



# ARES COMMUNICATOR

## Information for Scott County Amateurs



July, 2014

Accurate, Reliable Emergency Communications for our Community

Volume 14, Number 7

### Field Day 2014

#### Emergency Communications in the Park

Field Day 2014 activity by Scott ARES members took place at the Trost Park in Savage. Operating from under the roof of the picnic shelter provided protection from sun and, unfortunately torrential downpours!

Mother Nature always seems to stick her nose into the annual Field Day exercise just to make the contest more exciting. This year was no exception. While some ARES members combed the bands for the next contact, other SKYWARN spotters watched the clouds build in from the southwest. Nearby lightning caused the operation to shut down for several times but no severe weather was actually observed, outside of brief drenches from thunderstorms.

The lightning made for noisy conditions and difficult contacts on the high frequency bands.

In addition to voice contacts, the group logged contacts using CW and several digital modes during the six hour operation on Saturday.

The activity included a demonstration of amateur slow scan television (SSTV) by Chad, KD0UWZ. The demo involved using a Raspberry Pi micro-computer, camera module, and dual-band Handi-talkie. The image was captured by the camera module and then edited for transmission by the Raspberry Pi. The image was then converted to slow-scan TV format by the computer and the tones sent to the HT for transmission. The SSTV signal was received by another amateur, converted to computer-friendly images and returned to the field day site via email. This is not your grandpa's amateur radio anymore!

The main antenna for HF operation was a multi-band dipole erected within the confines of the hockey rink. Additional antennas included an off-center fed dipole and a delta loop and random wire. There was plenty of experimentation and learning during the day's activity.

**Field Day** *cont'd on page 3*

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!

### Antenna Legislation

#### Extend PRB-1 to Restrictive Covenants

ARRL Letter June 26, 2014

A bill with bipartisan support has been introduced in the US House of Representatives that calls on the FCC to apply the "reasonable accommodation" three-part test of the PRB-1 federal pre-emption policy to private land-use restrictions. HR.4969, the "Amateur Radio Parity Act of 2014" was introduced on June 25 at the request of the ARRL, which worked with House staffers to draft the proposed legislation. The bill's sponsor is Rep Adam Kinzinger (R-IL). It has initial co-sponsorship from Rep Joe Courtney (D-CT). If the measure passes the 113th Congress, it would require the FCC, within 120 days of the Bill's passage, to amend the Part 97 Amateur Service rules to apply PRB-1 coverage to include homeowners' association regulations and deed restrictions, often referred to as "covenants, conditions, and restrictions" (CC&Rs). Presently, PRB-1 only applies to state and local zoning laws and ordinances.

"There is a strong federal interest in the effective performance of Amateur Radio stations established at the residences of licensees," the bill states. "Such stations have been shown to be frequently and increasingly precluded by unreasonable private land-use restrictions, including restrictive covenants."

**Antenna Legislation** *cont'd on page 2*

### ARES Activities

**Weekly Net Monday 7 PM 146.535 mhz (s)**

**Breakfast Saturday, August 9th**

**Digital Monday, July 14th**

#### 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

## Antenna Legislation - cont'd from page 1

The 11-page PRB-1 FCC Memorandum Opinion and Order is codified at § 97.15(b) in the FCC Amateur Service rules, giving the regulation the same effect as a federal statute. In short, PRB-1 states that local governments cannot preclude Amateur Radio communications; they must “reasonably accommodate” amateur operations, and the state and local regulations must be the minimum practicable regulation to accomplish a legitimate governmental interest. Subject to those guidelines, municipalities may still establish regulations with respect to height, safety, and aesthetic concerns.

For 28 years, FCC regulations have “prohibited the application to Amateur Radio stations of state and local regulations that preclude or fail to reasonably accommodate Amateur Service communications,” the bill points out, “or that do not constitute the minimum practicable regulation to accomplish a legitimate state or local purpose.” Since PRB-1 was enacted, the FCC has said several times that it would prefer to have some guidance from Congress before extending the policy to private land-use regulations.

HR.4969 has been referred to the House Energy and Commerce Committee. Rep Greg Walden, W7EQI (R-OR), chairs that panel’s Communications and Technology Subcommittee, which will consider the measure.

ARRL Hudson Division Director Mike Lisenco, N2YBB, is a principal advocate for the current legislative initiative to gain PRB-1 recognition for CC&Rs. Lisenco said the most urgent task now is to get additional co-sponsors to sign onto HR.4969.

