



ARES COMMUNICATOR

Information for Scott County Amateurs



March, 2015

Accurate, Reliable Emergency Communications for our Community

Volume 15, Number 3

HF Band Plan Proposals

ARRL Bulletin

The ARRL is asking members to comment by April 19 on possible changes to the League's HF Band Plans suggested by the HF Band Planning Committee. The survey is part of the committee's efforts to tweak the band plans for the RTTY/data/CW portions of 80 through 10 meters - excepting 60 meters. The committee developed its suggested revisions to the voluntary band plans after reviewing some 400 member comments in response to a March 2014 solicitation that sought suggestions for using the spectrum more efficiently so that data modes may coexist compatibly.



"The committee concluded that most of the concerns voiced by members could be addressed by modest adjustments to the existing band plans, and mainly by confining data modes with bandwidths greater than 500 Hz to the FCC-designated segments for automatically controlled digital stations (ACDS) and to parts of the RTTY/data subbands above those segments," ARRL CEO David Sumner, K1ZZ said. His article detailing the committee's suggestions will appear in the April edition of QST.

The proposed changes differentiate among ACDS, narrow RTTY/data modes having a bandwidth no greater than 500 Hz, and wider data modes having a bandwidth up to 2700 Hz.

You can view details of the proposal here: <http://www.arrl.org/bandplan>

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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!

SKYWARN Training Update

The information for the April 18th Skywarn Spotter training session slated for Burnsville has been updated. This is the current information as known today:

April 18, 2015
 Saturday 9 AM -1 PM
 Open Circle Church
 2400 Highland Dr
 Burnsville, MN
 Pre-register here: www.eventbrite.com/e/twin-cities-repeater-club-burnsville-class-tickets-15906173794
 Walk ins welcome.

You can find the complete Metro Skywarn training schedule here: <http://metroskywarn.org/en/class-schedule>

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ARES Activities

Weekly Net Monday 7 PM 146.535 mhz (s)

Breakfast Saturday, March 14th

Digital Monday, March 16th

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

February Citizenship Exam Answer

What are the **two** parts of the U.S. Congress?

A the Senate and House of Representatives

Congratulations on your citizenship study! Now, file those taxes before the deadline or you have the opportunity to meet the Dept. of the Treasury!

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MN Repeater Council Meeting

Saturday April 11th

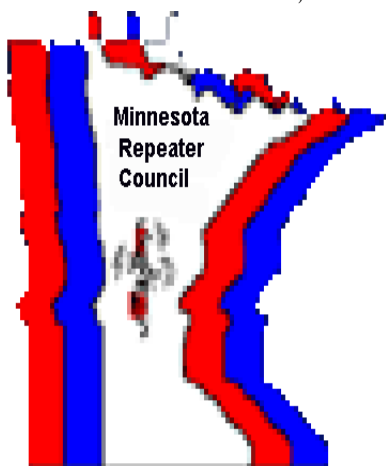
Have you ever wondered how the great system of repeaters is coordinated? The MN Repeater Council handles that job.

The Spring meeting of the Minnesota Repeater Council will be held on Saturday April 11 at the American Red Cross, 105 Homestead Road, Mankato MN 56001

The Spring Minnesota Repeater Council Newsletter has been posted to the MRC website:

www.mnrepeaters.org/Spring-2015.pdf

Check out the hard work that goes into maintaining the system we so often take for granted.



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Midwinter Madness Hamfest

Saturday March 28th

The 34th Annual Midwinter Madness Hobby Electronics Show will take place on Saturday, March 28th, from 8:am to 1:00 pm at the Buffalo Civic Center in Buffalo, MN.

This is a nice drive out Hwy 55 West from the Twin Cities with free on-site parking and a short walk to the building entrance.

Admission is still only \$8 and children under 15 are free. Talk-in on the KØLTC Repeater 147.000 +600 - Call for KØLTC for information.

Door prize drawings will be held at 12:30 PM. The prize line-up includes:

Grand Prize: \$300 Radio City Gift Certificate

First Prize: \$125 Radio City Gift Certificate

Second Prize: \$75 Radio City Gift Certificate

Additional Prizes: Four ARRL gift certificates for publications – 2 - \$50 and 2 - \$25

Amateur Radio VE Testing will be available in conjunction with the hamfest. Advance registration encouraged! The exams start at 7:30 am. The ARRL VE exam fee is \$15. To register for an exam or request exam information email: mwmve@k0ltc.org

Be sure to bring the following if you are planning on taking an exam:

- Government issued photo ID (i.e.: Drivers License; School ID if a minor)
- Amateur Radio License original AND photocopy (if currently licensed)
- Know your Social Security Number (if currently NOT licensed)
- Pen (for paperwork) and Pencil (for answers)
- Calculator without saved formulas (we have loaner basic calculators)
- Session fee \$15.00 check or cash (prefer check made out to: ARRL/VEC)

New this year is the opportunity to recycle your excess electronics items. You can drop off your excess electronics for FREE recycling with Tech Dump! Hours 9:00 AM to 1:00 PM. There will be a disposal charge for items containing a CRT. Visit <http://techdump.org/hamfest> for more information.

