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THE AERO AERIAL

AERO AMATEUR RADIO CLUB
MIDDLE RIVER MARYLAND

Life Imitates Art

But Where's the Natty Boh?

The newsletter of the Aero Amateur Radio Club

Volume 2 Issue 2
February 2005

Editor Frank Stone AC3P

Officers			Committees	
Al Alexander	K3ROJ	President	Repeater/Trustee	Phil Hock W3VRD
Bob Landis	WA3SWA	Vice-President	VE Testing	Pat Stone AC3F
Joe Miko	WB3FMT	Recording Secretary	Public Service	Frank Stone AC3P
Pat Stone	AC3F	Corresponding Secretary	RACES/ARES	Joe Miko WB3FMT
Warren Hartman	W3JDF	Treasurer	Contests	Bob Landis WA3SWA

ABOUT THE AERO AMATUER RADIO CLUB

Meetings: First and Third Wednesdays at 7:30 pm at Coffman's Diner
(Middle River and Orem's Rd.)

Nets: See Local Area Net Schedule

Repeaters: W3PGA (147.24 MHz - / 449.575 MHz -)
W3JEH (223.24 MHz -)

WEBSITE: http://mywebpages.comcast.net/w3pga/

LOCAL AREA NETS

Day	Time	Frequency (MHz)	NET NAME
Daily	9 – 10 am	147.03	ORIOLE Net
Daily	6 – 6:30 pm	3.920	Maryland Emergency Phone Net
Daily	6:30 – 7 pm	146.670	Baltimore Traffic Net
Daily	7 pm and 10 pm	3.643	Maryland/DC/Delaware Traffic Net
Daily	7 pm	146.505	AERO Code Practice Net
1st Tues	7:30 pm	145.330	Baltimore ARES Net
2nd Tues	7:30 pm	146.670	Baltimore County RACES Net
2nd Wed.	8 pm	28.445	AERO ARC Net
4th Wed	8 pm	147.240	AERO ARC Net
5th Wed.	8 pm	449.575	AERO ARC Net

W3RMN SK

Ken, KB3JVP, reports that Ralph Sparks, W3RMN passed away around December 10, 2004. Although he was not a member for many years, Ralph was a founding member of AERO ARC and for a time served as a club officer. We are saddened by his passing.

Station Activities

AC3F made a rare on the air appearance for Straight Key Night. K3ROJ is sporting a new mobile antenna mount on his truck.. KB3KRV is testing tolerance to B+ Voltage in vacuum tube circuits. AC3P successfully sent e-mail over packet radio with WINLINK 2000. KB3KRW made an appearance on the AERO Code Practice Net. KB3JVP is testing the s.w.r. of picket signs on VHF.

Public Service

There were no public service events in January or February.

The Columbia Amateur Radio Association has agreed to coordinate communications for the May 2005 ADA Bike Tour. The Harford County ARES group has agreed to do the same for the October 2005 Havre de Grace ADA Walk. These events were previously coordinated by the AERO ARC.

The club will continue to coordinate communications for the Baltimore ADA Walk in October 2005.

Net Report

Two Meter Net: WB3FMT (NCS), K3ROJ, KB3JVP, KB3KRV, KB3JDE

70 cm Net: WB3FMT (NCS), KB3JVP, KB3KRV, K3ROJ, KB3JDE, AC3P

10 Meter net: AC3P (NCS), W3JEH, W3VRD, KB3KRW, K3ROJ, KB3JVP

ARES/RACES

Joe WB3FMT, Eric KB3JDE, and Frank AC3P represented the Aero ARC at the annual Baltimore County RACES meeting in Towson on January 5th.

The staff of the Baltimore County Office of Emergency Preparedness thanked the ham radio community for their service for 2004. They especially noted our help during the August 15th HAZMAT drill involving the area hospitals.

BACO RACES Officer, Al Nollmeyer W3YVQ, gave a PowerPoint presentation outlining the design of the new WINLINK 2000 system which, when implemented, will permit the served agencies to link to the Internet via amateur radio during emergencies. Al also made a pitch for new equipment at the EOC and for county support in the fight against BPL interference.

On January 11 the regular monthly RACES drill took place. AC3P served as liaison station between the Baltimore County and Central Region Nets. WB3FMT checked into the Baltimore County net.

From NIST: *(ed. Note Morse Lives)*

Experiments at Demolition of Old Washington Convention Center Aim to Improve First Responder Communications

FOR IMMEDIATE RELEASE:
Dec. 15, 2004

CONTACT: Laura Ost
(301) 975-4034

Gail Porter
(301) 975-3392

Experiments aimed at improving emergency radio communications will be performed by researchers from the Department of Commerce's National Institute of Standards and Technology (NIST) at the old Washington Convention Center in downtown Washington, D.C., before, during and after its demolition on Dec. 18, 2004.