BREAK - OVER

## 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.

HSPD-5 required the Secretary of Homeland Security to establish a mechanism for ensuring the ongoing management and maintenance of NIMS. The Secretary established the National Integration Center (NIC) to perform all of the following functions EXCEPT:

- A. Inventorying and tracking all national resources and assets available for deployment in incidents managed using NIMS.
- B. Promoting compatibility between national-level standards for NIMS and those developed by other public, private, and professional groups.
- C. Facilitating the establishment and maintenance of a documentation and database system related to qualification, certification, and credentialing of emergency management/response personnel and organizations.
- D. Developing assessment criteria for the various components of NIMS, as well as compliance requirements and timelines.

Check next month's ARES Communicator for the solution



## 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

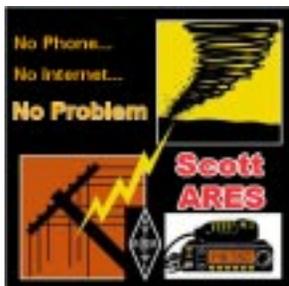
The Monday evening training net is a great place to have your digi questions answered and problems solved! Join the Scott ARES group on 146.535 MHz simplex at 7:00pm on Monday evenings.



BREAK - OVER

### Scott County ARES Contacts

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N0BHC@arrl.net



## Field Day - cont'd from page 1

In true emergency communications mode, the operation was powered by standby generation, not commercial power. The 'Field Day Power & Light Co.' performed flawlessly.

Visitors were welcome at the site. There were a about a dozen visitors that included several local hams and residents who took advantage of the opportunity to becomes acquainted with Scott ARES. Handout material covering ARES emergency communications, amateur radio activity, and How to become a Ham was available. People are directed to the Scott ARES website for information on becoming a ham. Scott ARES members are available to provide mentoring as needed to help people pass the license exam. Visit the website at [www.scottARES.org](http://www.scottARES.org) for more information.



The main antenna for Field Day 2014 was a multiband wire dipole. The antenna was set up in the hockey rink to minimize walking hazards for visitors. John, WA0DGW, (left) mans the center mast while Larry, K0LEJ, (foreground) attaches one leg to the fencing. A visitor monitors the action from a safe distance in the background. (KC0YHH photo)



Eyes to the sky! It wouldn't be a Field Day Emergency Exercise without some severe weather interruptions! Ominous clouds and lightning approached the Trost Park site from the southwest several times and forced operations to halt briefly. (K0LEJ photo)



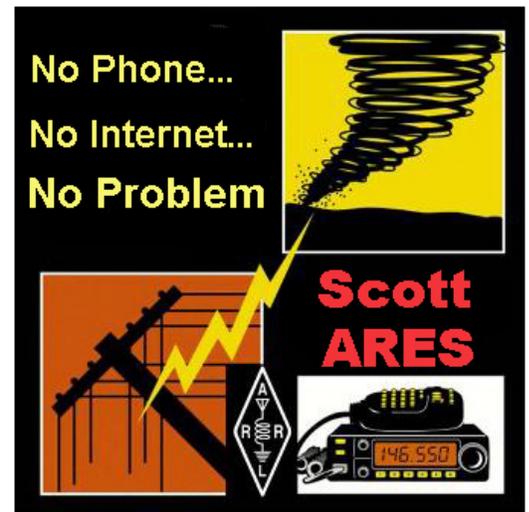
Another new one! Working and logging a new contact is John, WA0DGW, during the Field Day exercise. Contacts were made using several modes including voice, Morse code, and several different digital options. (K0LEJ photo)



Smile! You're on PiTV  
Raspberry Pi TV was demonstrated as a digital mode option by Chad, KD0UWZ. Slow-scan images were captured by the Pi camera module and processed by the Raspberry Pi computer (mounted on tripod). The images were then transmitted using amateur radio slow scan TV (SSTV) to an off-site location using a VHF handie talkie. This simple setup could provide disaster managers with actual on-site images during an emergency response. (K0LEJ photo)



Lights! Action! Contacts!  
The 2014 Scott ARES Field Day operation was powered by the Field Day Power & Light Co. using emergency back-up power. Scott ARES members are able to respond when conventional power and phone systems are not available. (W0NFE photo)



