



ARES COMMUNICATOR

Information for Scott County Amateurs



October, 2013

Accurate, Reliable Emergency Communications for our Community

Volume 13, Number 10

Colorado Flooding

Amateur Radio Provides Critical Communication

Starting early last month, more than five dozen Amateur Radio Emergency Service (ARES) volunteers had deployed in and around flood-stricken counties of Colorado, providing critical communication for Red Cross shelters and state and local emergency operation centers. Recent heavy rains had caused veritable mountainside tsunamis that have caused rivers and streams to overflow their banks, ravaged roads and property and displaced an undetermined number of residents. At least three people are known to have died. ARRL Colorado Section Manager Jack Ciaccia, WM0G, says that with power cut off to affected communities and many cell telephone towers along the Big Thompson River toppled by the flooding, ham radio is providing medical and health-and-welfare traffic between evacuation centers and the EOCs.

“Every EOC is being staffed by ARES people,” Ciaccia told ARRL. “Almost every evacuation center has an ARES communicator, doing either voice or packet communications between EOCs and shelters.”

The isolated towns of Estes Park, Lyons, and Jamestown were or still are relying solely on ham radio for contact with the outside. Jamestown has since been evacuated. “Everybody was huddled into the high school there,” Ciaccia told ARRL. He was in contact with the mayor there and trying to get the community needed resources as soon as possible. Hams in Estes Park were working out of the EOC in the Town Hall, which is on high ground. “There’s no place to go. Everything’s flooded,” Ciaccia said. “The only ham in Lyons was working out of an evacuation center at the local elementary school.” He said the National Guard had been relocating some evacuees, as the shelter has become overcrowded.

Colorado Flooding *cont'd on page 2*

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

EDITOR: Bob Reid, Scott County Emergency Coordinator

Snail Mail: 13600 Princeton Circle
Savage, MN. 55378

E-Mail: N0BHC@aol.com

Phone: Home 952-894-5178 Portable 612-280-9328

Ecom Training

ARRL offers online training for hams who want to participate in the Amateur Radio Emergency Service.

The time for training is before a disaster...not during one.

Two courses make up the ARRL ARES training program. The former Amateur Radio Emergency Communications (AREC) series of three training courses has been reconfigured into two courses: An introductory course and a course for leaders and managers.

The first course is Introduction to Emergency Communication (#EC-001). This course was revised in 2011 and is an update of the former Level 1 course. It is designed to provide basic knowledge and tools for hams who want to serve as a Public Service volunteer. It provides an opportunity for non-hams who rely on communications in emergency situations to learn about Amateur Radio and its unique role in emergencies.

The course is offered online using the Moodle learning platform. The *Introduction to Emergency Communication* course has six sections with 29 lesson topics and a 35 question final assessment. Participants should plan on completing the course in approximately 45 hours over a nine week period. This is a mentored course, in which you may work according to your own schedule. Cost is \$50 for ARRL members and \$85 for non-members.

Ecom Training *cont'd on page 2*

ARES Activities

Weekly Net Monday 7 PM 146.535 mhz (s)

Breakfast Saturday, October 12th

Digital Monday, October 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

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.

Unified Command:

- A. Assigns a single Incident Commander to assume unity of command and make decisions for all jurisdictions.
- B. Enables all agencies with responsibility to manage an incident together by establishing a common set of incident objectives and strategies.
- C. Requires that employees report to several different Incident Commanders, each representing each jurisdiction.
- D. Obligates all responsible agencies to pool their resources without consideration to the terms of mutual aid and assistance agreements.

Check next month's ARES Communicator for the solution

September NIMS Knowledge Solution

1. Who is the individual responsible for all incident activities, including the development of strategies and tactics and the ordering and release of resources?
 - A. Incident Commander
 - B. Operations Section Chief
 - C. Emergency Operations Center Manager
 - D. Agency Executive or Senior Official

Scott County ARES Contacts

Emergency Coordinator
Bob Reid N0BHC
13600 Princeton Circle
Savage, MN 55378
952-894-5178
N0BHC@arrl.net

Asst. Emergency Coordinator
Bob Minor W0NFE
5210 West 141st Street
Savage, MN 55378
952-894-2657
W0NFE@arrl.net

Asst Emergency Coordinator
Daniel Vande Vusse N0PI
5722 West 141st Street
Savage, MN 55378
952-440-1878
N0PI@arrl.net



Colorado Flooding - cont'd from page 1

On Saturday, September 14, US Congressman Cory Gardner (R-4) visited the state emergency operation center to express his appreciation to the Amateur Radio operators responding to the historic flooding disaster. Rep Gardner asked Colorado Section Emergency Coordinator Robert Wareham, N0ESQ, to extend his thanks to all ARES members staffing positions in the field as well.

