



ARES COMMUNICATOR

Information for Scott County Amateurs



September, 2012

Accurate, Reliable Emergency Communications for our Community

Volume 12, Number 9

Cycle for Life

September 22, 2012 Ops Needed

Scott ARES has been asked to provide communications support for a fundraising event benefiting the Cystic Fibrosis Foundation of Minnesota. Recent changes by the event organizers will require additional radio operators.

If you are available, the CFF and your community could use your communications skills.

The cycling event will take place over two routes across southern

Scott County. There event will include a long course of 65 miles and a shorter lap of 32 miles. There are already approximately 50 riders registered. The riders will begin the course at 7:00 am with expected finish time around noon.

Scott ARES is planning a directed net linking the on-course rest stops with the start/stop area. Additional communications points may be added depending on the number of communications volunteers.

This event will provide an opportunity for ARES member to put their emergency communications skills to good use supporting a worthwhile event in our community. ARES members, and other amateurs, who would like to participate should contact Bob, N0BHC, via email: n0bhc@arrl.net, or check in on the regular Monday evening training net at 7:00 pm on 146.535 mHz (simplex).

This should prove to be a fun event and the organizers hinted that there might be a tasty BBQ for volunteers at the conclusion of the event. It is important you confirm your participation ASAP so event organizers can prepare for enough food!!

BREAK - OVER



WACU

Work All Azores Islands!

Are you ready to fly to azores for free by making nine QSOs?

Yes indeed, those of you willing to spend 24 hours or less on the radio are eligible to participate in an Azores lottery for two all-paid packages to the beautiful Azores Islands in the Atlantic, completely free of charge. The project is organized by the Azores-Finland Friendship Consortium in partnership with the Amateur Radio Associations of the Azores Islands and supported by the Azores Promotion Agency (ATA) and Azorean Airlines (SATA). Just look at www.visitazores.com and make up your mind.

Not many people know that the Azores consist of nine populated islands, stretching over a distance of 602 km (305mi) from East to West, next to USA and Europe. And it is not widely known that the Azores have their own airline (SATA) flying to each island, in addition to many destinations in Europe and North America. Each island has its own characteristics and its own blend and alone qualifies for your visit there. While these islands count for a single DXCC entity, they offer three (3) IOTA groupings.

With this unique AZORES 9 ISLANDS HUNT, an invited **WACU** *cont'd on page 2*

ARES Activities

Weekly Net Monday 7 PM 146.535 mhz (s)

Breakfast Saturday, September 8th

Digital Monday, September 10th

ARES Nets

MN ARES Phone Net	6:00PM Sunday	Freq: 3.568 mhz
ARRL MN Phone Net	12:00p, 4:30p CST Daily	Freq: 3.568 mhz
ARRL MN CW Net	6:30p, 9:50p CST Daily	Freq: 3.568 mhz

NETS WITH OUR NEIGHBORS

North Dakota:	Daily 3.937 mhz	6:30pm
South Dakota:	Daily 3.870 mhz	6:00pm
Wisconsin:	Daily 3.985 mhz	5:30pm
Iowa:	Daily 3.970 mhz	12:30/

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 Reader submissions encouraged!

WACU - cont'd from page 1

international group of amateur radio operators together with resident Azores amateurs will be activating the nine islands, offering an opportunity to the world to contact these islands all at once over one weekend:

Saturday, September 29, 1200 UTC to September 30, 1200 UTC (24 hours).

Frequency Windows:

CW: 7000-7015, 18080-18090 and 14050-14065 kHz

SSB: 7175-7195, 18120-18135 and 14250-14275 kHz

Those making a QSO with at least 5 different islands will have a corresponding number of tickets placed into a lottery for a free trip to the Azores (e.g. if you have QSOs with 7 islands, you will get 7 lottery tickets). Additionally, the first 25 operators making QSOs with all 9 islands will be eligible for a second lottery. The free trips are from the closest airport served by SATA; including flight, accommodation and transfers.