Original Digital  
Chad, KD0UWZ, right, makes a contact using the original digital mode (Morse code) while Bob, KB0FH, left logs the contacts to manage the contact score-keeping. Field Day contacts covered four high frequency bands and several modes. (K0LEJ photo)



Question time!  
Tony, KC0YHH, left, searches the band for a new station to contact while John, WA0DGW, right, answers questions from Dave, a visitor to the Field Day operation. (K0LEJ photo)



**ARRL** The national association for  
**Amateur Radio**  
**CENTENNIAL**  
Advancing the Art and Science of Radio—Since 1914



Several visitors oversee the action as Chad, KD0UWZ (left), makes contacts and Bob, KB0FH (back to camera), handles questions during Field Day operations. (K0LEJ photo)

# PATRIOTIC QUOTES

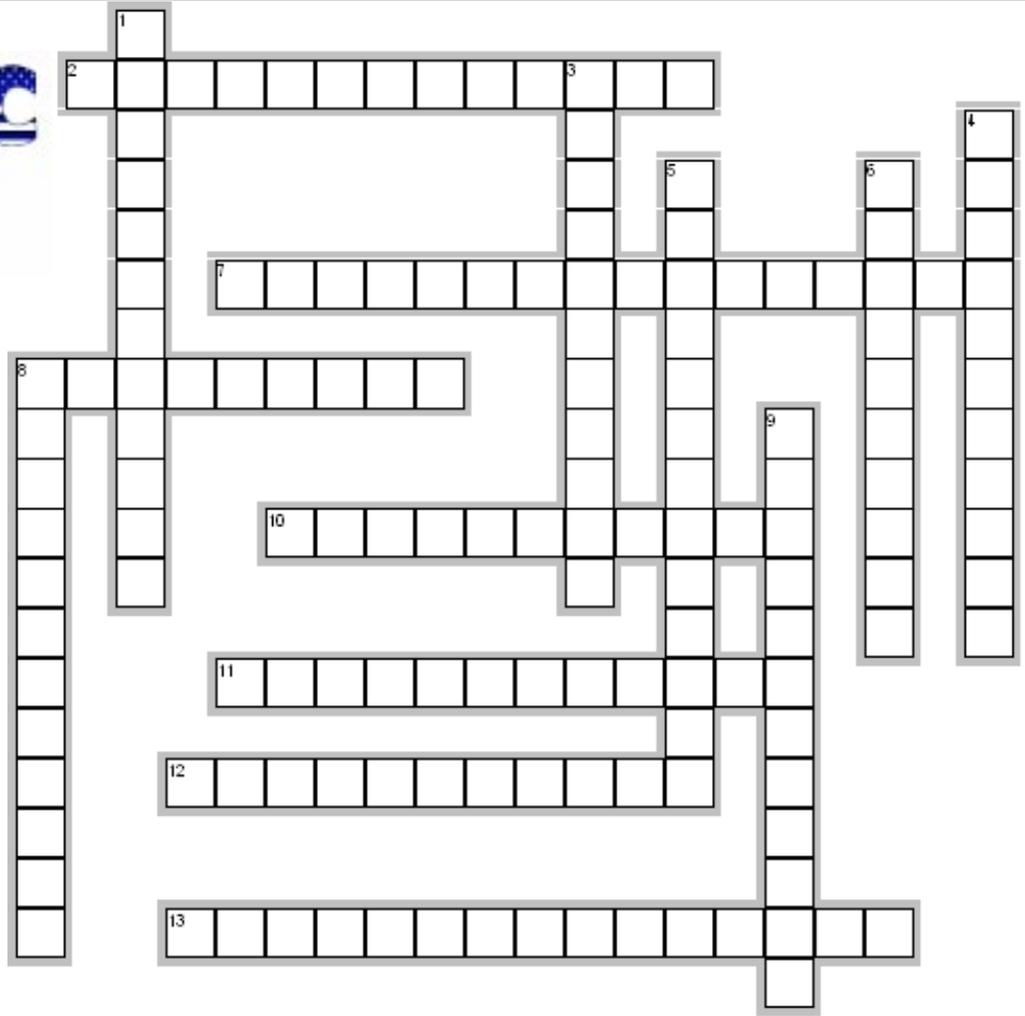
### Across

- 2. "The contest for ages has been to rescue liberty from the grasp of executive power."
- 7. "Associate yourself with men of good quality if you esteem your own reputation for 'tis better to be alone than in bad company."
- 8. "Fear is the foundation of most governments."
- 10. "A great empire, like a great cake, is most easily diminished at the edges."
- 11. "Don't fire until you see the whites of their eyes! Then fire low!"
- 12. "The public cannot be too curious concerning the characters of public men."
- 13. "All tyranny needs to gain a foothold is for people of good conscience to remain silent."