Boulder County deployed miniature drone aircraft carrying Amateur TV cameras to survey the affected, more remote regions, to spot individuals who may need to be rescued. "We're still in a search-and-rescue mode," Ciaccia said, "not really in a damage-assessment mode."

Ciaccia said the drones - a fixed-wing aircraft and a hybrid gas/electric-powered helicopter - have been transmitting ATV video via UHF to the ground and simultaneously recording the video on a memory stick. The helicopter can remain in the air for more than 5 hours at a clip, recording images for officials at the EOC to evaluate. Ciaccia said Boulder County Emergency Coordinator Al Bishop, K0ARK, owns Reference Technology, the company providing the drones.

Ciaccia said that during the past year the Boulder County ARES team created the Mountain Emergency Radio Network (MERN) on its own time and money and put up two repeaters - one at Allenspark and another in Gold Hill. "The intent was to start educating people in the mountain regions to become hams," Ciaccia said. Some 65 individuals have gotten their licenses, and the team provided each with a radio. "Those radios and those people - they became the eyes and ears for their communities," Ciaccia explained.

As power was lost, the only remaining means of communication were the two repeaters operating on propane-powered generators. "The system worked," Ciaccia added, "and we were able to utilize it for emergency communication purposes." Those communities have since been evacuated.

BREAK - OVER

Ecom Training - cont'd from page 1

For start dates, registration deadlines and more visit www.arrl.org/online-course-catalog

ARRL is now accepting on-line enrollments for October and November Sessions. If you want a good understanding of emergency communications basics, this is a great place to start.

The Introduction to Emergency Communication Course Book, 4th Edition, is the course transcript for the *Introduction to Emergency Communication* course (EC-001) and is an optional resource.

ARRL has a special offer through October 15th. You can purchase the normally priced (retail \$24.95) text for only \$19.95. Be sure to enter the coupon code "ARES" prior to checkout. You can check out the table of contents here: www.arrl.org/shop/The-ARRL-Introduction-to-Emergency-Communication-Course/

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.

4. What do we call the first ten amendments to the Constitution?
- A the Declaration of Independence
 - B the Bill of Rights
 - C the inalienable rights
 - D the Articles of Confederation
 - E the Federalist Papers

September Citizenship Exam Answer

3. Who has the power to veto a bill?
- D the President

BREAK - OVER



DXActivity

IZ1MHY, Andrea, who will be operating as S79MHY from Praslin Island (AF-024), Seychelles from October 9-17 now has a Website up and running at <http://www.mdxc.org/s79mhy/>. Activity will be on all modes on 1.8 through 28 MHz. QSL via IZ1MHY

HA7JTR, Laci, is planning to be QRV from Masecha (1240 meters above sea level), Liechtenstein as HB0/HA7JTR from October 24 to 29, including participation in the CQ World Wide DX SSB Contest. Outside the contest he'll be operating "holiday style". Laci will be running 100 watts into a four band DunaX ground plane for 7-28 MHz and an inverted vee on 80 meters. QSL via HA7JRT QRZ.com address.

KG6DX, Joel, plans to operate as NH2DX from Guam Island in the CQ World Wide DX Phone Contest on October 26 and 27. This will be a Single-Op Single-Band 15 meter effort. QSL via NH2DX Callbook address.

The Daily DX provides up to date info on DX activity along with QSL routes / managers and IOTA events and contests. Check the Daily DX homepage for info: <http://www.dailydx.com/> Sign up for a free two-week subscription to daily updates.

