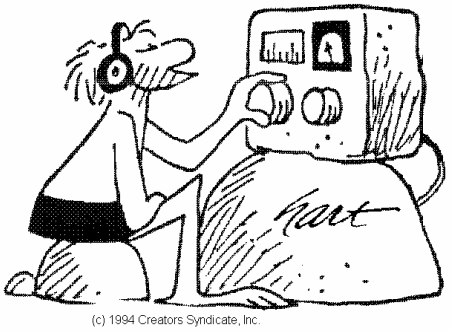

BARA Facts

Newsletter of the Binghamton Amateur Radio Association

November 2004

Website: http://www.wtsn.binghamton.edu/bara

2005 Slate of BARA Officers and Directors

The Nominating Committee has finished preparing the slate of Officers and Directors of the Binghamton Amateur Radio Association for 2005. Standing for election at our November General Meeting are:

President:	*Bill Coleman, N2BC*
Vice President:	*Bob Handel, K2FU*
Secretary:	*Allen Lutins, K2KLC*
Treasurer:	*Paul Slocum, N2NCB*
Directors:	*Steve Orzelek, N2MSB*
	Mel Snitchler, WE2K
	Jack Connors, WB2GHH
	Jim Lawson, KC2JED

As always, nominations from the floor will be solicited and accepted if forthcoming.

We take a moment to thank Bill, Bob, Jack, and Jim for agreeing to offer their service to the club and we thank Bob, KC2DSS; Ron, N2RWK; and Malcolm, KC2EOV who finish their terms for their service. BARA is no greater then the sum of its members and without your willingness to serve, our club could not exist.

The General Meeting will begin at 7:30 PM on Wednesday, 17 November.

BARA Christmas Party

Hedy, AA2MU, informs us that our annual Holiday Bash will be held at Russell's (across from the Enjoi Golf Course in Endicott) on Wednesday 15 December with seating beginning at about 6:00 PM.

The menu is included in this issue and there is a special bonus: anyone who contacts Hedy with confirmed reservations by 5 December will be entered into a special drawing for a discount of $10.00 on their bill! Please contact Hedy at (607) 748-4387 with your reservation.

Our December get-together is always a lot of fun as well as an opportunity to catch up with old friends and to make new ones. Please join us and make the 2004 Bash bigger and better than ever!

Distress at 121.5 MHz

A student in Eugene Oregon recently received a lesson in unwanted mixing products and the results of poor filtering when his television set began radiating a signal on the International Distress Beacon Frequency 121.5 MHz.

Police and Search/Rescue Personnel knocked at the door of Chris van Rossmann expecting to find a marine or personal beacon that had been activated by accident. Instead they found a Toshiba Flat-Screen Television that was radiating a spurious signal.

Apparently this is not an uncommon occurrence and the international Sospas-Sarsat program has plans to discontinue satellite monitoring of the 121.5 MHz frequency on 1 February 2009. At that time mariners, aviators, and individuals will have to switch to 406 MHz beacons.

The difference between the two systems is that Beacons on 121.5 MHz emit an unmodulated signal for homing purposes. 406 MHz Beacons transmit a carrier that is pulsed periodically to permit greater accuracy in homing in on the beacon. The carrier is also modulated with a digital identifier which permits the beacon to be identified and cross-referenced to a specific watercraft, aircraft or individual.

Navy ELF Transmissions End

The United States Navy has terminated ELF Transmissions from its station in the Northern US. This Communications System — designed and implemented during the Cold War — was intended to provide a reliable signal service to Nuclear Submarines (Boomers) running submerged for long periods as a deterrent Weapons Platform. Although the detailed workings of the system are necessarily secret it is known that a frequencies int he range 300 Hz to 3 kHz were to transmit three-letter digital groups at a very

slow rate (perhaps 15 minutes per group). The low data rate was required to maintain a reasonable bandwidth and to assure reliable transmission. Error Correcting protocols were used to assure reliable reception by the Submarines with no necessity of an acknowledgment signal which might have betrayed the location of the Sub.

It can be pretty certain that the Communications Channel was kept constantly busy with traffic (so that a sudden increase in transmissions would not betray heightened tension) and that the codes sent were used for scheduling a formal rendevous between the Sub and its Communications Control using another secure channel (such as a Satellite Link using a very Narrow-Band Directive Antenna) where increased Communications Bandwidth would allow freer exchange of data.

The Antenna Structures (with associated Ground Mats) stretched twenty-eight miles or more in the forests of Wisconsin and Michigan.

The Navy plans to replace the system with a combination of Satellite and Very Low Frequency (VLF) transmitters.

