



ARES COMMUNICATOR

Information for Scott County Amateurs



October, 2006

Accurate, Reliable Emergency Communications

Volume 6, Number 10

Experimental License Granted For 500 kHz Research By Radio Amateurs

The FCC's Office of Engineering and Technology on September 13 granted Part 5 experimental license WD2XSH to the ARRL on behalf of a group of radio amateurs interested in investigating spectrum in the vicinity of 500 kHz. The two-year authorization permits experimentation and research between 505 and 510 kHz (600 meters) using narrowband modes at power levels of up to 20 W effective radiated power (ERP). ARRL Member Fritz Raab, W1FR, of Vermont, will serve as experimental project manager for "The 500 KC Experimental Group for Amateur Radio" <<http://www.500kc.com/>>

"I'm kind of excited to see how we can apply modern technology to a 'classic part' of the radio spectrum," Raab told ARRL this week. He pointed out that 500 kHz - the traditional maritime emergency frequency - is roughly geometrically halfway between the 136 kHz experimental band and the 160 meter amateur allocation.

"In contrast to 160 meters, 500 kHz is low enough to offer good groundwave propagation, but in contrast to 137 kHz it is high enough to allow us to engage in real communication with realistic equipment." Raab eventually would like to see at least a secondary 600-meter amateur allocation from 495 to 510 kHz.

"Besides the opportunities for experimenting at low frequencies, that frequency is well suited to regional groundwave communication," Raab said. He envisions eventual use of the spectrum to provide Amateur Radio emergency communication via groundwave, without having to deal with the vagaries of the ionosphere or causing interference to other services.

For about a century, the 500 kHz region was an important band for maritime communication, emergency and other-

Experiment cont'd page 2

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Jamboree on the Air October 21-22, 2006

Jamboree on the Air (JOTA) is an annual event in which about 500,000 Scouts and Guides all over the world make contact with each other by means of amateur radio. It is a real Jamboree during which Scouting experiences are exchanged and ideas are shared, thus contributing to the world brotherhood of Scouting. The JOTA is a world-wide event. Units may operate for 48 hours or any part thereof, from Saturday 0000 h until Sunday 2400 h local time. It is for members of the World Organization of the Scout Movement (WOSM), and also for members of the World Association of Girl Guides and Girl Scouts (WAGGGS).

Since 1958 when the first Jamboree-on-the-Air was held,
Jamboree cont'd pg. 2



ARES Activities

Marathon for Nonpublic Education
Saturday October 7th, Shakopee
Weekly Net Monday 7 PM 146.535 mhz (s)
No Breakfast in October

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
Neighboring Nets			
North Dakota	3.937Mhz	6:30pm	Daily
South Dakota	3.870Mhz	6:00pm	Daily
Wisconsin	3.985Mhz	5:30pm	Daily

Jamboree *cont'd from pg. 1*

millions of Scouts have met each other through this event. Many contacts made during JOTA have resulted in pen pals and links between Scout troops that have lasted many years.

With no restrictions on age or on the number of participants, and at little or no expense, JOTA allows Scouts to contact each other by ham radio. The radio stations are operated by licensed ham radio operators. Many Scouts and leaders hold licenses and have their own stations, but the majority participate in JOTA through stations operated by local radio clubs and individual radio amateurs. Some operators use television or computer-linked communications. The exchanges typically include information such as; Name, Location (QTH), Scout rank, Hobbies, Age, etc.

Stations should call "CQ Jamboree," or answer stations doing so. Any authorized frequency may be used. It is recommended that stations use the agreed World Scout Frequencies, provided elsewhere in this article. To avoid congestion, use close-by frequencies.

JOTA is not a contest. The idea is not to contact as many stations as possible during the weekend. Station operators need to consult their applicable Third Party Agreements for a list of countries scouts may converse with during JOTA.

Scout Station Callsigns

Making contact with the Scout Stations requires patience, as many stations call at the same time. Please follow instructions given by the operators and do not interfere with on-going contacts. They speak in as many languages as possible.

World Scout Frequencies

Band	SSB	CW
80 m	3.740 / 3.940 MHz	3.590 MHz
40 m	7.270 MHz	7.030 MHz
20 m	14.290 MHz	14.070 MHz
17 m	18.140 MHz	18.080 MHz
15 m	21.360 MHz	21.140 MHz
12 m	24.960 MHz	24.910 MHz
10 m	28.390 MHz	28.190 MHz



Experiment *cont'd from pg 1*

wise. The band is occasionally used by "heritage" commercial maritime stations, such as the Maritime Radio Historical Society's KPH on the West Coast, on special occasions. 500 kHz remains designated as an official maritime emergency CW frequency, although the vast majority of maritime users have shifted to satellite-based systems.