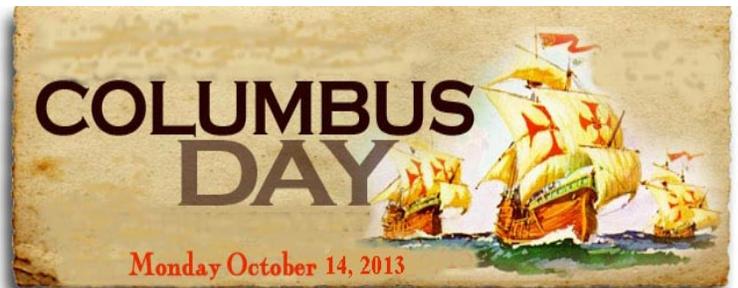
BREAK - OVER

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. Which of the following describes Baudot code?
 - A. A 7-bit code, with start, stop and parity bits
 - B. A code using error detection and correction
 - C. A 5-bit code, with additional start and stop bits
 - D. A code using SELCAL and LISTEN
2. In what segment of the 20 meter band are most PSK31 operations commonly found?
 - A. At the bottom of the slow-scan TV segment, near 14.230 MHz
 - B. At the top of the SSB phone segment near 14.325 MHz
 - C. In the middle of the CW segment, near 14.100 MHz
 - D. Below the RTTY segment, near 14.070 MHz
3. Approximately how long does it take the increased ultraviolet and X-ray radiation from solar flares to affect radio-wave propagation on the Earth?
 - A. 28 days
 - B. 1 to 2 hours
 - C. 8 minutes
 - D. 20 to 40 hours

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



September General Pool Answers

1. What part of a data packet contains the routing and handling information?
 - C. Header
2. What effect does a Sudden Ionospheric Disturbance have on the daytime ionospheric propagation of HF radio waves?
 - B. It disrupts signals on lower frequencies more than those on higher frequencies
3. What segment of the 20 meter band is most often used for data transmissions?
 - B. 14.070 - 14.100 MHz

BREAK - OVER

The question is: “Explain amateur radio?”

Source WIA News

Seems to be a pretty simple question, but think about it, do you have the right answer or answers? Dare say most of us would not be able to succinctly give an answer.

That is, without saying what we did, and even a few who would slip into jargon and ham-lingo to give some sort of a reply.

As every good salesperson learns it is essential to know about the product or service on offer to have a hope of clinching a deal with a customer. So it should be with amateur radio, if we are to be successful in recruiting new people into our ranks. Unless we have the right messages and can communicate them, true success is not realized.

The Wireless Institute of Australia (WIA) in the lead-up to its PR4AmateurRadio Expo in April will help clubs or groups maximize their involvement in this publicity drive. And as an ‘explain amateur radio’ Ed VK2JI says it’s time to “Wake up and smell the roses!” it’s a kind of Ham Radio 101 primer.

How often do we hear each other saying this or that was good “Back in the day”?

Well I’ve been around the traps a few times and agree the 70’s and 80’s were great for Amateur Radio and its importance in the world. But STOP and take a look around. You may not have realized it but it’s GREAT to be in Amateur Radio again.

- With regular contacts to the space station
- With Amateur Radio providing an essential service in many, many disaster situations around the world.
- With great contests and DXpeditions in many cases to places not possible before.
- With new construction kits letting even a newcomer build a complete stable transceiver in a few nights work.
- With portable operation being at its highest for a long time with Summit and Park activation award schemes.
- With the use of QRP both portable and with new data modes that were never around “Back in the day” allowing communications below the noise level.
- With Digital and Analogue repeaters allowing a handy talkie to talk around the world.
- With tracking and data comms via APRS.
- With balloon launches to the outer layers of the Earth’s atmosphere.

We are seeking more young people to join our fantastic hobby - we now have so many more things to offer them than we had “Back in the day”.

So PLEASE the next time someone says to you - “So what’s this ham radio thing about” Don’t say “well it used to be good

cont'd col. 2

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 October 5, 2013.

Software	Version
Fldigi	3.21.76
Flwrap	1.3.4
Flmsg	1.1.32
Flamp	2.1.01

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



cont'd from col. 1

but now it’s just a bunch of us old folk chatting to each other” - while that’s important there are so, so, many other facets to the hobby today that simply didn’t exist years ago.

