



# ARES COMMUNICATOR

Information for Scott County Amateurs



September, 2014

Accurate, Reliable Emergency Communications for our Community

Volume 14, Number 9

## Cycle for Life Event

Saturday, September 20, 2014

Scott ARES has again 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 25 miles.

There are already approximately 50 riders registered.

The riders will begin the course at 8:00 am with expected finish time around noon.

Scott ARES is planning a directed net linking some on-course rest stops and two SAG wagons 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](mailto:n0bhc@arrl.net), or check in on the regular Monday evening training net at 7:00 pm on 146.535 mHz (simplex). The monthly breakfast on September 13<sup>th</sup> at the Perkins restaurant in Savage is another opportunity to sign up or get more info. The informal breakfast group usually begins around 7:30 AM.

This should prove to be a fun event and the organizers hinted that there might be a tasty lunch for volunteers at the conclusion of the event.

BREAK - OVER



## National Preparedness Month

September is National Preparedness Month, and the Federal Emergency Management Agency (FEMA) encourages everyone to make disaster preparedness a priority.

“National Preparedness Month serves as a reminder that we all need to prepare for disasters and emergencies,” said Janet Odesho, FEMA Region V Administrator. “Make disaster readiness manageable by taking one step at a time— start by learning your specific risk, then gather supplies for an emergency



kit, and finally develop a family communications plan. By taking these small, but critical, steps, over time you can be prepared for

Preparedness Month *cont'd on page 2*

## ARES Activities

Weekly Net Monday 7 PM 146.535 mhz (s)

Breakfast Saturday, September 13th

Digital Monday, September 15th

### ARES Nets

MN ARES Phone Net	6:00PM Sunday	Freq: 3.860 mhz
ARRL MN Phone Net	12:00p, 5:30p CST Daily	Freq: 3.860 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 3.860 mhz	6:00pm
Wisconsin:	Daily 3.985 mhz	5:30pm
Iowa:	Daily 3.970 mhz	12:30/5:30pm

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

## Preparedness Month - cont'd from page 1

disasters.”

Severe weather and other emergencies can strike with little or no warning and can have disastrous impacts. Already this year, the Midwest has experienced several waves of destructive severe storms, including the severe flooding in parts of Minnesota. Additionally, other parts of the country are currently fighting flooding and other emergencies that threaten the infrastructure people depend on every day. Whether at home or on the go, everyone should learn the steps necessary to make preparedness part of their everyday life.

“As a nation we are seeing disasters increase in their size and complexity, and they are occurring with greater frequency,” said Odeshoo. “The impacts of these events are a reminder that everyone should be prepared for the hazards faced in their communities or even while traveling. Make preparedness a priority for your family today and help encourage a culture of preparedness in your community.”

BREAK - OVER



### Scott County ARES Contacts

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## Test Your NIMS Knowledge

This month we will continue our review of ICS-700a: National Incident Management System (NIMS) An Introduction. Check your recall of the course material with this question.

This structure is the physical location at which the coordination of information and resources to support incident management (on-scene operations) activities normally takes place.

- A. Incident Command Post
- B. Emergency Operations Center
- C. Joint Command Post
- D. Strategic Operations Center

Check next month's ARES Communicator for the solution

## August NIMS Knowledge Solution

The Joint Information System is:

- A. The framework for organizing, integrating, and coordinating the delivery of public information.

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*“It is incumbent on every generation to pay its own debts as it goes. A principle which if acted on would save one-half the wars of the world.”*

Thomas Jefferson

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## NBEMS Current Versions

The current version of the Fldigi manual is available at NBEMS Info page at [www.scottares.org](http://www.scottares.org). Look under the 'Help Sheets' heading.

Be sure to check to make sure you have the current software on your thumb drive.

Now is a good time to check to your digital software to make sure you are running the newest versions. You can find the most recent versions posted at both: [www.w1hkj.com/download.html](http://www.w1hkj.com/download.html) and <http://www.scottares.org/NBEMS.htm>

Here are the most recent releases as of June 12, 2014.

Software	Version
Fldigi	3.21.83
Flwrap	1.3.4
Flmsg	2.0.4
Flamp	2.1.02

The Monday evening training net is a great place to have your digital questions answered and problems solved! Join the Scott ARES group on 146.535 MHz simplex at 7:00pm on Monday evenings.