In addition to experimentation and regional emergency work, Raab says he believes that the 505-510 kHz spectrum could serve as "an historic band" that could support various commemorative special event-type operations. Proposals are under consideration in the UK and Ireland to establish an experimental Amateur Radio allocation in the vicinity of 500 kHz.

The WD2XSH project calls for operation from 21 discrete fixed sites spread throughout the US. Participants all are electrical professionals, many with maritime radio backgrounds, Raab said, adding that operation already has begun. The group eventually will be seeking reports from non-participants, he said.

Raab says the gear participants will use represents "every kind of antenna and equipment you can imagine," including surplus vacuum-tube maritime units. At his Colchester, Vermont, location he's using a 42-foot vertical, but others are employing inverted Ls, loops and Marconis, among others.

Raab was a co-author of the article "A 100-W Class-D Power Amplifier for LF and MF," which appeared in the March-April edition of QEX <<http://www.arrl.org/qex/2006/03/toc.pdf>>. He's using an amplifier of that design for his WD2XSH operations.

Monitor 508 kHz (+/-) to copy the northern Minnesota Station. Reception reports can be sent directly to the station or entered on the www.500kc.com website.

BREAK - OVER



"America will never be destroyed from the outside. If we falter and lose our freedoms, it will be because we destroyed ourselves."

Abraham Lincoln

Quick Training Tips

Station to Station Contact

Why bother to get it right?



The most important function of a directed emergency net is to facilitate the movement of information accurately and rapidly from one location to another in support of the served agency.

The procedure for moving information from station to station in a directed emergency net is effective and efficient needs to be strictly followed to accomplish our goal. Consistently practicing the correct procedure is key to our performance during an actual emergency.

The station-to-station contact procedure has evolved over time to support accurate, rapid communication. Let's take a look at the process step by step. We'll use tactical callsigns in this example.

A station calls the NECOS (net control station) and announces, "Shelter One with one priority for Red Com, OVER."

The NECOS acknowledges the traffic by saying, "Shelter One ROGER, OUT." When the sending station, Shelter One, hears this, he knows that the NECOS knows about his traffic and has entered it on the net schedule.

When the time has come to pass the traffic the NECOS directs the stations involved to pass the traffic by saying, "Shelter One call Red Com and pass one priority, OUT." The specific instructions of the NECOS are important to understand. The NECOS has alerted both the sender and receiver that a message is about to change hands. The NECOS then turns the net over to these two stations by using the proword OUT.

The station receiving the traffic answers first. This is important enough to repeat – THE RECEIVING STATION REAPONDS FIRST. Red Com would respond to the NECOS direction by saying, "Red Com ready to copy, OVER."

This procedure may seem confusing at first but keep in mind our objectives of accuracy and speed. When the receiving station answers first, the NECOS immediately knows several important facts. First, the receiving station received the NECOS direction. Second, the receiving station, Red Com, can copy the sending station, Shelter One. Third, the receiving station is ready to copy the message. All this information is transmitted with four words, "Ready to copy, OVER." The NECOS knows that the message should be transferred from Shelter One to Red Com without his intervention.

If the station receiving the message had difficulty copying the sending station they would say something like, "This is Red Com, I have difficult copy on Shelter One and may need a relay, OVER" The NECOS would then announce, "All stations this net copy, the following traffic for relay if needed, Shelter One call Red Com and pass 1 priority, OUT".

At this point the net is all ears following the transfer of information. The Receiving station, Red Com would respond, "This is Red Com, ready to copy, OVER".

The sending station would then send the message starting with, "Message follows, . . .". At the end of the message the sending station would use the prowords, BREAK OVER".

If the receiving station had correctly copied the message and could read it back word-by-word for verification, he would acknowledge receipt by saying, "ROGER, (FCC ID) OUT".