WAKE UP AND SMELL THE ROSES!

The Amateur Radio hobby is BACK IN BLOOM and leading technology as always.

BREAK - OVER

DX Info

Praslin Island, Seychelles

IZ1MHY, Andrea, who will be operating as S79MHY from Praslin Island (AF-024), Seychelles from October 9-17 now has a Website up and running at <http://www.mdx.org/s79mhy/>. Activity will be on all modes on 1.8 through 28 MHz. QSL via IZ1MHY

Masecha, Liechtenstein

HA7JTR, Laci, is planning to be QRV from Masecha (1240 meters above sea level), Liechtenstein as HB0/HA7JTR from October 24 to 29, including participation in the CQ World Wide DX SSB Contest. Outside the contest he'll be operating "holiday style". Laci will be running 100 watts into a four band DunaX ground plane for 7-28 MHz and an inverted vee on 80 meters. QSL via HA7JRT QRZ.com address.

Guam

KG6DX, Joel, plans to operate as NH2DX from Guam Island in the CQ World Wide DX Phone Contest on October 26 and 27. This will be a Single-Op Single-Band 15 meter effort. QSL via NH2DX Callbook address.

The Daily DX provides up to date info on DX activity along with QSL routes / managers and IOTA events and contests. Check the Daily DX homepage for info: <http://www.dailydx.com/> Sign up for a free two-week subscription to daily updates.

BREAK - OVER



National Candy Corn Day Wednesday October 30th. Enjoy a handful of this sweet Fall treat. And, what perfect timing. National Candy Corn Day comes just a day before Halloween. That means you can eat plenty of it, before you go out Trick or Treating.

Candy corn is enjoyed all year long. Place it in a candy dish any time of the year, and watch it disappear by the handful. By far, the vast majority of candy corn is consumed during the Fall months, with both Halloween and Thanksgiving being the biggest times to eat it.

Candy corn was invented in the 1880s by George Renninger, and first manufactured by the Wunderle Candy Company. The Goelitz Candy company was the first to manufacture mass quantities around the turn of the century.

Candy corn consists primarily of corn syrup, honey, and sugar. There's lots of carbs(sugar), but it's fat free!?

RFI Reporting Process

Ed Note: This info was posted recently in an RFI forum. Seems a ham was having RFI problems from the cheap grow lights used by a basement 'herbal' farmer.

Have an unresolved RFI problem? There is help available from the FCC. Here are some places to start. Don't forget, you need to file a complaint each and every time you have a problem. The primary problem is people making one call, once. Don't forget to mention Part 15.3(n) and 15.5(b)(c), make it easy by pointing out the specific violation. I don't see grow lights exempted in 15.103.

Filing a Complaint. If you cannot locate the source of the interference and the problem continues, you can file a complaint with the FCC, which has established rules to reduce interference. There is no charge for filing a complaint. You can file your complaint using an online complaint form. You can also file your complaint with the FCC's Consumer Center by calling 1-888-CALL-FCC (1-888-225-5322) voice or 1-888-TELL-FCC (1-888-835-5322) TTY; faxing 1-866-418-0232; or writing to:

Federal Communications Commission
Consumer and Governmental Affairs Bureau
Consumer Inquiries and Complaints Division
445 12th Street, SW
Washington, DC 20554

Amateur Radio is used for public safety, don't forget here: <http://transition.fcc.gov/eb/sed/>

Anyone else you contact first is going to contact the above departments, so just go direct. Whether you call, or they call, the call is still made.