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Amateur Radio License Exam

Now that you have done the work to study for your upgrade, here is where to find a convenient exam session near you. There is a VE exam search engine at: http://www.arrl.org/exam_sessions/search

Walk-ins allowed at most sessions however it is always best to check the details at the specific session you are planning to attend.

Below is a list of scheduled sessions close to Scott County.
Good Luck!

Mar 21 2015 Saturday, 9:00 AM

Cottage Grove, MN
Contact: (651) 769-0358
Zion Luthern church
8500 Hillside Trl S
Cottage Grove MN 55016-3273
Walk-ins allowed.

Mar 23 2015 Monday, 6:00 PM

Chanhassen MN
Contact: Dale A. Blomgren
(952) 402-2155 kd0b@arrl.net
Carver County Library
7711 Kerber Blvd
Pre-reg requested.

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“Paperless” License in Effect

Starting February 17th the FCC no longer routinely issues paper license documents to Amateur Radio applicants and licensees. The Commission maintains that the official Amateur Radio license authorization is the electronic record that exists in its Universal Licensing System (ULS).

In mid-December, the FCC adopted final procedures to provide access to official electronic authorizations, as it had proposed in WT Docket 14-161 as part of its “process reform” initiatives. Under the new procedures, licensees will access their current official authorization (“Active” status only) via the ULS License Manager. The FCC will continue to provide paper license documents to all licensees who notify the Commission that they prefer to receive one. Licensees will also be able to print out an official authorization - as well as an unofficial “reference copy” - from the ULS License Manager.

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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.

Strap on your thinking cap and see what you can recall. Here is this month’s sample:

1. What is the power limit for beacon stations?
A. 10 watts PEP output
B. 20 watts PEP output
C. 100 watts PEP output
D. 200 watts PEP output
2. What is the maximum bandwidth permitted by FCC rules for Amateur Radio stations when transmitting on USB frequencies in the 60 meter band?
A. 2.8 kHz
B. 5.6 kHz
C. 1.8 kHz
D. 3 kHz
3. What is the maximum transmitting power an amateur station may use on 1825 kHz?
A. 200 watts PEP output
B. 1000 watts PEP output
C. 1200 watts PEP output
D. 1500 watts PEP output

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

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February General Pool Answers

1. What does the term “critical angle” mean as used in radio wave propagation?
D. The highest takeoff angle that will return a radio wave to the Earth under specific ionospheric conditions
2. What is a characteristic of HF scatter signals?
B. They have a wavering sound
3. What is normally meant by operating a transceiver in “split” mode?
C. The transceiver is set to different transmit and receive frequencies

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2015 MNVOAD Conference

“LEAD – Leading to Engage Action in Disaster!”

This year’s MNVOAD conference will be held on Saturday, March 28, 2015 at Hennepin Technical College in Eden Prairie. The college is located at Hennepin Technical College, 13100 Collegeview Dr., Eden Prairie, MN.

This will be the 12th annual gathering of members from Minnesota voluntary organizations, private sector partners and emergency management representatives, to learn and to network.

The conference will include leadership and disaster-related trainings, and valuable collaboration and networking opportunities for over 200 participants.

This is an excellent opportunity for emergency management volunteers and professionals to come together from across the state to share best practices, new ideas and develop solutions for building more resilient communities.

You can register for the conference on line at: <http://www.mnvoad.org/2015-mnvoad-conference/>



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NBEMS Current Versions

The current version of the Fldigi manual is available at NBEMS Info page at 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 and <http://www.scottares.org/NBEMS.htm>

Here are the most recent releases as of February 22, 2014.

Software	Version
Fldigi	3.22.05
Flwrap	1.3.4
Flmsg	2.0.68
Flamp	2.2.0

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.



Test Your NIMS Knowledge

This month we will begin our review of ICS-800: National Response Framework. The purpose of the National Response Framework is to ensure that all response partners across the Nation understand domestic incident response roles, responsibilities, and relationships in order to respond more effectively to any type of incident. The Framework focuses on response and short-term recovery instead of all of the phases of incident management.

