ARES COMMUNICATOR

Information for Scott County Amateurs

February, 2008 | **Accurate, Reliable Emergency Communications** | *Volume 8, Number 2*

Wisconsin ARES Assist With Tornado Relief

A rare January EF3 tornado in Wisconsin destroyed houses and knocked out power shortly after 4 PM (local time) Monday, January 7, displacing about 160 people. The Red Cross activated members of the Kenosha County and Racine County Amateur Radio Emergency Service (ARES) groups to provide logistical communications at the two relief shelters in Kenosha County, as well as from a communications station at the Kenosha County Emergency Operation Center. Riding along with Red Cross teams, ARES members helped relay damage assessments back to the Red Cross building in Racine.

"Providing communications is essential," said Assistant Emergency Coordinator for the Racine County ARES Alex Voss, N9RGX. "We set up a communications network at the Red Cross building in Racine, outside of the affected area. We were ready to go when activated. I couldn't be more proud of our volunteers. We will work with the responding agencies as long as they need us. We'll take what we've learned this time and use it to improve our response in the future."

According to ARRL Wisconsin Section Emergency Coordinator William M. Niemuth, KB9ENO, Wheatland, Somers and the city of Kenosha were hardest hit by the storm. "In Wheatland, 20 homes were destroyed and at least 50 homes had some kind of damage. In Kenosha, six homes were destroyed and almost 30 were damaged. There were a handful of homes in other parts of the county with minor damage." An unknown number of cars were blown off the road on Highway 50 near Highway O, said Sgt Gil Benn of the Kenosha County Sheriff's Department.

Wisconsin Tornado *cont'd on page 2*

The ARES COMMUNICATOR is published for the benefit of Amateur Radio Operators in Scott County and other interested individuals.

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10th Annual MN QSO Party

Saturday Feb. 2, 2008

The first Saturday in February is the annual opportunity for the world to work Minnesota. The Minnesota QSO Party, both CW and Phone, is sponsored by the Minnesota Wireless Association and will run from 1400 - 2359Z on Saturday, Feb 2, 2008. See the website for complete information, www.w0aa.org/mnqp.htm. Suggested operating frequencies are shown in the table below.

The usual station categories are included in the rules. The contest exchange is Name and MN county or S/P/C. The contest score is calculated by the following: QSO Points: SSB—1 pt, CW—2 pts. Score: QSO points x MN counties (MN stations also count States and Provinces), each counted only once.

Logs are due by Mar 15 to mnqp@isd.net or MNQP, 4745-170th Lane NE, Ham Lake, MN 55304-5233

MN QSO Party *cont'd on page 2*

ARES Activities

Weekly Net Monday 7 PM 146.535 mhz (s)
Breakfast Saturday,February 9th

SELECTED TRAFFIC NETS

Designator	Freq.	Local Times	
MN Phone	3.860Mhz	Noon, 5:30pm	Daily
MN CW	3.605Mhz	6:30pm, 9:50pm	Daily
ARES			
Scott ARES	146.535 S	7:00pm	Monday
Carver ARES	147.165+	8:30pm	Sunday
Bloomington	147.090+	9:00pm	Sunday
Neighboring Nets			
North Dakota	3.937Mhz	6:30pm	Daily
South Dakota	3.870Mhz	6:00pm	Daily
Wisconsin	3.985Mhz	5:30pm	Daily

MN QSO Party *cont'd from pg. 1*

Where to Find the 2008 MN QSO Party!

Suggested operating frequencies.

Band/Mode	Freq.	CST	GMT
10 CW	28050	Noon	1800
10 SSB	28450	2:00 PM	2000
15 CW	21050	11:00 AM	1700
15 SSB	21350	1:00 PM	1900
20 CW	14050	All Day!	All Day!
20 SSB	14270	All Day!	All Day!
40 CW	7050	All Day!	All Day!
40 SSB	7250	All Day!	All Day!
80 CW	3550	All Day!	All Day!
80 SSB	3850	All Day!	All Day!
160 CW	1850	5:30 PM	2330
160 SSB	1870	5:30 PM	2330

BREAK - OVER

"You miss 100 percent of the shots you don't take." Wayne Gretzky

Wisconsin Tornado - *cont'd from page 1*

"It was a severe storm with a lot of damage," Kenosha County Sheriff David Beth said. "In all my time here, I have never, ever, seen any damage to this degree. This is something I've only seen on TV that happens in other places, but during the middle of January this is something absolutely incredible that happened for us." Until the storms on Monday, there has been only one tornado in January since 1844, according to data from the National Weather Service.