All QSOs will be confirmed through the bureau network with special full-color cards. Direct QSL requests via Jose Melo, CU2CE.

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Test Your NIMS Knowledge

This month we will finish our review of ICS-200b: ICS for Single Resources and Initial Action Incidents. Check your recall of the course material with these questions.

1. Select the TRUE statement:

A. Span of control may be extended beyond 1:10 in order to ensure that more resources can be deployed on complex, large incidents

B. Span of control is accomplished by organizing resources into Teams, Divisions, Groups, Branches, or Sections

C. Span of control should be established without consideration of factors such as the type of incident, nature of the task, hazards, and safety factors

D. Span of control is less of a factor of concern for incidents that are resolved within the initial operational period

Check next month's ARES Communicator for the solution

August NIMS Knowledge Solution

1. Which is the top priority within the ICS common leadership responsibilities?

D. Ensuring safe work practices

2. The information and intelligence function may be organized in one of the following ways:

- Within the Command Staff

- As a Unit Within the Planning Section

- As a Branch Within the Operations Section

-

B. Under the Communications Unit within Logistics

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FCC Study on Amateur Radio

Mandated Study Completed

On August 20 — in response to a Spring 2012 Congressional directive — the Federal Communications Commission released its findings on the Uses and Capabilities of Amateur Radio Service Communications in Emergencies and Disaster Relief: Report to Congress Pursuant to Section 6414 of the Middle Class Tax Relief and Job Creation Act of 2012.

This report contains the FCC's "review of the importance of emergency Amateur Radio Service communications relating to disasters, severe weather and other threats to lives and property in the United States; and recommendations for enhancements in the voluntary deployment of Amateur Radio operators in disaster and emergency communications and disaster relief efforts; and recommendations for improved integration of Amateur Radio operators in the planning and furtherance of initiatives of the federal government." It also required "that the study identify impediments to enhanced Amateur Radio Service communications and provide recommendations regarding the removal of such impediments."

"There are many positive things included in the FCC report to Congress," said ARRL Regulatory Information Manager Dan Henderson, N1ND. "We are pleased that the Commission highlighted the existing Amateur Radio infrastructure to provide disaster and time-critical communications. They also recognized the flexibility of the Amateur Service in working with federal, state, local and tribal emergency service agencies to supplement existing communications. The affirmation of the value that Amateur Radio brings to the communities across the country is underscored by the suggestion that DHS work with state, local, and tribal authorities so they may develop disaster area access or credentialing policies for trained amateur operators, including a means for documenting their qualifications..."

While the FCC did hold Amateur Radio in a positive light in its discussion of emergency Amateur Radio Service communications, the FCC report was not as favorable in the portion of the study that addressed impediments to enhanced Amateur Radio Service communications. In the comments provided to the FCC as they prepared the study, the ARRL — as well as numerous individuals — cited the proliferation of specific land-use restrictions, such as deed restrictions and homeowners associations covenants, that prohibit the erection of even modest Amateur Radio antennas.

In the report, the FCC recommended that "DHS consult with the public safety, emergency management and Amateur Radio emergency communications associations and groups to identify training opportunities that will support better utilization of Amateur Radio operators for emergency communications, and to solicit views on how Amateur Radio capabilities could be further incorporated into response plans or initiatives. We also recommend that OEC include these recommendations in the NECP."

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Weather Service Adds Ice Index

Beginning this fall, meteorologists will be able to use it to provide advanced warning of icing events in their areas.

The Sperry-Piltz Ice Accumulation Index, developed in Oklahoma in 2007, was licensed by the weather service as an optional product available for distribution through local and regional forecasting centers for the next five years.

"Ice storms seem to be occurring more frequently, and that can lead to more power outages," said Sid Sperry of the Oklahoma Association of Electric Cooperatives, who received word of the licensing agreement July 13.