The NIST work, which supports public safety programs of the U.S. departments of Homeland Security and Justice, is intended to help improve the communications capabilities of first responders. First responders who rely on radio communications often lose signals in shielded or complex environments such as the basements or elevator shafts of buildings. It also is very difficult to detect radio signals through the dense rubble of a building that has collapsed as a result of natural disasters or terrorist attacks.

To simulate disaster environments, NIST is using real-world “laboratories”—buildings that are scheduled to be imploded as part of construction and recycling projects. The old Washington Convention Center is among a series of buildings around the country that NIST is using for radio propagation experiments. Among its tasks, NIST is investigating new tools to improve communications, such as methods for detecting very weak radio signals and the use of improvised “antennas” made of metal found in debris to boost signals.

NIST electrical engineers Chris Holloway and Galen Koepke place transmitters in a protected air vent at the old Washington Convention Center prior to the implosion of the building.

Photo by Gail Porter/NIST

Click here to download a high resolution version of this image. Additional photos.

View **B-roll footage** of NIST researchers conducting experiments at the old Washington Convention Center site. Requires Real Player.

"We're trying to understand the whole radio propagation process in these huge buildings both before and after a collapse," says Chris Holloway, the researcher from NIST's Boulder, Colo., laboratories who is heading up the experiments. "We're specifically looking at very large buildings because that's where you're likely to have communications problems and large numbers of people involved in an emergency situation."

The NIST team will place a set of about 25 battery-operated transmitters at various locations in the convention center prior to demolition. The transmitters send signals near the frequency bands used by emergency personnel and mobile telephones. Scientists will monitor and map the strength of signals sent by the transmitters to receivers outside the building before, during and after the building is imploded. After the implosion, NIST researchers will study various schemes for detecting signals by searching with directional antennas and by connecting detectors to metal debris found within the rubble of the building.

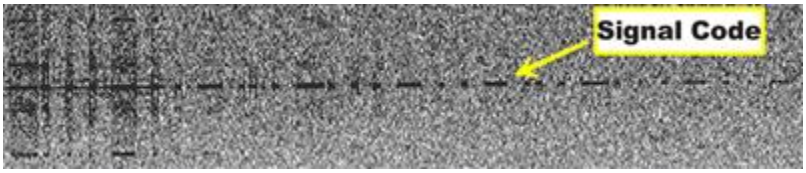
The researchers will be using a variety of techniques, including a method for measuring received signal strength and detecting very weak signals (see at right). NIST researchers hope to develop reliable, cost-effective tools that can be retrofitted to existing radio systems to assist emergency personnel in locating and perhaps communicating with rescuers and other survivors trapped inside a collapsed building. For example, using software that turns sounds into visual images, first responders may be able to receive and see simple patterns—like Morse code—from a survivor repeatedly turning a radio or phone on and off, in cases where the signal was too weak to receive audible voice messages.

The research is funded in part by the Department of Homeland Security and the Department of

Justice's Community Oriented Policing Services.

As a non-regulatory agency of the U.S. Department of Commerce's Technology Administration, NIST develops and promotes measurement, standards and technology to enhance productivity, facilitate trade and improve the quality of life.

For additional information on NIST Emergency Communication projects see this fact sheet.



A weak "Morse code" audio signal that gets lost in static (left side of graphic) becomes easier to identify when converted to a visual image focusing on a narrow band of signals (right side of graphic).

Click here to download a high resolution version of this image.

Background on NIST Radio Propagation Experiments

Other NIST Tests

NIST performed its first set of building implosion experiments at the 13-story Fischer Public Housing Project in New Orleans in January 2004. A second set of experiments was performed at Veterans Stadium in Philadelphia in March 2004. The old Washington Convention Center is the third site in this series.

To complement the implosion experiments, NIST also is performing radio-propagation studies in existing public buildings that will remain standing. This work involves mapping signal strength throughout the buildings to identify potential weak-signal "dead spots" that might hinder emergency rescue efforts. Ultimately, the researchers plan to generate a large set of public-domain data on differences in signal reception at emergency communications frequencies for different types of building environments.

During the week of Nov. 29, 2004, the NIST crew carried out such tests in Maryland in cooperation with the Montgomery County Fire Department. Previous signal-strength mapping tests were performed at an office building in Arizona in May 2004 with members of the Phoenix Fire Department; at a hotel in Colorado Springs, Colo., in June 2004; and at a supermarket in Boulder, Colo., in August 2004.