BREAK - OVER



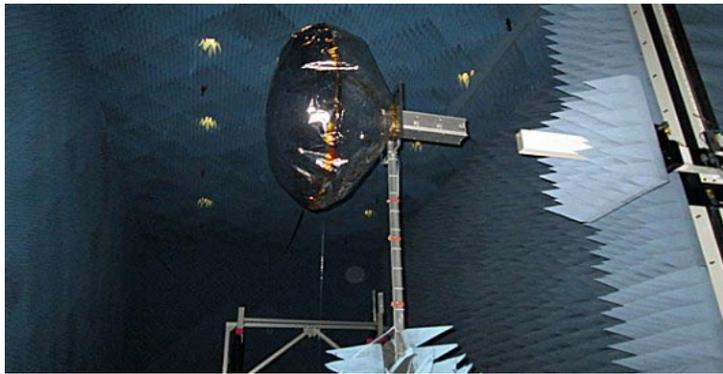
GULF OF OMAN An F/A-18C Hornet, assigned to the Checkerboards of Marine Fighter Attack Squadron (VMA) 312, launches from the flight deck of the aircraft carrier USS Harry S. Truman (CVN 75) deployed to the U.S. 5th Fleet area of responsibility conducting maritime security operations, supporting theater security cooperation efforts and supporting Operation Enduring Freedom.

CubeSat Antennas

Big antenna on a tiny satellite?

CubeSats are certainly in the process of revolutionizing the satellite industry. They can serve many of the same functions as full-sized satellites, but at a size of 10 x 10 x 10 cm (3.9 x 3.9 x 3.9 in) and a mass of under 1.33 kg (2.9 lb), they're much cheaper to build and get into orbit. With that smaller overall size, however, comes smaller onboard antennas. These severely limit CubeSats' communications range, restricting them to fairly low orbits. That may be about to change, though, as MIT is developing larger, *inflatable* antennas.

Inflatable satellite antennas have been developed and tested before, although they were designed for regular-sized satellites, and utilized compressed air systems. Given the limited payload capacity of a CubeSat, cramming in heavy, bulky metal tanks and



One of the inflated Mylar test antennas

pressure valves just wouldn't work. There's also a risk that the compressed air tanks could explode in transit.

Instead, the MIT team turned to benzoic acid. It's a sublimating powder, which means that it expands into gas form when exposed to low pressure – and in outer space, the pressure is pretty darn low.

In order to test their system, the researchers constructed two inflatable one-meter-wide antennas out Mylar – one was cone-shaped, and one was cylindrical. Each one had a few grams of benzoic acid placed inside of it, then was folded down into the inside of a CubeSat. When that satellite was subsequently exposed to a low pressure environment in a vacuum chamber, each of the antennas responded by inflating to their intended shape.

The electromagnetic properties of the antennas were also tested, to see how well they would be able to transmit data. While both did well, the cylindrical antenna particularly showed promise – according to MIT, it can transmit data 10 times faster and seven times farther than traditional CubeSat antennas.

It certainly sounds impressive, although it's rather difficult to picture a Mylar balloon standing up to the rigors of outer space. Well, that's where another characteristic of benzoic acid comes into the picture – the powder only turns to gas as long as there's

room for it to expand. Once a space is occupied with the gas, the remainder of the powder stays in solid form.

Should a micrometeoroid make a small tear in the Mylar, the escaping gas will simply be making room for more of the powder to turn into gas – this ensures that as long as there is still some powder present, and the holes aren't *too* big, the antenna will remain inflated. Through more tests, the MIT scientists determined that one of the antennas could stay inflated for up to a few years, even if it contained multiple small holes.

“With this antenna you could transmit from the moon, and even farther than that,” says Alessandra Babuscia, who led the research. “This antenna is one of the cheapest and most economical solutions to the problem of communications.”

BREAK - OVER

Lone Signer

Only 1 Person Signed 4 Major U.S. Documents

The history of the United States tells us that only one person signed our nation's four major early documents: the Articles of Association in 1774; the Declaration of Independence in 1776; the

Articles of Confederation in 1777, and the U.S. Constitution in 1787. That person was Roger Sherman, of Connecticut. Roger Sherman was born in 1721 in Newton, Massachusetts, admitted to the bar in 1754, served in the Connecticut assembly in 1755-1766 and in the state senate in 1766-1785, elected as Congressman from Connecticut in the 1st Congress in 1789 and was a



U.S. Senator from 1791 until his death in 1793. He was chosen as a delegate to the Continental Congress, was on the committee to draft the Declaration of Independence with Brothers Benjamin Franklin and Robert R. Livingston, and Thomas Jefferson and John Adams. (He is pictured with the others in the famous painting that hangs in the Capitol Rotunda.) Brother Sherman helped draft the Articles of Confederation, made 138 speeches during the Constitutional Convention, helped draft the New Jersey Plan and the Connecticut Compromise, and authored a major section of the Constitution. Patrick Henry described him as one of the three greatest men at the Constitutional Convention.