"When utilities have an idea where the most serious problems can occur, they can preposition equipment and personnel to respond more quickly to system damage." As director of public relations, communications and research for the Oklahoma statewide, Sperry worked with Steve Piltz, a weather service meteorologist, to develop the ice index.

"We consider ice accumulations, winds and other weather factors and their effects on transmission and distribution systems, and in most cases, co-ops have more time to prepare," said Sperry.

The model provides a scaled prediction of damage to overhead lines and equipment with two or three days advance warning. Since 2009, co-ops in Oklahoma, Missouri, Iowa, Nebraska, Arkansas, Louisiana and Alabama have used the ice index. It has also been tested in several other states.

"The optional license agreement now gives local forecast offices the ability to use the index as they choose, free of charge," said Sperry. "I've also been approached by the Federal Emergency Management Agency and the U.S. Army Corps of Engineers about using the index for their own planning purposes."

The expanded availability of the index could benefit public works and public safety agencies by enabling them to treat potential trouble spots ahead of time.

"Emergency management agencies can use it to plan for their volunteer and sheltering needs," said Piltz, meteorologist-in-charge at the Tulsa office of the National Weather Service.

"During extended power outages in the winter, some people can't stay in their homes, so knowing where shelters will be needed could be a huge benefit."

BREAK - OVER



Take a Dip in the General Pool

Time to test your knowledge of the information covered by the General Class license exam. Each month we'll take a look at a selection from the question pool. Here is this month's sample:

1. When selecting a CW transmitting frequency, what minimum frequency separation should you allow in order to minimize interference to stations on adjacent frequencies?
 - A. 5 to 50 Hz
 - B. 150 to 500 Hz
 - C. 1 to 3 kHz
 - D. 3 to 6 kHz
2. What is the customary minimum frequency separation between SSB signals under normal conditions?
 - A. Between 150 and 500 Hz
 - B. Approximately 3 kHz
 - C. Approximately 6 kHz
 - D. Approximately 10 kHz
3. What is the "DX window" in a voluntary band plan?
 - A. A portion of the band that should not be used for contacts between stations within the 48 contiguous United States
 - B. An FCC rule that prohibits contacts between stations within the United States and possessions on that band segment
 - C. An FCC rule that allows only digital contacts in that portion of the band
 - D. A portion of the band that has been voluntarily set aside for digital contacts only

(Check next month's issue of the ARES Communicator for the answer.)

August General Pool Answer

1. What is the first thing you should do if you are communicating with another amateur station and hear a station in distress break in?
 - B. Acknowledge the station in distress and determine what assistance may be needed
2. If propagation changes during your contact and you notice increasing interference from other activity on the same frequency, what should you do?
 - C. As a common courtesy, move your contact to another frequency

The Results are In!

The Minnesota Wireless Association has just announced the results for the 2012 Minnesota QSO Party. The winners in the Mobile – Unlimited Class was (drum roll please) our own N0PI, Dan, and his QSO Party partner K0AD, Al.

"Al –K0AD & Dan -N0PI have a well tested setup for the Mobile Unlimited, and no surprise they're back again at the top in this category," was the statement from the contest organizers.

The Unlimited duo scored 172,800 points making 1152 contacts while operating from 23 Minnesota counties. An effort like this takes careful planning in both logistics and RF equipment and operation.

This wining effort sets a new all-time record for the Mobile –

Unlimited category. The old record of 156,675 points was set in 2010 by a pair of operators, N0PI and K0AD!

Congrats to Al and Dan on their accomplishment. We'll have to see if the Certificate (or plaque) makes an appearance at the monthly ARES breakfast!

The 15th Minnesota QSO Party will be held on Saturday, February 2nd, 2013 from 1400 UTC until 2400 UTC. You can find the latest information, tools and updates on the MN Wireless Assn website at: www.w0aa.org.

BREAK - OVER



GULF OF ADEN A landing craft air cushion returns to the welldeck of the amphibious transport dock ship USS New York (LPD 21). New York is part of the Iwo Jima Amphibious Ready Group and is deployed in support of maritime security operations and theater security cooperation efforts in the U.S. 5th Fleet area of responsibility.