Check your recall of the course material with this question.

If an incident grows beyond the capability of a local jurisdiction, then:

- A. The National Guard is activated to assume command of the incident scene and manage response operations.
- B. The State activates its emergency plan, provides needed resources, and requests assistance from other States using existing mutual aid agreements.
- C. The local jurisdiction applies for Federal assistance under the Stafford Act and other Federal authorities.
- D. The Federal Government activates the National Response Framework to prepare to respond as needed.

Check next month's ARES Communicator for the solution

February NIMS Knowledge Solution

Who is the principal Federal official for domestic incident management?

- D. Secretary of Homeland Security

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National Potato Chip Day

March 14th

WOW! Just in time for March Madness! It just wouldn't be a final round without some chips and dip.

Potato Chips are America's #1 snack food. But, its not just a snack food. Its the potato of choice for many lunchtime and dinner meals. Regular (or plain) potato chips are by far the most popular. Other popular flavors are barbecue, sour cream & onion, oil & vinegar, and ranch.

Potato chips were first made by Chef George Crum in Saratoga Springs, NY on August 24, 1853. Chef George was trying to satisfy a cranky customer when he sliced some potatoes paper thin, fried the slices and served them seasoned with salt. To the Chef's surprise the customer loved his creation! Americans have been in love with them ever since.

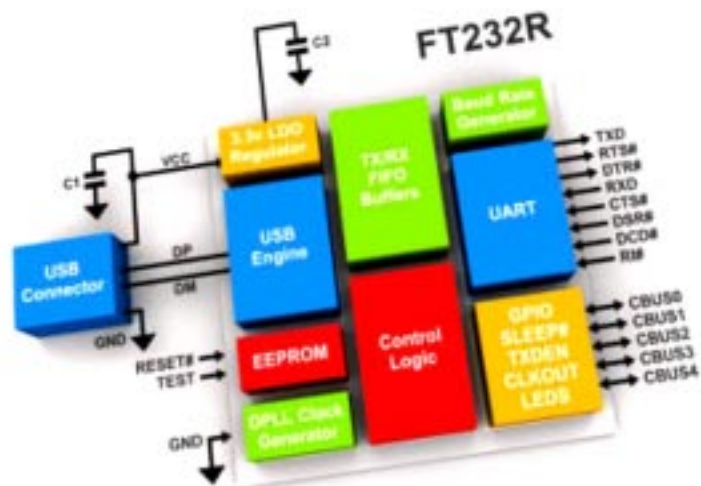


FTDI chips

When was the last time you used one of these devices?

- Smart Card,
- MP3 Player,
- FLASH Card Reader,
- TV Set Top Box,
- Digital Camera,
- Hardware Modem,
- Wireless Modem,
- Bar Code Reader,
- Hardware Dongles,
- Cellphone,
- Laptop.

All of these devices that we take for granted have a common component called a USB UART chip. One of the most popular of these chip designs is manufactured by Future Technology Devices Int'l (FTDI) based in Glasgow Scotland.



The functional blocks show the versatility of this common chip. (FTDI graphic)

Based on the popularity of this component it is no wonder that a number of counterfeiters are taking advantage of the market. These knock-off chips function more or less like the genuine FTDI chips and are may even be labeled identically to the genuine FTDI chips. The consumer may not even know they don't have the real thing especially when the chip is incorporated into a cellphone, laptop, camera, or cable TV box.

FTDI made a corporate decision to take action against the fake chips. The chips may look identical from the outside but the silicon within is a different story. The software that interfaces with the chip can tell the real thing from a fake. The new driver exploits these differences, reprogramming it so it won't work with existing drivers. It's a bold strategy to cut down on silicon counterfeiters on the part of FTDI.

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The company decided to release updated drivers that would not function properly with the fake chips. Microsoft agreed to include the updated drivers in their regular operating system updates. Many people activate the automatic update feature in Windows and are not aware they downloaded the new drivers.

The result of the driver update isn't just a case where fake FTDI chips won't work if plugged into a machine running the newest FTDI driver; the latest driver bricks the fake chips, rendering them inoperable with **any** computer. The new driver for these chips reprograms the USB PID to 0, something Windows, Linux, and OS X don't like. This renders the chip inaccessible from any OS, effectively bricking any device that happens to have one of these fake FTDI serial chips. Your device suddenly cannot communicate using the fake chip!