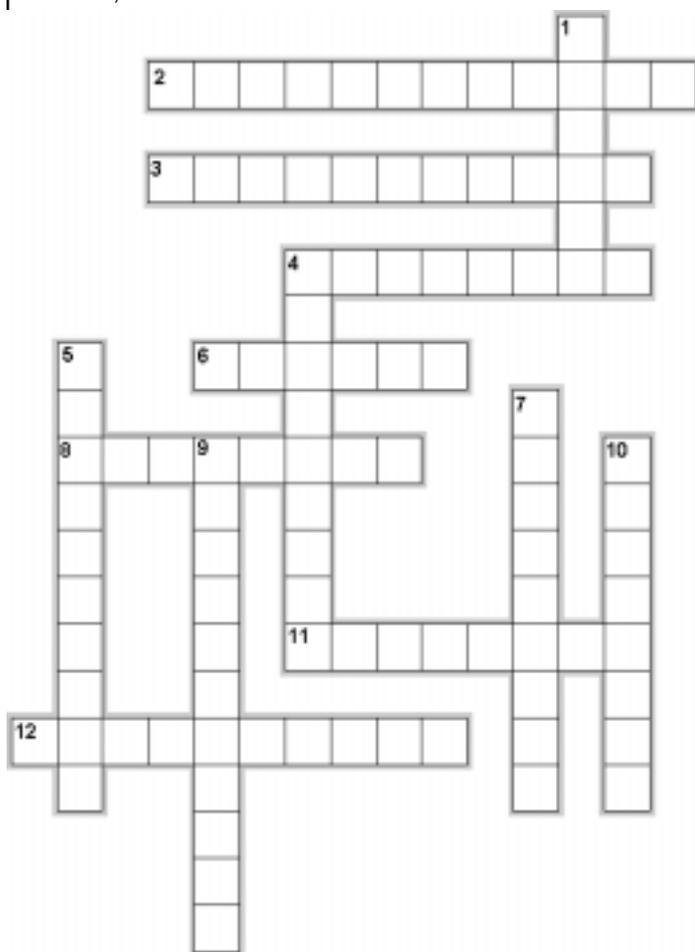
Upon hearing this statement the sending station and NECOS know the information has been relayed to the receiving station and the NECOS must reassume control of the net.

This procedure is followed exactly whenever one station requests contact with another directed net participant. A station wishing to talk with another station on a directed net would call NECOS and state, "This is N0BHC, I would like to talk with W0NFE, OVER." If the timing for the contact is appropriate, NECOS would say, "N0BHC, call W0NFE, OUT." The station being called would answer, "This is W0NFE, OVER". The conversation between the two stations would then take place. The NECOS would know the conversation was completed when the stations ended with an FCC ID and the proword OUT.

The NECOS never takes shortcuts in this procedure. Phrases such as "Call your station" or "Pass your traffic" are sloppy operating and not acceptable in a directed net.

The NECOS has responsibility not only for orderly efficient movement of messages through the net, he is also responsible for setting the standard for operating procedure. A sloppy NECOS will result in wasted time and error filled messages.

When the chips are down, we will perform at the level we practice. We cannot accept anything less than our best during an emergency so we must practice as if our lives depend on it.



Colorful Minnesota Trees

Across

2. Small to medium tree. Flattened leafstalk produces a nervous tremble in the slightest breeze. Contributes a bright yellow to the fall color.
3. Large tree grown on rich bottom lands mostly in the southern part of the state. Leaves are 12" to 24" long, fruit is black with a very hard, thick shell surrounding a rich oily kernel.
4. Member of the maple family. Seeds often stay on all winter. Shares its name with a black/orange beetle that gathers on the sunny side of the house.
6. Small tree or shrub except when growing along streams and other moist places. Seeds grow in clusters called "catkins". Apparently a sad tree, often described as weeping.
8. Generally a smaller tree with light brown twigs. Leaves are needle-like, flat, soft, about 1" long in clusters. Leaves turn dull yellow in the fall. The only conifer in Minnesota that loses its leaves each fall.
11. Medium sized tree with three- to five-pointed saw-toothed lobe leaves. One of the first to turn brilliant shades of red, orange, and yellow.
12. Large evergreen having needle-like leaves 4" to 6" long in clusters of two. This Scandinavian sounding conifer is found "up north" in sandy, dry locations.

Down

1. Small tree with needle-like leaves that are bluish-green, short, pointed, four-sided and 1/2" long. Cones are 1/2" to 1 1/2" long and may stay on the tree. May be found in Christmas Tree lots in December.
4. Medium sized conifer with flat needles 1/2" to 1" long with rounded point. Purple upright cones are 2" to 4" long. Usually found "up north".
5. Large tree with 3" leaves that turn yellow to yellow-orange in the fall. It sheds annoying white feathery seeds that clog the screens and AC units in the spring.
7. Large, straight conifer with needle-like leaves 2 1/2" to 5" long in bundles of five. Cones are 4" to 8" long with very thin gummy scales. Grows in the north, central, and eastern parts of the state.
9. Large tree responsible for bright yellow fall leaves. Almost wiped out by that Dutch disease.
10. Large tree with compound leaves in groups of five or nine. Seeds are 1" to 2" long resembling canoe paddle blades with the seed toward the handle end. Contributes yellow or purple to the autumn leaf pile.