Adaptive Signal Processing from SGC

Your editor recently had occasion to return his SGC SG-2020 Transceiver for Factory Service and he used the occasion to have SCG retrofit their Second Generation Adaptive Digital Signal Processor (ADSP2) Chip. Others may find a review of the unit of interest because the ADSP2 Chip is available for installation in other Transceivers (and Receivers). SGC also sells an Outboard Speaker which incorporates the ADSP2 Chip.

My previous experience with Digital Signal Processor (DSP) units had been confined to a early Radio Shack unit and a stand-alone Timewave DSP first manufactured in the late 80s or early 90s. These units (especially the Timewave) had been useful for noise reduction, but the filtering was not nearly as good as the built-in adjustable Bandwidth Filter on the SG-2020. With this background, I had been expecting a decent amount of cleanup on the noise and "hash" of the HF bands, but I was astonished by the dramatic improvement provided by the ADSP2.

As retrofitted to the SG-2020 the ADSP2 provides two levels of noise reduction. The first level is a 13db reduction equivalent to SGCs original ADSP. At the second level, ADSP2 provides a 26db reduction. The results are remarkable at either level and signals that were not readable suddenly become quite clear with very little distortion noted. There is, of course, a noticeable decrease in audio level as the reductions are engaged and it is necessary to increase the Audio or RF Gain accordingly, but this is to be expected and you just have to remember to back off the gain when you disengage the DSP.

Three Digital Filters are provided by the ADSP2. The 1800 Hz filter is just about right for SSB while the 500 Hz and 100 Hz filters are more appropriate for CW and Digital Modes. Under crowded Band Conditions the filters definitely work well, although it is more pleasant to disengage them if the bands are less crowded.

Overall the ADSP2 is a valuable improvement to the SG-2020 and well-worth considering. If I were shopping for a DSP for another radio I would certainly consider the board as an add-on unit. SGC provides advice on installation in non-SGC radios on their Website at <<www.sgcworld.com>>.

Saturday Exams Terminating

We learn that the Exam Sessions held on the second Saturday of each month at the Endicott Fire Station will be wrapping up in December. A declining number of candidates for examination combined with conflicting schedules and commitments for the examiners has made it necessary to take this decision.

The examination sessions held (generally) on the last Monday evening of each month at the Vestal Public Library will continue.

This would be an appropriate time to note that Charlie, KA2MKQ, and Bob, WA2VCS, have been coordinating these sessions for the past several years. Their efforts (and the dedication of the Volunteer Examiners who administered the sessions) represent a significant contribution of time and effort to the Amateurs in our community and beyond.

Going back further we note the Teams (including our own BARA Team) which worked out of the Office of Emergency Services providing monthly sessions for many years. We are most fortunate to have a tradition of regular examination sessions in the Triple Cities. The Amateurs of New York and Pennsylvania have been well-served by our VEs and we thank them for their dedication.

Club Officers and Committees			
President	**Bob McCabe**	**KC2DSS**	**748-9808**
Vice President	**Ron Reagan**	**N2RWK**	**722-6790**
Secretary	**Allen Lutins**	**KC2KLC**	**729-4817**
Treasurer	**Paul Slocum**	**N2NCB**	**687-2057**
Directors	**Bob Handel**	**K2FU**	**693-4310**
	Malcolm Heath	**KC2EOV**	**753-7248**
	Steve Orzelek	**N2MSB**	**775-0281**
	Mel Snitchler	**WE2K**	**723-9612**
W2OW Trustee	**Frank Scoblick**	**N2HR**	**729-4249**
Newsletter	**Ed Plesnar**	**KB2SCF**	**754-3810**

BARA, The Binghamton Amateur Radio Association is an ARRL Affiliated Club

Next General Meeting

7:30 PM, Wednesday, November 17th Town of Binghamton Town Hall, 279 Park Avenue, South of the Ross Park Entrance

Board Meeting

7:00 PM, Wednesday December 1st
Broome Community College Campus, Office of Emergency Services (West Side of Campus)

Exam Session

7:00 PM Monday, November 29th
Vestal Public Library, Route 434 Vestal
1:30 PM, Saturday December 11th
Endicott Fire Station, Across from UE High School

BARA Dues

$18/year Single Member; $27/year Family

DX Cluster

W2OW on 145.070 MHz with a Data Rate of 1,200 baud; questions to n2bc@stny.rr.com

W2OW Repeater

147.390 MHz, 100 Hz CTSS. BRAT Net every Sunday Evening at 8:00 PM Local Time

Binghamton Amateur Radio Association, Inc.
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