Niemuth thanked the 18 ARES and RACES members who responded. "I bet this morning that the 18 responders never thought they would be responding to help their community recover from an EF3 tornado by evening! But, the reality is emergency and disaster situations most always catch us by surprise. That is why we train and prepare."

Sherriff Beth concurred: "It was heart-wrenching to see how most of these people are volunteers...and they just strap on their clothes, they leave their loved ones at home and they go running to help others. Usually we're used to an incident that happens here in one spot, and this happened over miles. This happened from southwestern Wisconsin all the way over to Kenosha and everybody did their job. Everybody did what they had to do."

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Operating Events
February 2008

2 **Minnesota QSO Party**
North American Phone Sprint
6 Pres. Ronald Reagan's Birthday
9 - 10 CQ WW WPX RTTY Contest
North American CW Sprint
14 Valentine's Day
16 - 17 ARRL Int'l DX Contest—CW
18 President's Day
23 - 24 CQ WW 160-Meter SSB Contest
North American QSO Party—RTTY
CQ WW 160-Meter SSB Contest
North American QSO Party

New Mode for Emergency Communications

Narrow Band Emergency Messaging System

The Narrow Band Emergency Messaging System (NBEMS) for Windows is a suite of software programs designed for point-to-point, fast, error-free, emergency messaging up to or over 100 miles distant, and takes up a very minimum of space on the ham bands, leaving more space for all other ham activities.

The system is designed primarily for use on the two-meter band, or on HF with NVIS antennas, where there is a minimum of fading (QSB) to slow down message transfers. Two meters has the advantage that distances long enough to span disaster areas of up to 100 miles can be dependably done with small, portable antennas. In hilly regions, if two meters is not workable over the distances required, NVIS antennas on HF can be employed instead, but are not nearly as portable.

The system uses the computer soundcard as the modem and, other than a simple interface connection between the computer and transceiver, no additional hardware is needed.

Composing and sending emergency messages on NBEMS utilizes the same Outlook Express, Outlook, Windows Mail or Thunderbird email program used for Internet email, and is no more difficult than sending an email over the Internet. Messages just go over the radio instead, when the Internet or phone service is not reachable in an emergency.

PSK63, PSK125, or PSK250 is used to modulate two-meter SSB, or HF SSB transmitters, using horizontally polarized antennas for greatest range. Two meters is unique in that the propagation is more constant than on the lower bands from 6 meters on down, and range is greater, and absorption less, than on the lowest UHF band, 70 cm, so much wider modes, that handle QSB by continuing to work far below the noise level, are not needed.

This point-to-point system does not utilize repeaters, or email robots, for message forwarding. All forwarding is always done by stations manned by live operators on both ends, who can confirm that a frequency is clear locally, negotiate a QSY if necessary, and confirm delivery of a message by the intended recipient. The system depends upon a multitude of radio amateurs providing the traditional public service function, similar to the way they always have, and gives more hams a chance to help out with emergency communications without requiring a large hardware investment.

NBEMS is not intended for net communications, because only one station at a time can be connected and controlled by flarq. Nets can be conducted using VBdigi alone, and net control can suggest that two stations move to an adjacent frequency, have one beacon, the other connect, and then pass traffic using the error-free ARQ protocol provided by flarq. If already connected to a station using flarq, net control can use Plain Talk to communicate with that station (without ARQ)

Flarq's "Plain Talk" facility can be used for either station in a connection to communicate with the other (on a non-ARQ basis) without breaking the connection or traffic transfer. For example, if there are too many repeated data blocks, one station might suggest that a slower PSK speed be used, or the transfer stopped and started over.