The angry response from users wasn't what FTDI anticipated. Microsoft also received a blast from users for stealthily distributing software that would shut down an unwitting user's equipment. FTDI recalled the driver update and Microsoft agreed to refrain from this type of stealth update in the future.

What do you do if you have a device affected by the driver? FTDI has posted a repair process on it's website (<http://www.ftdichip.com/Support/Utilities.htm>) titled "Ignore Hardware Serial Number Registry Editor Utility". You can download the exec file application and run at your own risk. Good luck repairing any affected chips.

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SOUTH CHINA SEA Sailors aboard the guided-missile destroyer USS Sampson (DDG 102) improve their 50. caliber machine gun efficiency during a live-fire training. Sampson is deployed to the 7th Fleet area of responsibility in support of security and stability in the Indo-Asia Pacific region.

Pizzicato Digital Radio

For the first time in history, a prototype radio has been created that is claimed to be completely digital, generating high-frequency radio waves purely through the use of integrated circuits and a set of patented algorithms without using conventional analog radio circuits in any way whatsoever. This breakthrough technology promises to vastly improve the wireless communications capabilities of everything from 5G mobile technology to the multitude of devices aimed at supporting the Internet of Things (IoT).

The significance of this new technology cannot be overstated: Every aspect of radio frequency generation is said to be created using a string of digital bits, and nothing else. There are no analog circuits, no filters, no chokes, none of the traditional circuitry and components expected in a radio transmitter. Consisting of a mere handful of components, including a couple of integrated circuits, an antenna, and not much else, the transmitter – dubbed Pizzicato – promises to change the face of wireless transmission.

Created by Cambridge Consultants, the initial trials of the Pizzicato have been claimed to show that it has fully met all the expectations of its myriad performance requirements. But more than this, the Pizzicato has brought bulky radio circuits down to microprocessor levels, with the promise of even smaller, more efficient uses of the technology in future.

“Our first trial of the technology has created 14 simultaneous cellular base station signals,” said Monty Barlow, director of wireless technology at Cambridge Consultants. “But it is the potential which is so exciting. Like mainstream microprocessing, a Pizzicato-based radio would directly benefit from Moore’s Law – shrinking in cost, size and power consumption with each new generation of silicon fabrication.” In recent years, as ever more users move on to mobile broadband and devices bound for the IoT come on line, electronics designers have sought ever greater improvements in the data rates that can be jammed into channels on the wireless spectrum. However, the limits of what can be achieved using analog circuits or even the more advanced analog-digital amalgams used in software-defined radio (SDR) are rapidly approaching their useful limits.

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In addition, the limited availability of radio spectrum bands, particularly in the more popular lower frequency ranges (less than 1 GHz), is being exacerbated due to their popularity. That is, with the lower frequencies ability to travel further distances or pass more easily through walls and other solid objects being far greater than that of higher frequencies, they provide more reliable and consistent connections for users, therefore making them much more desirable for wireless equipment manufacturers.

One way to improve efficiencies at these frequencies is the employment of dynamic switching capabilities to sense the radio environment and switch various settings as required, in real time. In other words, by using a type of “cognitive wireless” technique to intelligently control the way that signals are sent and received and, therefore make maximum use of the available spectrum.

According to Cambridge Consultants, this could potentially open up access to a larger proportion of the estimated 90 percent of the lower-frequency spectrum that is largely unused at any one time.

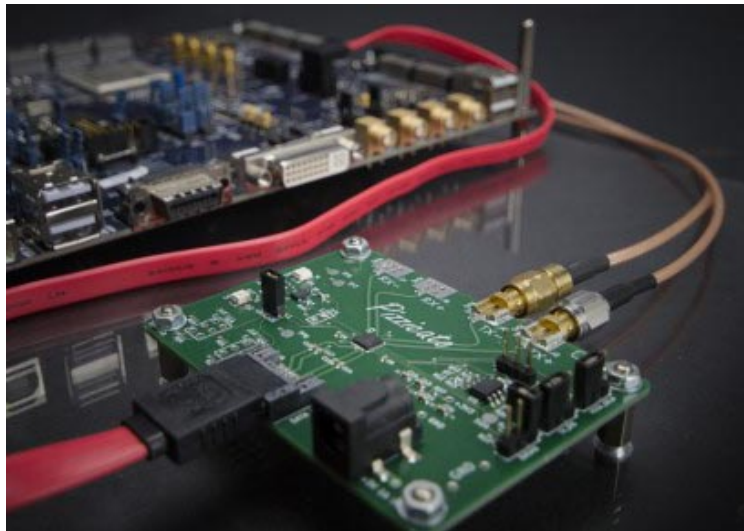
This may be achievable at low frequencies, however higher frequencies of 10 GHz and above increasingly require a range of beam-forming and meshing techniques (such as those used in aircraft data links) along with other methods of signal improvement to help improve their intrinsic lack of range. This is where the

Pizzicato may prove its mettle, especially over the traditional analog parts of conventional radio technology.