BREAK - OVER

Signal Reporting: Radio Check

Would you scratch your head and wonder what language these operators were speaking if you heard the following: “Yer modulatin’ wall to wall and treetop tall pardner.” “I’ll give you fifty five, speed limit, fifty five.” “I’d say twenty two, rifle shot, twenty two, rifle shot.” “Lima Charlie.” ?

Signal reporting brings out some strange responses! You may be surprised to know that there is an ‘official’ procedure for reporting the strength and understandability of radio signals. The process is laid out in an officially sounding document titled, “Allied Communications Publication Communication Instructions - Radiotelephone Procedures APC125F”. This document details communications protocols for Allied Forces worldwide.

The title and organization should give you the idea that accurate, reliable communications are an important issue, especially during battle. Our emergency communications work can benefit from the tested procedures.

In directed net operation it is generally assumed that a station’s signal has good strength and readability unless otherwise noted. When the quality of a signal varies from the norm a short, concise, easily understood report called a Radio Check is used.

The description of signal strength contains five options:
LOUD - Your signal is very strong.
GOOD - Your signal strength is good.
WEAK - Your signal strength is weak.
VERY WEAK - Your signal strength is very weak.
FADING - At times your signal strength fades to such an extent that continuous reception cannot be relied upon.

The signal readability report has six options:
CLEAR - The quality of your transmission is excellent.
READABLE - The quality of your transmission is satisfactory.
UNREADABLE - The quality of your transmission is so bad that I cannot read you.
DISTORTED - Having trouble reading you due to interference.
WITH INTERFERENCE - Having trouble reading you due to interference.
INTERMITTENT - Having trouble reading you because your signal is intermittent.

Let’s see how this procedure would fit in a directed net. Red Cross has listed traffic for Eagle Creek with the NECOS. The NECOS directs, “Red Cross, call Eagle Creek and pass your one priority, OUT”.

Eagle Creek has had problems copying Red Cross during the net and wants to test the radio path. Eagle Creek (the station receiving the traffic) responds to the NECOS’ direction, “This is Eagle Creek, Radio Check, OVER”.

If Red Cross has acceptable but less than perfect, reception of Eagle Creek they might respond, “Weak and Readable, OVER”. Eagle Creek determines that the signal received from Red Cross is strong enough and readability is good enough to copy a

cont’d col. 2

message and responds, “ROGER, Ready to copy OVER.”

The entire exchange is brief, concise and provides all stations involved with the information they need to ensure accurate, rapid communications.

Eagle Creek could have determined that the signal from Red Cross was Very Weak and Intermittent and they could not copy a message. When this happens, Eagle Creek would respond, “Very Weak and Intermittent, will need a relay, OVER”.

NECOS would then enter the exchange and serve as the relay station by sending, “Red Cross, this is NECOS, ready to copy one priority for relay, OVER”. Eagle Creek would copy as much of the message as possible during the transmission to NECOS.

NECOS would next call, “Eagle Creek this is NECOS with one priority from Red Cross via relay, OVER”. Eagle Creek may respond by saying, “Eagle Creek ready to copy, OVER” if they were unable to copy any of the message. If Eagle Creek was able to copy most of the message sent by Red Cross, they would ask NECOS for the fills they need to retransmit the message.

This might seem like a lot of needless formality. Consider the information exchanged between three stations using this brief, defined radio check procedure. The radio check is more informative and saves time compared to, “Roger pardner, yer wall to wall and treetop tall.” But the radio check isn’t nearly as colorful!

BREAK - OVER



ARES Breakfast
Saturday October 12th
7:30AM
Perkins Restaurant
Savage, MN

NECOS Schedule October 2013

7 Oct	N0PI Dan
14 Oct	W0NFE Bob
21 Oct	KB0FH Bob
28 Oct	KD0UWZ Chad
4 Nov	KC0YHH Tony
11 Nov	N0PI Dan
18 Nov	W0NFE Bob
25 Nov	KB0FH Bob