"Plain Talk" can also be used for casual, non-emergency, "semi-duplex", QSO's by one station sending a beacon on a clear frequency, and another station connecting, but neither sending any messages. Instead, both stations can talk to each other using "Plain Talk" in a manner similar to Internet chat, but without any error correction. If the connection quality is high enough to use the faster PSK speeds, it is possible to have quick exchanges that more closely resemble normal conversation than regular simplex communications do. However, while connected, emails, text files, binary files, or pictures can still be sent at any time. A color portrait, the size of a passport photograph, can be transferred in under 10 minutes (without any errors, and without excessive repeated data blocks), using PSK250 or PSK125, if the path quality is good enough.

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"The more a person talks about what they are going to do, the less they talk about what they have done."

A. Nony Mose

AERO Basic Operator Course

The Association of Emergency Radio Organizations, AERO, is holding a basic operator course. The session is being sponsored by Sherburne County ARES club at the Great River Energy Building in Elk River Minnesota on Saturday March 15, 2008. It starts 8:00 A.M. Scott ARES members who would like to register for the class, please contact Bob, N0BHC, on the weekly ARES net, by phone, or email – n0bhc@aol.com.

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Test Your ICS Knowledge

This month we will take a look at some of the concepts from the IS-100 course, Introduction to Incident Command System. This is the first of the FEMA courses all ARES members must complete before participating in any response activities. You can find the course materials at this site: http://training.fema.gov/EMIWeb/IS/is100.asp. Now, test your knowledge of the ICS.

Which Command Staff position serves as the primary contact for supporting agencies assigned to an incident?
a. Public Information Officer
b. Liaison Officer
c. Resource Officer
d. Safety Officer

After check-in, you should:
a. Locate your incident supervisor and obtain your initial briefing.
b. Determine your return mode of transportation.
c. Arrange personal items needed for your estimated length of stay.
d. Report to the command post.

Designers of the system recognized early that ICS must:
• Meet the needs of incidents of any kind or size.
• Provide logistical and administrative support to ensure that operational staff can meet tactical objectives.
• Be cost effective by avoiding duplication of efforts.
• _____
a. Require that a minimum number of personnel be deployed to perform administrative and logistics functions.
b. Use certified emergency responders to serve as incident commanders and section chiefs.
c. Allow personnel from a variety of agencies to meld rapidly into a common management structure.
d. Compensate for incident response failures likely to result from a tack of resources.

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Web Hits

APRS Information
Most of us have visited the APRS tracking site, Findu <http://findu.com>, and here's a new site based on Google Maps <http://aprs.he.fi> When you log in to this site by call sign, it looks up your coordinates and starts off with you in the center of the action. You might find yourself surrounded by quite a lot of APRS information!

Wireless Headset
Check out Randy K7AGE's stable of how-to ham radio videos on YouTube! <http://ca.youtube.com/profile?user=K7AGE> The latest is a nifty wireless headset adapter that uses inexpensive Bluetooth adapters. (from QRZ.com)

Secret Radar and Satellite Systems
Here's a fascinating Google Tech Talks video about once-secret radar and satellite systems from WWII through the 1960's. It's called "The Secret History of Silicon Valley" <http://youtube.com/watch?v=hFSPHfZQpIQ> and is presented by Steve Blank, who may also be KF6DDL. (from QRZ.com)