### Down

- 1. "I know not what course others may take; but as for me, give me liberty or give me death."
- 3. "Lead, follow, or get out of the way."
- 4. "There! His Majesty can now read my name without glasses. And he can double the reward on my head!"
- 5. "I wish to have no connection with any ship that does not sail fast; for I intend to go in harm's way."

- 6. "I only regret that I have but one life to lose for my country."
- 8. "The truth is that all men having power ought to be mistrusted."
- 9. "Patriotism is as much a virtue as justice, and is as necessary for the support of societies as natural affection is for the support of families."



*"My reading of history convinces me that most bad government results from too much government."*  
Thomas Jefferson

## BAOFENG to Pofung

### Amateur Radio Newsline

Chinese radio manufacturer BAOFENG is rebranding its products under the "Pofung" label in international markets. The company said BAOFENG — a literal Pinyin translation of the company's Chinese character name — "may be difficult for a hobbyist across the ocean to pronounce."

The company said the new name, Pofung, is easier to pronounce and more customer-friendly, while maintaining the brand's phonetic symbolism. Products for the domestic market in China will retain their current brand name and identity, and the company's web domain, [www.baofengradio.com](http://www.baofengradio.com), will remain unchanged.

## June NIMS Knowledge Solution

Select the NIMS term that is defined as "the architecture to support coordination for incident prioritization, critical resource allocation, communications systems integration, and information coordination."

- A. Multiagency Coordination System

## 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.

When was the US Constitution written?

- A 1776
- B 1789
- C 1812
- D 1787
- E 1865

## June Citizenship Exam Answer

What is **one** promise you make when you become a United States citizen?

- B. give up loyalty to other countries

## Raspberry Pi B+

The Raspberry Pi was designed to put an affordable computer into the hands of young programers. Since then, it has gone on to be used in all kinds of interesting projects, and has even found its place in the home of casual users as a media center. Now, the team is launching a new model called the Raspberry Pi Model B+, which brings some key improvements to the hardware while keeping the same US\$35 price tag.

A key thing to point out is that this isn't a Raspberry Pi 2. Instead, it's more of an incremental update that makes some improvements without too many huge changes. While the original Model B had two USB 2.0 ports, the new one has four, which allows further expandability with devices like mice, keyboards, Wi-Fi adapters and so on. It also has a larger General-purpose input/output (GPIO) header featuring 40 pins, compared to the 26 on the original. This allows the Pi to be used more creatively with other hardware.

The aforementioned changes are the bigger ones, but there are some smaller tweaks that also improve the functionality of the Pi. For example, a new micro SD socket has been added, making it easier to pull it in and out. Power consumption is reduced, and audio quality has also been improved thanks to a low-noise power supply.

While the new model is available right now, the original Model B will remain in production for as long there is demand. This is important for industrial customers who need to use the original model. Users interested in buying a Raspberry Pi Model B+ can do so from the same retailers where the original Model B was sold.

The video link introduces the Raspberry Pi Model B+ <http://vimeo.com/100672310>

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. What effect do high sunspot numbers have on radio communications?
  - A. High-frequency radio signals become weak and distorted
  - B. Frequencies above 300 MHz become usable for long-distance communication
  - C. Long-distance communication in the upper HF and lower VHF range is enhanced
  - D. Microwave communications become unstable
2. What does the K-index indicate?
  - A. The relative position of sunspots on the surface of the Sun
  - B. The short term stability of the Earth's magnetic field
  - C. The stability of the Sun's magnetic field
  - D. The solar radio flux at Boulder, Colorado
3. What is a reliable way to determine if the Maximum Usable Frequency (MUF) is high enough to support skip propagation between your station and a distant location on frequencies between 14 and 30 MHz?
  - A. Listen for signals from an international beacon
  - B. Send a series of dots on the band and listen for echoes from your signal
  - C. Check the strength of TV signals from Western Europe
  - D. Check the strength of signals in the MF AM broadcast band