BREAK - OVER

## Got a Plan?

During your homeward commute on a Thursday in early September, a voice breaks into the chatter on the repeater. Clearly agitated, the voice alerts everyone to a breaking news item. Within the last fifteen minutes an explosion has taken place on the Bloomington Ferry Bridge in the southbound lane.

The southbound lane has been destroyed and the northbound lane heavily damaged. The explosion was filmed by a traffic reporter in a helicopter doing a live traffic report on the early news. Emergency responders have not yet reached the scene.

The reporter described the scene as up to twenty cars drove off

### National Preparedness Month



the destroyed lanes before traffic ground to a halt. It appears there are some crash victims floating and swimming in the river.

On a sunny Saturday afternoon in early September you are jolted as you hear reports of several explosions around the metro area. The sites include: the Renaissance Festival near Shakopee, Mystic Lake Casino, Southdale Shopping Center, and the Mall of America. The explosions have all occurred within the last thirty minutes. Reports are sketchy but indicate there were a significant number of people killed or badly injured.

You are aware of the possibility of severe weather and are keeping an eye to the sky and monitoring the Skywarn informal net on the repeater. Suddenly the weather net is activated. Funnel clouds have been reported by the public near Jordan. The sky darkens and you sense the strong outflow. Moving to a location with good visibility to the southwest you scan the clouds. Softball sized hail drives you into your vehicle as the windshield is destroyed by the bombardment. The net reports multiple funnels headed in your general direction. You take shelter and safely wait out the destruction. When you emerge you learn that the tornado's followed a path from southwestern

**Got a Plan** cont'd on page 4

## 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. How long does it take charged particles from coronal mass ejections to affect radio-wave propagation on the Earth?
  - A. 28 days
  - B. 14 days
  - C. 4 to 8 minutes
  - D. 20 to 40 hours
2. What usually happens to radio waves with frequencies below the Lowest Usable Frequency (LUF)?
  - A. They are bent back to the Earth
  - B. They pass through the ionosphere
  - C. They are completely absorbed by the ionosphere
  - D. They are bent and trapped in the ionosphere to circle the Earth
3. Which of the following ionospheric layers is closest to the surface of the Earth?
  - A. The D layer
  - B. The E layer
  - C. The F1 layer
  - D. The F2 layer

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



## August General Pool Answers

1. What does the A-index indicate?
  - A. The long term stability of the Earth's geomagnetic field
2. How are radio communications usually affected by the charged particles that reach the Earth from solar coronal holes?
  - A. HF communications are disturbed
3. What usually happens to radio waves with frequencies below the Maximum Usable Frequency (MUF) and above the Lowest Usable Frequency (LUF) when they are sent into the ionosphere?
  - A. They are bent back to the Earth

## Got a Plan? - cont'd from page 3

Prior Lake north east through Savage and crossed the Minnesota River near 35W. You can hear the sirens of emergency responders all around you.

Three scenarios could take place.



You are an emergency communications trained ARES member. What do you do? What is your plan? Hopefully you aren't among those running around crazily shouting, "The sky is falling! The sky is falling!"

When an emergency hits close to home or in the larger metro area, do you know what action to take to offer your communications skills to use for the benefit of your community?

You will be of maximum benefit if you are able to calmly implement your personal emergency communications plan. First, take care of your family. You aren't helpful as an emergency volunteer if you are worried about the safety of your own family.

Scott ARES members should always monitor the local simplex frequency for the most up to date information about Scott county activity as well as mutual aid efforts to help our ARES neighbors.

Depending on the scope of an event, you may want to monitor the HF frequencies used by MN ARES. This will bring the current info on events outside the local area. Oh, by the way, outside antennas would be a big advantage in any of these scenarios! (A little shameless promotion of H.R.4969. Have you written your Congressman?)

Now is the time to think about your personal communications plan. Do some research into frequencies, regularly scheduled nets, upgrades to your personal communications skills, and take inventory of your equipment and it's readiness.

Let's not get sucker punched on 9-11 ever again. Be prepared.

BREAK - OVER

## BCAR Circling

### Balloons Carrying Amateur Radio

Three plastic foil-envelope balloons carrying Amateur Radio payloads and launched from the UK by Leo Bodnar, M0XER, remain aloft and continue to circle the Earth. The oldest, identified as B-63, was released on July 8 and became the second of Bodnar's balloons to circumnavigate the globe. The first to do so, B-64, went up on July 12 and had completed one lap around the Northern Hemisphere by July 31.

Air currents have carried the balloon within 9 km of the North Pole and within 10 km of its launch site. The last balloon to make it around the Earth was B-66, which Bodnar released on July 15.