BREAK - OVER

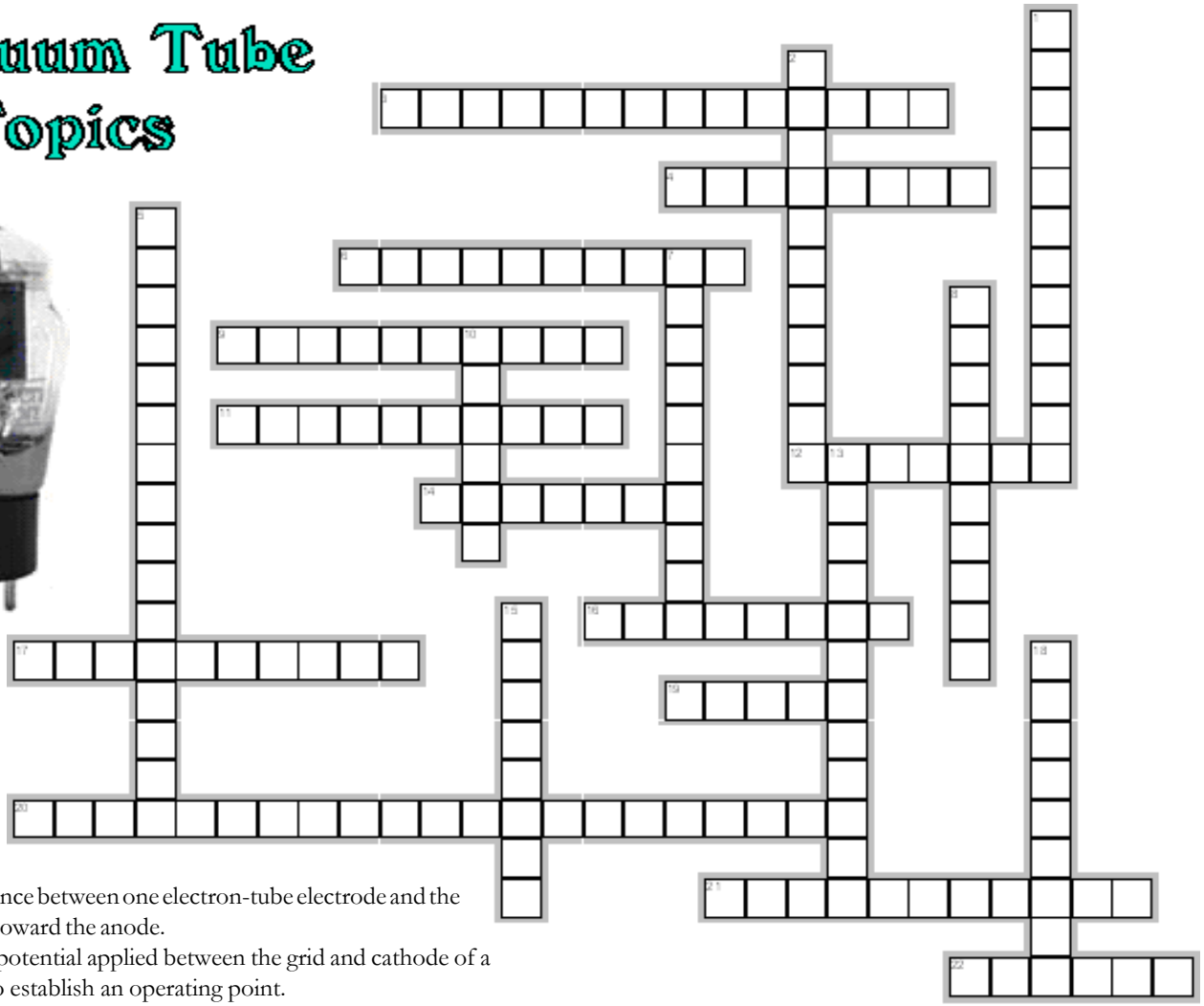
Answers for the January ICS Quiz

Which incident facility is positioned outside of the present and potential hazard area, but close enough to the incident to maintain command?
C. Incident Command Post

Check-in officially logs you in at the incident. The check-in process and information help to:
• Ensure personnel accountability.
• Track resources.
• Prepare personnel for assignments and reassignments.
• Organize the demobilization process .
• _____
D. Locate personnel in case of an emergency.

BREAK - OVER

Vacuum Tube Topics



Across

3. The capacitance between one electron-tube electrode and the next electrode toward the anode.
4. A constant potential applied between the grid and cathode of a vacuum tube to establish an operating point.
6. The operating condition of a circuit when no input signal is being applied to the circuit.
9. A grid placed between a control grid and the plate and usually maintained at a positive potential.
11. The point in a tube where a further increase in plate voltage no longer produces an increase in plate current.
12. A four-electrode electron tube containing a plate, a cathode, a control grid, and a screen grid.
14. A five-electrode electron tube containing a plate, a cathode, a control grid, and two grids.
16. An electron tube that makes use of velocity modulation in order to amplify or create ultra high frequency waves. As well as being instrumental in the advent of Doppler radar. This tube was instrumental in the development of high frequency broadcasting,
17. An undesired change in the waveform of the original signal, resulting in an unfaithful reproduction of audio or video signals.
19. An electron tube containing two electrode, a cathode, and a plate
20. An element designed to emit electrons that flow from cathode to plate. This is done by passing a current through the filament; the current heats the filament to the point where electrons are emitted.
21. The electrode of a vacuum tube, other than a diode, upon which a signal voltage is impressed to regulate the plate current.
22. Having an output that varies in direct proportion to the input