Clever or creepy?

Site knows when you're home

If you absolutely insist on adding your location to any tweets or check-ins you make while inside your home, well, as an added bonus, you can now also have a photo of your house broadcast around the Internet!

Hooray?

A website with the very explicit name WeKnowYourHouse.com is walking the fine line between creepy and clever by drawing attention to the safety concerns arising from location-enabled social updates.

WeKnowYourHouse scans Twitter for location-enabled tweets with phrases like “at home” then matches the location to its corresponding Google Street View image.

“All of this information is publicly accessible,” reads an explainer on the site. “WeKnowYourHouse.com is simply pulling it all together to show what could happen when you tweet with your location or check in to somewhere.”

It's a bit similar to PleaseRobMe.com, which also operates under the banner of user awareness in sharing check-ins from people, indicating they're not at home.

Now because WeKnowYourHouse is just scrolling for strings of words, it can be a bit imperfect. Some recent entries on the site include “I left my bank card at home,” someone tweeting about “seeing my home room teacher,” and another person checking into the Home Depot. And while the hardware store probably appreciates the micro-promo, updates like that are pretty useless to the site.

Still a majority of shared tweets — including many Foursquare check-ins where the location is simply “Home” — drive home the point about oversharing effectively.

So how do you avoid having an image of where you are *right now* tossed out across the Internet? It's kind of simple actually: Don't hit that “Add location” button when tweeting.

And for apps like Foursquare, WeKnowYourHouse offers this similarly straightforward tip: “A general piece of advice is *don't check in at your own home* because you're sharing that information with the world.”

BREAK - OVER



“Education is that which remains, when one has forgotten everything he learned in school.”

Albert Einstein

Clog-Free Inkjet Printer Nozzle

Inspired By The Human Eye

There was a time not so long ago that inkjet printer saw a lot of action. Nowadays, however, it can sit idle for weeks or even months before being called into service. But when it is called upon, the long break between print jobs means the print heads are usually clogged and an ink-wasting head clean needs to be performed.

Taking inspiration from the human eye, researchers at the University of Missouri (MU) have developed a print nozzle that prevents the ink inside from drying out when not in use.

To keep the surface of our eyeballs moist, our eyelids spread a film of oil that prevents a thin layer of tears from evaporating. Recognizing that the same principle could be used to keep ink from drying out in the print nozzle opening, Jae Wan Kwon, associate professor in the College of Engineering, and MU engineering student Riberet Almeida, developed a system that uses a droplet of oil to block air from getting to the ink in the nozzle and drying it out.

Because mechanical shutters like eyelids would not work at the small scale of the inkjet nozzle, as the droplet would stay in place thanks to surface tension, Kwon's system uses an electric field to move the droplet of oil in and out of place.

Kwon says his technology could be adapted for use in other devices in which the material being sprayed through the nozzle is even more valuable and expensive than ink — hard as that may be to believe, such substances do exist.

“Other printing devices use similar mechanisms to ink jet printers,” Kwon said. “Adapting the clog-free nozzle to these machines could save businesses and researchers thousands of dollars in wasted materials. For example, biological tissue printers, which may someday be capable of fabricating replacement organs, squirt out living cells to form biological structures. Those cells are so expensive that researchers often find it cheaper to replace the nozzles rather than waste the cells. Clog-free nozzles would eliminate the costly replacements.”

Rapid prototyping systems are another potential application suggested by Kwon for the technology. These devices emit streams of liquid plastic through nozzles like those on an ink jet printer, but the thick, sticky liquid can clog quite easily. This means that the whole nozzle, which can cost thousands of dollars, will often have to be replaced.

“The nozzle cover we invented was inspired by the human eye,” said Kwon. “The eye and an ink jet nozzle have a common problem: they must not be allowed to dry while, simultaneously, they must open. We used biomimicry, the imitation of nature, to solve human problems.”