Each balloon carries a tiny 10 mW solar-powered transmitter that can alternate between APRS and Contestia 64/1000 digital mode on 434.500 MHz (USB). The Amateur Radio payload weighs just 11 grams.



As of this week, the B-64 balloon (M0XER-4 on APRS) was north of Moscow, Russia, at an elevation of more than 40,200 feet; the B-63 balloon (M0XER-3 on APRS) appeared to be located nearly 42,000 feet above South Korea, and the B-66 balloon (M0XER-6 on APRS) appeared to be nearly 44,000 feet above Ukraine.

Notes on the M0XER-3 (<http://aprs.fi/info/a/M0XER-3>) and M0XER-6 (<http://aprs.fi/info/a/M0XER-6>) APRS pages flag their reported trajectories with "Seriously bad path," however, and add, "This station appears to be flying at high altitude and using digipeaters, which causes serious congestion in the APRS network. The tracker should be configured to only use digipeaters when at low altitude." Check out the currently flying M0XER-4 APRS page to find the current location: <http://aprs.fi/info/a/M0XER-4>

The numeral following the "B" denotes the number of similar balloons Bodnar has launched (B-65 failed to deploy). The transmitter stores positions during its flight and transmits a log file that can recall 5 days of previous locations in the comments field of its APRS transmissions. If it has been out of radio contact, however, a straight line will appear on the APRS map.

BREAK - OVER

## Computing for Non-programmers

For tinkerers and people who love programming complicated projects, devices like the Raspberry Pi and Arduino are amazing, but for those without technical knowledge, they can be a terrifying proposition. A new device called Verve 2 aims to bring the functionality of these devices to the masses without the need for programming skills.

The crux of a lot of cool projects you see developed using Arduino is the device itself, along with some connected sensors. From there, someone with electronics and programming knowledge writes the code that tells the system what to do when the sensors detect something. The general idea for Verve 2 is the same, except it doesn't require the programming step.

Once the sensors are connected to the Verve unit, which is itself connected to a computer, the application allows users to translate data from the sensors to things like text messages, emails, keyboard strokes, IFTTT triggers, and more. The app allows users to set this up by simply moving sliders and tweaking menu inputs, which means anyone can get in on the fun.

The full package comes with 10 different sensors, so users can



keep track of things like force, touch, button presses, light, turning, motion, magnets, sound, and temperature. There's also a DIY sensor available for users who are a little more comfortable with electronics and programming.

With these sensors, for example, one could locate the motion sensor next to a place they don't want their kids to go, and they could set up the app to alert them if movement is detected in that area. That's just a small example, and with the amount of sensors this kit is promising to offer, it will come down to the creativity of the user.

inXus Interactive, the company behind Verve 2, is seeking funding on Kickstarter and it's already met its US\$10,000 goal. Backers interested in ordering a full kit can do so for a pledge of \$120. The team is also offering packages with fewer sensors starting at \$45.

Kickstarter provides more information and shows the device in use at this site: <https://www.kickstarter.com/projects/54060271/verve2-connect-your-world-to-your-computer-and-int>

BREAK - OVER



## Summits-on-the-Air

September 13-14

By: Elliott Pisor, K6EL

North America Summits on the Air (SOTA) Activity Weekend 2014 is a casual event in which summiting radio amateurs (called "activators") use tiny battery-powered radios to work home-based operators (called "chasers"). This year's event, September 13-14, is aimed at introducing SOTA to newcomers. There are no rules regarding power levels, modes, or bands.

SOTA operators have climbed mountains as high as 14,000 feet. They run low power, and they don't operate split, so operator courtesy is paramount.

The SOTAwatch2 website ([www.sotawatch.org/](http://www.sotawatch.org/)) offers information regarding what stations are on which mountains. Summits are numbered, and mousing over the number will reveal the name and point value for each summit.

Activity typically concentrates near 7.032, 7.185, 10.110, 14.061, 14.342, 18.095, 18.155, 21.061, 21.350, 24.905, 24.955, 28.061, 28.420, 146.52, and 446.00 MHz. Participants collect points toward SOTA certificates and trophies.



BREAK - OVER



## Recharge those Tires

There may soon be a new use for discarded tires ... besides turning them into mattresses for cows, that is. Researchers from the US Department of Energy's Oak Ridge National Laboratory have devised a method of harvesting the carbon black from them, and using it to make anodes for better-performing lithium-ion batteries.