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

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*"To compel a man to subsidize with his taxes the propagation of ideas which he disbelieves and abhors is sinful and tyrannical."*

Thomas Jefferson

## June General Pool Answers

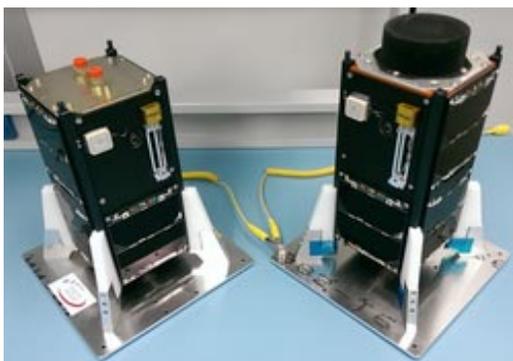
1. Which of the following effects can a geomagnetic storm have on radio-wave propagation?
  - B. Degraded high-latitude HF propagation
2. Approximately how long is the typical sunspot cycle?
  - D. 11 years
3. What is a possible benefit to radio communications resulting from periods of high geomagnetic activity?
  - A. Aurora that can reflect VHF signals

## New Ham Sats Launched

A Dnepr launch vehicle carried several Amateur Radio payloads aloft from Russia on June 19. The 37 spacecraft for research and commercial applications, about one-third of them carrying Amateur Radio packages, marked a new record for the most spacecraft launched by a single rocket.

Among the Amateur Radio payloads now in orbit is FUNcube-3, a transponder-only payload on the QB50 precursor CubeSat, QB50p1. FUNcube-3 carries an inverting 400 mW SSB/CW transponder, with an uplink passband of 435.035-435.065 MHz (LSB) and a downlink passband of 145.935-145.965 MHz (USB).

The otherwise nearly identical QB50p2 package carries an Amateur Radio 435/145 MHz FM voice transponder as well as packet on 145.880 MHz, 1200bps BPSK and 145.840 MHz, 9600 bps FSK.



The QB50p1 and QB50p2 satellites.

The QB50 satellites will become available to radio amateurs after 6 months of testing. The QB50 program plans to launch a constellation of 50 small science research satellites.

TabletSat-Aurora, built in Russia, carries a experimental D-STAR parrot (store-and-forward) repeater running 0.8 W (GMSK) on 437.050 MHz ( $\pm 10$  kHz). It can store a voice message of up to 8 seconds. Two other transceivers on the satellite operate on 435.550 MHz and 436.100 MHz. Their power can be varied by ground-station command from between 0.8 and 2.0 W. They will be used for command and control and transmit GMSK telemetry data.

Unofficial reports indicate that the D-STAR repeater could become operational in early July and that when the D-STAR repeater is active telemetry will be turned off.

In the hours immediately following the launch, signals were reported from FUNcube-3, POPSAT, QB50p1, QB50p2, UniSat-6, BugSat-1 — the first satellite to be deployed after launch — NanosatC-BR1, Duchifat-1, TabletSat-Aurora, and DTUat-2. BugSat-1 contains an Amateur Radio digipeater, which will be activated after the satellite's primary mission has been completed.

UniSat-6, which transmits on 437.425 MHz (9600 bps GFSK at 2 W) with the call sign II0US, carried Tigrisat, Lemur 1, ANTELSat, and AeroCube 6. ANTELSat is the first Uruguayan satellite. It carries a telemetry downlink and a command uplink (437.575 MHz 1200 bps AFSK) with a 2403.000 MHz (1 Mbit GFSK/MSK) downlink for payload data, and a 437.280 MHz CW beacon.

## Mille Lacs Repeater Upgrade

The owner of the MAGIC Repeaters in St. Paul and Foreston, gives all hams the heads-up on a change that will be happening in Mille Lacs County. The UHF ( 443.675 Pl 114.8 ) and VHF ( 146.745 Pl 107.2 ) repeaters are being relocated to the water tower in Foreston, MN. The repeater owner is working with the city of Foreston at the present time and has the tentative approval to place a weather proof cabinet at the base, and the antennas on the top of the water tower.

The repeater owner is also working with the Mille Lacs county to use the repeater for the county emergency services and skywarn activity.

After the final approval is secured, the relocation work will begin. Hopefully the relocation will be complete by the end of August of 2014. The repeaters will have dual backup power from a generator and battery.