BREAK - OVER

Power Budget

Will You Survive the Day?

Don't worry this isn't a sales pitch to lower your home electric bill or commentary on Government spending! What we are going to talk about is your portable communications operating power requirements.

If you regularly use an HT to communicate (or cellphone) you probably just pop it in the charger every day or two out of habit. That is a good strategy for normal use but what about an emergency? Do you have an idea how much battery power you will need? How would you supplement your power supply?

It starts with Watts. You first need to determine the power needs for your equipment. This means locating the manual searching for the 'Specifications'. A helpful hint: start at the back of the book. You want to find the current requirements for both Receive (quiet or squelched) and Transmit and the rated voltage.

Okay, you'll have to recall a little Ohms Law here. A typical HT might have the following specs: RX 170 ma, TX (5W out) 2A at 13.8V. A mobile transceiver might show these numbers: RX 1.2A, TX (50W out) 12A at 13.8V. Okay, so now what? Remember that Watts are also called volt-amps?

The typical HT requires the following watts: RX - 2.4W (.170 A x 13.8V), and TX - 28W. (Now, before all the sliderule experts start firing off emails, we are going to round all calculations upward. We do not want to end up 0.08W short and a dead transmitter before the end of the day.) The mobile rig has a thirst measured as RX - 16.6W and TX (50W out) 166W.

Well, so what! Next you have to consider how the time will be split between transmitting and receiving. This is where we make some assumptions. Suppose you are manning a communications point at a shelter or check point. Hopefully you won't be transmitting 100% of the time. A good approximation might be 20% transmit and 80% receive. If you are NECOS on a busy net your numbers might be closer to 40% transmit and 60% receive.

Now we have two values for power and two percentages for RX/TX usage. We need to put these numbers into a form we can use. Let's take a look at the power requirements for a HT over a 1 hour period. RX will be 80% x 2.4W and TX will be 20% x 28W. The HT will require about 8 W per hour used at our estimated 80:20 RX/TX ratio. The NECOS operating with a 50W mobile transceiver would need about 77 W per hour.

Putting all our hard calculations to use, let's assume we are planning on a public service event that will take about five hours to complete. It looks like the HT user would plan on at least 40AHrs of power while the NECOS would need about 385AHrs. That wasn't so bad, but hold on a minute!

We know that the voltage supplied by batteries tends to drop

cont'd col. 2

Military Time

On one air base, the Air Force is on one side of the field and civilian aircraft use the other side of the field, with the control tower in the middle.

One day the tower received a call from an aircraft asking, "What time is it?"

The tower responded, "Who is calling?"

The aircraft replied, "What difference does it make?"

The tower replied, "It makes a lot of difference... If it is a commercial flight, it is 3PM. If it is an Air Force aircraft, it is 1500 hours.

If it is a Navy aircraft, it is 6 bells. If it is an Army aircraft, the big hand is on the 12 and the little hand is on the 3. If it is a Marine Corps aircraft, it's Thursday afternoon and 120 minutes to "Happy Hour."



BREAK - OVER

Power Budget cont'd from col. 1

as they are discharged. The watts we calculated were at 13.8V! This is a fully charged battery. We know as the voltage drops current increases - there just is no escape from Ohms Law! Just to be safe we need to build in some Margin for Murphy in our battery budget. Let's plan on 60 to 80 AHrs for the HT user and 500 to 750 AHrs for the NECOS.

Now, who's bringing the lunch?

BREAK - OVER



ARES Breakfast

Saturday September 8th
7:30AM
Perkins Restaurant
Savage, MN

NECOS Schedule September 2012

3 Sep	KB0FH Bob
10 Sep	KC0YHH Tony
17 Sep	N0PI Dan
24 Sep	W0NFE Bob
1 Oct	KB0FH Bob
8 Oct	KC0YHH Tony
15 Oct	N0PI Dan
22 Oct	W0NFE Bob