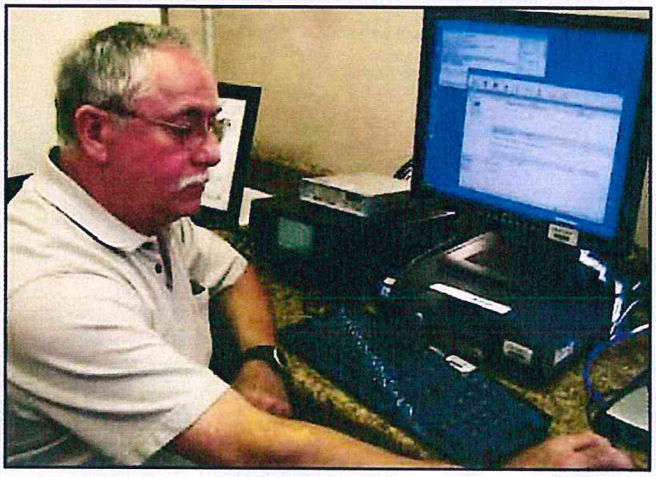
"We've been lucky not to have any large-scale disasters this past year", said Winterville's Bernie Nobles, WA4MOK, a retired UNC-TV broadcast engineer and head of ARES in North Carolina." The purpose of the SET is to keep our skills sharp and our response capability high."

The Saturday exercise pretended that a Category 1 hurricane enveloped the coast, but compromised electrical transmission throughout the state, plunging all of North Carolina into darkness.

"The most effective way to respond is to practice frequently through training," said Ron Knapp, W9EF, of Kinston, who is Assistant Section Emergency Coordinator (ASEC) for Eastern North Carolina, overseeing ARES in the eastern third of the state. ARES mirrors the organizational structure of North Carolina Emergency Management (NCEM). October's SET drill was held inside the eastern branch of NCEM in Kinston.

The SET exercise permitted teams to experiment with new digital technologies which mimic e-mail without the need for an internet, cell, or landline phone connection.

—Bill Morine, N2COP



During the recent North Carolina SET, Dave Roy, W4DNA, North Carolina Section Traffic Manager (STM), operates via WinLink.

Bernie Nobles, WA4MOK, North Carolina Section Emergency Coordinator (SEC), works HF during the state's Simulated Emergency Test in early October. (SET photographs courtesy of Bill Morine, N2COP)

CQ: *What are some of the most important "lessons learned" from which BaCo ACS has benefitted since its formation in 2006?*

AJ3X: There are several:

- Emergency communications volunteers cannot operate in a vacuum.
- Partnering with Emergency Management is critical to the group's success.
- It's truly one for all, and all for one.
- Preparedness is not an option, it is a requirement.

Wanted: Info About Your Area's Disaster Preparedness

The work of the BaCo ACS provides another snapshot of what dedicated radio amateurs in one region can do to make its EmComm plan highly effective, well maintained, and extremely reliable.

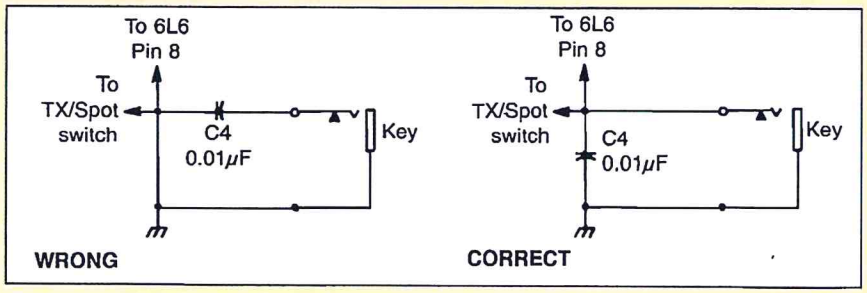
Are there operator/volunteers in your state, county, city, or town involved in innovative disaster preparedness initiatives? We'd like to hear about them. Please drop me at line at: <ki6sn@cq-amateur-radio.com>.

73, Richard, KI6SN

Oops...

The schematic in figure 3 of October's "World of Ideas" column has a misplaced capacitor. C4 should be in parallel with the key, not in series with it. A corrected diagram (of that portion only) is shown.

Also in the October issue, it seems that the "28" key was stuck when we were doing the Table of Contents. In case you haven't figured this out by yourself already, the short feature about KØDQ was actually on page 30 and the CQWW All-Time Records began on page 32. We regret the errors.



Clarification

One of the photos in our October 2009 review of the Ameritron ALS-600 amplifier showed both the radio and the amplifier tuned to the 30-meter band. We should have reminded everyone that operation on the 30-meter band is limited to 200 watts. If you are going to use the ALS-600 (or any other amplifier) on 10 MHz, please keep this power limit in mind.

Finally an eagle-eyed reader pointed out to us that AD5X's promised sidebar about building an Operate/Standby switch for the ARI-500 interface did not appear in this issue. We will have that for you next month.