Detecting Weak Radio Signals

NIST researchers are using a reliable, inexpensive method that improves detection of weak radio signals for first responders in emergency situations. Based on an approach used in deep-space communications, the method may improve signal detection sensitivity by several orders of magnitude over a standard handheld radio receiver.

When a radio signal is weak, a person listening to a radio receiver hears only static but may be

able to see the signals if they are converted to a visual display. A visual pattern becomes even easier to see when the signals are confined to a narrow frequency spectrum, as in the NIST application.

The method uses a standard communications receiver to receive a very narrow band of high-frequency radio signals and convert them to lower frequencies. A sound card connected to a personal computer digitizes signals in this band of frequencies. Computer software uses signal-processing techniques to amplify and/or graphically display the digitized signals. The system is calibrated using a new NIST-developed technique, so that the strength of the radio signals can be displayed in absolute units (electric field strength). These calibrated measurements are made possible by NIST laboratory characterizations of antennas and other components. Calibration of the equipment also allows comparison of signal strength measurements made with different receiver systems and may allow manufacturers to verify their product's performance.

The NIST researchers have applied this variety of tools to the specific needs of the public safety community, where systems must be reliable, inexpensive and easy to implement and use in emergency scenarios. The radio receiver is a type already used by many first responders, the sound card is commercially available, and the required audio-recording software is widely available for a nominal charge. In the field, the method could be used to detect faint patterns of data signals (such as Morse code) sent by emergency responders unable to communicate through voice signals. A radio transmitter also might be programmed to emit such signals automatically to help locate a first responder who has collapsed or fallen.

This Month in Aero ARC History

By WB3FMT

There are currently 10 Meeting Log Books. The recording information period goes from February 6, 1949 through June 1956 and, again from October 1959 through today.

I reviewed the meeting logs for February for the following years and selected a bit of Aero club history.

This month is Aero Club History - February

February in History

56 Years Ago **1949**

2/9/1949 The club had a new address at 1215 Wilson Point Road

2/23/1949 Calls letters W3PGA licenses received.

55 Years Ago **1950**

2-22-50 The club is still trying to get a new club name. Some of the suggestions were: MARCO Amateur Radio Club
GLM Radio Club
Aircrafters Amateur Radio Society
Avionics Amateur Radio Society

The club purchased the T3 Barracks for $100 to be co-owned with the Model Rail Road club.

35 Years Ago **1970**

2-18-1970 The club has been notified to move out of the club house ASAP.

30 Years Ago **1975**

2/26/1975 Warren Hartman reported that the club's WR3AFI repeater license is at the post office.

25 Years Ago **1980**

2/6/1980 The 450 unit is operational at 449.55 out and 444.55 in. The club is requesting an auxiliary 222 link is requested, info is sent to T-Mark.

20 Years Ago **1985**

2/20/1985 The club got federal approval for non-profit organization.

15 Years Ago **1990**

2/7/1990

Phil Hock showed some pictures printed by a computer on a Panasonic matrix printer using Ventura publisher.

10 Years Ago **1995**

2/1/1995 Meeting held at room 7 at Kenwood High School. Frank Stone AC3P was a visitor.

2/19/1995 New Toys - J Hill showed his new Unitrex Hand Calculator and slide rule made in Japan. Phil showed a "handy dandy" pocket tool w/3 size nut driver, 2 screw drivers, blades and all for only $1.00 from GE sold by Walt Dixon.

5 Years Ago **2000**

2/2/2000 Frank AC3P has purchased 2 Radio Shack 10 meter rigs. Bob WA3SWA also brought a RS 10 meter rig also.

(*Ed Note: Frank unloaded the RS rigs, one in Berryville in 2003, the other at the BRATSFEST 2004).*

COMING EVENTS

Jan 19 Meeting Coffman's 7:30 pm
Jan 21-23 ARRL VHF Contest
Jan 26 2 meter Net 147.24 MHz 8 pm
BARC Mini-Fest Timonium
Jan 29 Testing at White Marsh 1 pm
Jan 30 2005 MMARC Post Holiday Hamfest
Maryland Mobileers ARC Odenton, Md.
http://www.qth.com/mobileers
Feb 2 Meeting Coffman's 7:30 p.m.
Feb 9 10 meter net 8 p.m.
Feb 14 -19 ARRL School Club Roundup
Feb 16 Meeting Coffman's 7:30 p.m.
Feb 19-20 ARRL DX Contest CW

Feb 20 Virginia Section Convention (Frostfest 2005)
Richmond, Va.http://www.Frostfest.com
Feb. 23 2 meter net 8 p.m.

Contributions Appreciated

The Aero Aerial is always looking for material to put in this newsletter. If anyone has an article or news item that they could submit it will be appreciated.

Submissions can be emailed to Frank at ac3p@arrl.net.