Down

1. An earlier name for a diode, or a two-electrode vacuum tube used as a detector.
2. The current that flows in the grid-to-cathode circuit of a vacuum tube
5. A measure of the change in plate current to a change in grid voltage with the plate voltage held constant. Usually expressed in micromhos
7. Tube that is the picture tube used in all television and monitor sets that require a scanning tube.
8. One of the first television "cameras" developed by Russian inventor Vladimir Zworykin in the early days of television.
10. An alkali metal introduced into a vacuum tube during manufacture. It is fired after the tube has been evacuated to react chemically with (and eliminate) any remaining gases.
13. The phenomenon wherein electrons emitted from a heated element within a vacuum tube will flow to a second element that is connected to a positive potential.
15. The cathode of a thermionic tube, usually a wire or ribbon, which is heated by passing current through it.
18. A diode-type electron tube which is used to produce the required 2450 MHz of microwave energy. It is classed as a diode because it has no grid as does an ordinary electron tube.

2008 FAR Scholarship Announcement

The Foundation For Amateur Radio, Inc., a non-profit organization with headquarters in Washington, D.C., plans to administer fifty-five (55) scholarships for the academic year 2008-2009 to assist licensed Radio Amateurs. The Foundation, composed of over seventy-five local area Amateur Radio Clubs, fully funds three of these scholarships. Eleven are funded with the income from grants. The remaining forty-two (42) are administered by the Foundation without cost to the various donors.

Licensed Radio Amateurs may compete for these awards if they plan to pursue a full-time course of studies beyond high school and are enrolled in or have been accepted for enrollment at an accredited university, college or technical school. The awards range from $500 to $3,000 with preference given in some cases to residents of specified geographical areas or the pursuit of certain study programs. Amateur Radio Clubs, especially those in Delaware, Maryland, Ohio, Pennsylvania, Texas, Virginia and Wisconsin, are encouraged to announce these opportunities at their meetings, in their club newsletters, during training classes, on their nets and on their world wide web home pages.

Additional information and an application form may be requested by letter or QSL card postmarked prior to 30 March 2007. Please send name, call and address to: FAR Scholarships, P.O. Box 831, Riverdale, MD 20738

Applications are also available electronically for download from the FAR website http://www.amateurradiofar.org. The Foundation encourages all qualified amateurs to apply for these awards.

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January Crossword Solution

DX Prefix Solution

Across

2. BOLIVIA—CP
5. PANAMA—HP
7. MEXICO—XE
8. SPAIN—EA
11. SWEDEN—SA
12. PHILIPPINES—DU
13. GREECE—SA
15. ALGERIA—7X
16. PERU—OA
17. SCOTLAND—GM
18. SOLOMONISLANDS—H4

Down

1. FRANCE—F
2. BRAZIL—PY
3. ITALY—I
4. BAHAMAS—C6
6. UNITEDSTATES—KA
8. SOUTHKOREA—HL
9. IRELAND—EI
10. SWITZERLAND—HB
14. BELGIUM—ON

Complex Systems

Jerry Wellman, W7SAR
WorldRadio Feb. 2008

I was asked rather bluntly what I thought of a rather complex communications system. It may shock you that I said it was a great thing. An Amateur Radio operator accused me of "selling out" to the commercial vendors. Not so. The complex system is great. Dispatchers are able to route calls and send data directly to officers in the field. Cars are tracked with GPS. License plate data can be sent directly to a computer in a car. It's a neat and complex system.

It works well and functions well in an increasingly complex world. My hope is that the system remains functional in an emergency. The officers who use the system are the same ones who protect my neighborhood. I want it to work!