The UHF and VHF repeaters will have 60 watts continues to thir antennas. This power level will be put a good foot print in the area, and cover the whole county.

There will be a second receiver in Onamia coming around spring of 2015 in the north end to help cover around the Mille Lacs lake area.

These repeaters are not new to the AREA but there will be newer equipment on them and should do a lot better job. If anyone has questions please feel free to e-mail [n0goi@usfamily.net](mailto:n0goi@usfamily.net). More information available at the webpage: <http://www.magicrepeater.net/>

BREAK - OVER

## GA14

### Scotland DX

GA14, SCOTLAND (Special Event). To celebrate the Commonwealth Games this summer, the Stirling & District Amateur Radio Society (GM6NX) are hosting a special event station, GA14CG, at their club premises, approximately 25 miles north-east of the city of Glasgow, between July 21st and August 3rd.

The station will be run by members of the Stirling & DARS along with other clubs in the surrounding area. Visitors are most welcome to the station and visiting amateurs can operate the station, permitted they bring a copy of their license. There will be 3 HF stations and 2 VHF stations operational. Activity will be on 160-2 meters using CW, SSB and Data. For more information about the station, visit: <http://www.ga14cg.com>

You can also follow them on Twitter (@GA14CG) and "like" them on FaceBook.

QSL via LoTW (Logbook of the World) and e-QSL. For direct and Bureau QSLs are via ClubLog's OQRS only. They prefer to QSL via LoTW and e-QSL to save money, time and to protect the environment.

Uploads to ClubLog are instantaneous. Uploads to LoTW and e-QSL are made at the end of each day. If you send your card via the bureau or direct, you WILL NOT receive a reply!

BREAK - OVER

## 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.)*

**July 19<sup>th</sup>, Saturday - Belle Plaine BBQ Days - Parade & Staging** 10 am til 2 pm. Looking for 20+ Operators. Volunteer contact info: [KC0QNA@yahoo.com](mailto:KC0QNA@yahoo.com) or cell phone 612-578-7561.

**July 20<sup>th</sup>, Saturday - Annandale - Heart of the Lakes Triathlon** - Need 15 Operators or so in the City of Annandale, MN in Wright County. If you can help, please e-mail: Lee at [WB0TRA@Gmail.com](mailto:WB0TRA@Gmail.com) his cell phone is 320-223-1354.

**July 27, Sunday Waseca Triathlon** The triathlon is run out of the park/fair grounds in Waseca and the bike route was west and north of town. To volunteer contact: Jon WB0ZFH, activity coordinator at the Viking Amateur Radio Club in Waseca. Jon's email address is: [wb0zfh@hotmail.com](mailto:wb0zfh@hotmail.com)

**August 9<sup>th</sup>, Saturday - Gaylord, MN - Eggstravaganza** - Need 20+ Operators for: 5K Run at 9 am, Parade from 12 - 3 PM, then 10 radio operators for Fireworks Safety Patrol from 8 pm til 11 pm. Volunteer contact info: [KC0QNA@yahoo.com](mailto:KC0QNA@yahoo.com) or cell phone 612-578-7561.

**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 of 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-Arlidazzle 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.

## Mosquito Myths

Purple martins are voracious mosquito predators. This is another scientific observation taken out of context. A researcher initially estimated that a purple martin would need to eat its body weight in mosquitoes, about 14,000 insects, every day in order to survive. However, like bats, purple martins actually prefer other prey, including dragonflies, which *are* mosquito predators. Mosquitoes make up less than 3 percent of the birds' diets.



Bug zappers are a good way to reduce mosquitoes. While zappers do kill a large number of insects, studies have found that most of them are moths and beetles, and less than 7 percents are mosquitoes. In fact, yards with zappers typically have no fewer mosquitoes than yards without zappers.

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*"When we get piled upon one another in large cities, as in Europe, we shall become as corrupt as Europe."*

Thomas Jefferson

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### ARES Breakfast

Saturday August 9th  
7:30AM  
Perkins Restaurant  
Savage, MN

## NECOS Schedule July 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](http://147.165/765 PL 107.2)

Jul 14	KB0FH Bob
Jul 21	N0BHC Bob
Jul 28	KD0UWZ Chad
Aug 4	KC0YHH Tony
Aug 11	KB0FH Bob
Aug 18	N0BHC Bob
Aug 26	KD0UWZ Chad
Sep 1	KC0YHH Tony