“If we’re going to get high-speed broadband to every mobile phone in the world, we’ll need lots of tiny, high-performance radios in those phones,” said Barlow. “The radios will be squashed together in a way that analog just doesn’t tolerate. Whereas a Pizzicato-like digital radio can follow Moore’s Law to smaller size and lower power consumption. It could also be programmed to generate almost any combination of signals at any carrier frequencies, nimbly adapting its behavior in a way that is impossible in conventional radios. It is early days for this technology, but we believe radio design has reached a turning point.”

No announcement has been made regarding the commercial release of this technology.

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The Pizzicato is a breakthrough in wireless technology – radio frequency transmission using only digital technology

Badger's Par-tay!

Wisconsin State QSO Party Sunday March 15th

The West Allis Radio Amateur Club is once again sponsoring the Wisconsin QSO Party on March 15, 2015 from 1800Z to 0100Z March 16. (That would be 1:00PM CDT to 8:00PM CDT on Sunday, March 15th)

The objective for non-Wisconsin Stations is to work as many Wisconsin stations as possible in as many Wisconsin counties as possible. There are a total of 72 counties in Wisconsin.

The contest sponsors have established several station classes and an impressive list of achievement awards. Voice contacts will earn one point while digital QSOs are worth double. There are multipliers for number of counties, power level, operators, etc.

Where is the party? All amateur bands and modes not prohibited for contesting may be used. No Repeater QSO's. Be a gentleman and stay out of the national calling frequencies when operating the VHF bands.



Phone	CW	VHF	
1.870 mHz	1.820 mHz	6 M	50.140(SSB)
3.860 mHz	3.550 mHz		52.530(FM)
7.230 mHz	7.050 mHz	2 M	146.550
14.260 mHz	14.050 mHz	1.25 M	223.520
21.350 mHz	21.050 mHz	70 cm	446.025
28.400 mHz	28.050 mHz		

The West Allis Amateur Radio Club website has the complete rules: <http://www.warac.org/wqp/wqp.htm>

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ISS Slowscan TV

The Amateur Radio on the International Space Station (ARISS) program included another round of Amateur Radio slow-scan television (SSTV) activity from the International Space Station during February. Transmissions were from RS0ISS.

The images transmitted repeated the first series commemorating Russian space history, previously sent last December and again earlier in late January and early February. Non-stop SSTV transmissions from RS0ISS were scheduled for the third week in February. The SSTV mode was PD180, which can produce high-quality images with a frame scan of 187 seconds. The transmission of the twelve different images depicting Soviet space pioneer Yuri Gagarin —

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the first human to orbit Earth —were on the usual frequency will be sent on 145.800 MHz, with a 3-minute off time between transmissions.

Received images were uploaded to the image gallery at: http://www.spaceflightsoftware.com/ARISS_SSTV/index.php

During the previous round of SSTV transmissions from RS0ISS, a Polish radio enthusiast, 22-year-old Radoslaw Karwacki, used an RTL-SDR “dongle” to pick up the SSTV signals from the ISS. The tiny software-defined receiver, which plugs into a computer USB port and includes an antenna port, cost about \$15. He used a basic dipole and free software to receive and display the images. “I blindly tuned in on that frequency during ISS flyby and happened to receive the signal,” he told *Daily Mail* Science and Technology reporter Jonathan O’Callaghan.

“This is an excellent example of how low cost systems can be employed by students to copy pictures directly from the ISS,” said ARISS International President Frank Bauer, KA3HDO. “We are working on additional picture downlinks over the course of the year using images from our international team. Our next initiative is a series of pictures of ‘spaceflight inventors,’ including Tsiolkovsky, Goddard, Oberth, Von Braun, and others.”

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ARES Breakfast
Saturday March 14th
7:30AM
Perkins Restaurant
Savage, MN

NECOS Schedule March 2015

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

March 2015

- Mar 2** N0BHC Bob
- Mar 9** KD0UWZ Chad
- Mar 16** KC0YHH Tony
- Mar 23** KB0FH Bob
- Mar 30** WA0DGW John

April 2015

- Apr 6** KD0UWZ Chad
- Apr 13** KC0YHH Tony
- Apr 20** KB0FH Bob
- Apr 27** N0BHC Bob