September Crossword Solution - State Fair Trivia

Across

1. AGRICULTURE—Building where you check out the prize-winning produce.
4. CAROUSEL—Here we go 'round and 'round.
5. GRANDSTAND—A great place to watch Dan Patch race.
8. MIDWAY—where the rides are!
10. FISHPOND—Let's see if that big Exos lucius is back this year.
11. COLISEUM—Showy equine venue.
13. SPACETOWER—A high altitude view of the area.

14. HAUNTED—house that promises a spooky show.

Down

2. GIANTSLIDE—Whee! a bumpy ride top to bottom.
3. FOODBUILDING—The spot to cure hunger.
6. CAMPGROUNDS—Nomad's temporary home.
7. CATTLE—barn called the hamburger hotel.
9. FINEARTS—Not your everyday art - the "good" stuff.
12. SKYRIDE—Overhead voyage from Underwood St. to the midway.
13. SWINE—Barn for the bacon.

NEW PUBLIC SAFETY AND HOMELAND SECURITY BUREAU

The FCC has formally launched its new Public Safety and Homeland Security Bureau (PSHSB). The PSHSB will assume some functions that had been under the umbrella of the Wireless Telecommunications Bureau (WTB), where the Amateur Radio Service will remain. WTB Public Safety and Critical Infrastructure Division Chief Michael J. Wilhelm, WS6BR, has assumed a role within the new bureau, however.

“The events of September 11, 2001, and last year’s hurricane season underscored America’s dependence on an effective national telecommunications infrastructure,” the Commission said. “The new bureau will build on the Commission’s longstanding commitment to meet the needs of public safety by promoting robust, reliable and resilient communications services in times of emergency.” Addressing interoperability issues will be a part of that process, according to Acting Bureau Chief Ken Moran.

The PSHSB is responsible for the combined public safety-related functions previously spread among other bureaus and offices. It will include Policy, Public Communications Outreach and Operations and Communications Systems Analysis divisions. Wilhelm will serve as deputy chief of the PSHSB’s Policy Division. The Public Communications Outreach and Operations Division will operate the FCC’s Communications Center and the High Frequency Direction Finding Center.

BREAK - OVER



FEMA Training Courses

Recommended for ARES communicators

Training requirement for emergency communications volunteers are constantly changing. The following FEMA on-line courses are recommended (soon to be required) for ARES members working with any government served agency.

- The four on-line self-study courses are;
- IS-100 Introduction to Incident Command System,
- IS-200.FW Basic Incident Command System
- IS-700 National Incident Management System (NIMS)
- IS-800.A National Response Plan (NRP)

See the Scott ARES website, www.scottares.org, website for the address for the FEMA courses. When you complete the course, send a copy of the completion certificate to Bob, N0BHC.

BREAK - OVER

Happy Birthday U.S. Navy

231 years old!

October 13, 1775 - 2006



On Friday, October 13, 1775, meeting in Philadelphia, the Continental Congress approved the original legislation out of which the Continental Navy grew and as such constitutes the birth certificate of the navy.

“Resolved, That a swift sailing vessel, to carry ten carriage guns, and a proportionable number of swivels, with eighty men, be fitted, with all possible despatch, for a cruise of three months, and that the commander be instructed to cruize eastward, for intercepting such transports as may be laden with warlike stores and other supplies for our enemies, and for such other purposes as the Congress shall direct.

That a Committee of three be appointed to prepare an estimate of the expence, and lay the same before the Congress, and to contract with proper persons to fit out the vessel.

Resolved, that another vessel be fitted out for the same purposes, and that the said committee report their opinion of a proper vessel, and also an estimate of the expence.”

BREAK - OVER

ARES Breakfast No October Breakfast

Due to conflict with AERO
Basic Operator training
session



NECOS Schedule - October 2006

2 Oct	K0KTW Pat
9 Oct	N0PI Dan
16 Oct	W0NFE Bob
23 Oct	KB0FH Bob
30 Oct	AB0YQ Steve
6 Nov	K0KTW Pat