When we promote Amateur Radio, it is NOT to replace complex public safety systems. We exist to augment systems or provide communications when normal systems fail or become overloaded. We exist to provide a system where one does not exist under normal circumstances. In day-to-day normalcy there is little need for a neighborhood CERT team to communicate with a police agency. There is no "normal" system in place. In an emergency it becomes "needed" to have the CERT people talk to the police and fire people. Can Ham Radio provide that link? Of course. We hope the normal (and complex) dispatch system remains working. What we can do is fill in emergency gaps for needs not done on a day-to-day basis.

Remember that we're not trying to replace systems that are in place (unless they fail) but to help connect people and agencies for those times when additional capacity and connectivity is needed often for groups that only function in extraordinary (i.e. emergency) situations. I want the complex systems to work. I want police and fire to continue to protect me and my family. What I can do is connect our local CERT/church/school/neighborhood to agencies in an emergency.

Be careful about what you promise or criticize. Amateur Radio would have a difficult time replacing complex systems in an emergency - and it's a task few of us would even consider! When you work with agencies and groups, promise only what you can deliver. And you know what you can deliver because you have trained and practiced and you're making promises when you are clearly thinking.

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Quick Training Tips

Training opportunities

WorldRadio Feb. 2008

We all need to make every effort to keep our skills sharp. We live in an ever-changing climate with regard to public service. Some skills we learned or used decades ago remain valid while other procedures have changed. It's a wise person who knows what works and what has changed. Too often we cling to the past with the belief that what worked then will work now.

There are dozens of on-line courses available from FEMA. You can download the materials and work through them in moments of spare time. We might scoff at the "new requirements" that are "being forced upon us" and try to avoid training - and if that's our attitude, we're wrong. (See www.scottares.org/training for a link to the FEMA courses.)

The concept of incident command, for example, was not a government program forced upon emergency responders. It is a system that was developed by responders because it dealt with and solved problems associated with emergency response. Other groups tried ICS and found it worked well for many types of responses. It made sense. It functions well especially in stressful incidents. FEMA has taken the concepts and now offers many courses to anyone at no cost.

Many states also offer training classes for emergency responders. You might also find that the state will pay for your lunch and possibly your transportation and overnight lodging if the classes last several days and are far away from your home. I've also discovered that there are openings for FEMA courses held at their training facility in Maryland. What's neat is that if you're accepted, your transportation and lodging are covered. You might have to pay for your meals, but everything else is provided at no cost - except for your time.

Don't sit back and tell yourself that training isn't your thing. It is. You need to know what's happening in the emergency response arena and you won't easily find it without attending and participating in training. I finished a couple of incident command courses last month and enjoyed them. I learned a lot. A better benefit, however, was sitting at a table with people who worked for various agencies. At one course I sat with military, police, homeland security and transportation workers, at another course I was with employees from the health department, a communications center and a fire department. We got to participate in table-top exercises and just get to know each other and learn about how the departments function in emergencies.

Best of all, we made introductions. I was able to talk about Amateur Radio. I learned about challenges the health departments face. The manager of a transportation department taught me about how they deal with traffic snarls and unexpected events such as HAZMAT spills. In the weeks following I've been able to visit and further explore ways Amateur Radio can work with a couple agencies. The transportation fellow was so excited that he's spending budget money to have antennas and radios available for a volunteer radio operator to use.

The communications center manager spent a few hours with me to ask about capabilities of Amateur Radio and obtain names of local ARES members who could come and help them equip and staff an emergency Ham station. Not only did we all gain from the ICS training, we opened doors all around to make things work better when events happen.

Please take every opportunity to participate in training and education. If you can offer to lead a seminar at a local school or church to teach how communications might work in an emergency. You will find that as you teach and exchange ideas, you will find people interested in Amateur Radio or in opening doors to allow Hams to function with a school, church or agency in an emergency.

BREAK - OVER

ARES Breakfast
Saturday January 12th
7:30AM
Perkins Restaurant
Savage, MN

NECOS Schedule - February 2008

4 Feb	W0NFE Bob
11 Feb	KB0FH Bob
18 Feb	KC0YHH Tony
25 Feb	N0PI Dan
3 Mar	WONFE Bob
10 Mar	KB0FH Bob