The process was developed by a team led by Oak Ridge scientists Parans Paranthaman and Amit Naskar. It involves pretreating the tires and then using pyrolysis – the decomposition of organic materials by heat in the absence of oxygen – to recover pyrolytic carbon black material from the rubber. Carbon black is similar to the graphite commonly used in battery anodes, although unlike graphite, it's man-made.

When a lithium-ion battery with one of the carbon black anodes was tested in the lab, it was found to have a higher energy capacity than similar batteries with regular graphite anodes. This quality was attributed at least partly to the porous microstructure of the carbon black, which offers more surface area than that of graphite.



The Oak Ridge team is now working on a pilot project to scale up the process, with an eye towards ultimately licensing the technology to an industrial partner. Once the technique is commercialized, it is estimated that batteries made using it will actually be cheaper than conventional lithium-ions ... plus, of course, the tires will be diverted from sitting in a landfill.

A paper on the research was recently published in the journal [RSC Advances](#).

BREAK - OVER

## SUMMER ACTIVITY

## August Crossword Solution

### Across

1. FERTILIZING—Promoting lush, green, growth.
6. CYCLING—Seeing the sites from two wheels.
7. GOLF—Trying to hit the ball straight.
8. READING—Deciphering the printed page.
9. BOATING—Planing over the rippled surface.
11. CROQUET—Hitting the ball through the arches.
13. BASEBALL—Played by the 'boys of summer'
14. GARDENING—Irritating mother nature to encourage growth.
15. SWIMMING—Frolicking in one of the 10,000.

### Down

2. TANNING—Planned ultraviolet radiation exposure
3. COLDDRINK—Most desired after activity in the hot sun.
4. FISHING—This is always good however the catching may be slow.
5. CANOEING—Gliding through the no-wake zone.
6. COLDBEER—Desired by adults after activity in the hot sun
10. MOWING—How to maintain that well manicured lawn.
12. WALKING—A neighborhood tour, on foot.



## Public Service Events



Grab that HT and have some fun!

*(Editor's Note: Contact the individual listed with each event for more info or to volunteer.)*

**Sept 20, Saturday - Cystic Fibrosis Foundation Cycle for Life** Need 6+ operators to provide communications for a 30/15 mile dual route bicycle event held in southern Scott County. Volunteers contact [N0BHC@scottares.org](mailto:N0BHC@scottares.org) to volunteer or for more info.

**October 11<sup>th</sup>, Saturday - Belle Plaine, MN - Scenic Half Marathon** - Need 20+ Operators for Half Marathon...same course as in years past. 0700 - 1100 AM. The MN-ARES Portable Repeater is planned to be used again, unless city approves us on the town water tower by then. Volunteer contact info: [KC0QNA@yahoo.com](mailto:KC0QNA@yahoo.com) or cell phone 612-578-7561.

**December 6<sup>th</sup>, Saturday - Arlington-Aridazzle Parade** - Need 20+ Operators for 5K Run at 9 AM, Closing & Maintaining safety on Main street from 11 am til 7 pm & Parade at 5:30 PM. Operations will be on Green Isle UHF Repeater. Volunteer contact info: [KC0QNA@yahoo.com](mailto:KC0QNA@yahoo.com) or cell phone 612-578-7561.

BREAK - OVER

## United States Citizenship!

Have you ever thought about your United States citizenship? Probably not since that Civics course a long time ago! Foreigners who want to become a United States Citizen must pass a short exam that covers some key concepts important to America. Test your knowledge on the citizenship test.

Check next month for the answer to this month's question.

How many amendments does the Constitution have?

- A ten (10)
- B twenty-three (23)
- C twenty-one (21)
- D twenty-seven (27)
- E eighteen (18)

## August Citizenship Exam Answer

What is **one** right or freedom from the First Amendment?

- C. speech



**ARES Breakfast**  
Saturday September 13th  
7:30AM  
Perkins Restaurant  
Savage, MN

## NECOS Schedule September 2014

The first Monday or the month the net is held on the WB0RMK repeater, Carver. You will find WB0RMK here: 147.165/765 PL 107.2

- Sep 1** KC0YHH Tony
- Sep 8** KB0FH Bob
- Sep 15** N0BHC Bob
- Sep 22** KD0UWZ Chad
- Sep 29** KC0YHH Tony
- Oct 6** KB0FH Bob
- Oct 13** N0BHC Bob
- Oct 20** KD0UWZ Chad
- Oct 27** KC0YHH Tony