



# ARES COMMUNICATOR

## Information for Scott County Amateurs



March, 2013

Accurate, Reliable Emergency Communications for our Community

Volume 13, Number 3

### Midwinter Madness 2013

The 2013 Midwinter Madness hamfest will be held on Saturday March 23, 2013 from 8:00am to 1:00pm at the Buffalo Civic Center. The Civic Center is located at: 1306 County Road 134 also known as Cadler Ave. Buffalo MN

The event is sponsored by K0LTC - Maple Grove Radio Club. Tickets will be available at the Buffalo Civic Center on Saturday March 23 2013 only. Under the simple one price plan, tickets will be priced at \$8.00 each.

VE Testing will be held at the Buffalo Civic Center on Saturday March 23ed in the new building, 2nd floor meeting room. The site is Handicap Accessible by elevator. Please inform us of any special needs that you may have in advance. The 2013 ARRL VE test fee of \$15.00 will apply. Please plan ahead and bring copies of all your documentation along with the exact funds for the VE fee!

Prize drawings will be held at 12:30 PM Saturday March 23, 2013. You need not be present to win! The Grand Prizes a \$ 300 Radio City Gift certificate, 1st Place: \$ 125.00 Radio City Gift certificate, and 2nd Place \$ 75.00 Radio City Gift certificate. Additional prizes include: Two \$50 and two \$25 ARRL gift certificate good for publications, to be awarded separately.

Additional information and a map are available on-line at: [www.k0ltc.org](http://www.k0ltc.org)



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# Happy St. Patrick's Day

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!

### MN VOAD Conf

The 2013 MNVOAD Conference Registration is open! The conference is again at Hennepin Technical College in Eden Prairie on March 23rd 2013.

The low cost for this year's conference is still \$20.00 for a complete day of training, including;

- Registration
- Snacks
- Opening session
- 15 breakout sessions
- MNVOAD Annual Meeting/ Election
- Lunch
- Award Ceremony
- Indoor Vendor Displays and Outdoor Emergency Equipment Displays
- Closing session
- Prize Raffle

Full program and registration information are available at the MNVOAD website:<http://www.mnvoad.org/>



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### ARES Activities

**Weekly Net Monday 7 PM 146.535 mhz (s)**  
**Breakfast Saturday, March 9th**  
**Digital Monday, March 11th**

#### 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.

1. To better serve their constituents, elected and appointed officials should do the following, EXCEPT FOR:
  - A. Help to establish relationships (including mutual aid agreements and assistance agreements) with other jurisdictions and, as appropriate, with nongovernmental organizations and the private sector.
  - B. Provide guidance to their jurisdictions, departments, and/or agencies, with clearly stated policies for NIMS implementation.
  - C. Understand laws and regulations in their jurisdictions that pertain to emergency management and incident response.
  - D. Assume the role of incident commander for all incidents and direct the on-scene technical operations from the Emergency Operations Center.

*Check next month's ARES Communicator for the solution*



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## Frigid Gizzard Recap

The record low temps that gripped the area for a week is now history. The temperatures warmed up just in time for the conclusion of the Frigid Gizzard exercise.

The exercise activity took place on the weekly Monday night Scott ARES training net. Frigid Gizzard kicked off on January 28<sup>th</sup> when participants received their tactical call signs to support a simulated Red Cross shelter operation. The ARES participants checked the Scott ARES website weekly for updates in the exercise scenario and changes in their tactical locations that resulted in messages for the Red Cross EOC or other locations in the exercise.

Over the six weeks of the exercise there were five sites activated along with the EOC. The sites each sent a daily situation report (SITREP) to the EOC. Additional messages were generated to track down lost medications, locate the ERV, line overnight shelter for some clients, order additional meals and supplies, and report the disappearance of one site. Additionally the one shelter client that was isolated due to medical issues was tested positive for active TB.

Monday nights on the Frigid Gizzard always seemed to produce a new twist to the exercise that allowed the participants to improve their digital message handling and have some fun in an emergency simulation.

Over the duration of the exercise there were 36 messages created and sent to support the emergency.

Stop by 146.535 simplex at 7:00 PM on Monday evenings. You never know what might happen!



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## February NIMS Knowledge Solution

Mutual aid agreements and assistance agreements provide:

- B. Mechanisms to quickly obtain emergency assistance in the form of personnel, equipment, materials, and other associated services.

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## PL 259 Installation

### Get Connected!

by: A. Nonny Moose, Technickel Exspurt

Last month's newsletter alerted readers to the appearance of some antenna info. This is the first of periodic reports on antenna topics by our crack technical staff.

This month's report deals with the PL 259 connector. But, that's not an antenna you sputter! That's right but A. Nonny replies, "Just try to use an antenna without connecting the coax to the radio!" (A. Nonny is occasionally a smart alec!)

It seems each amateur has their method to install the PL 259 connector on the end of the coax. Some consider their method to be the best while others are terrified of making the connection. Let's take a look at some of the options.

The steps to installing a PL 259 all follow the general steps of: 1 Prep the end of the coax – strip the insulation, dress the shield, strip the inner insulation, prep the conductor. 2. Prep the connector, shell, reducer if used. 3 apply connector to wire. 4 Solder were appropriate.

Let's take a look at a couple of schemes to deal with the "large size" coax like 8214, RG-8 and LMR400. These cables use only the PL 259 with no adapters. There is a nicely illustrated description of the classic installation prepared by KL7FG available at: [www.mooshornarc.com/news/InstallingPL259.pdf](http://www.mooshornarc.com/news/InstallingPL259.pdf) This method uses common hand tools and a soldering gun for heat.

Soldering the shield to the connector through the four small holes is often described as challenging! This method, nicely illustrated by K3LR, solders the shield to the outside of the connector body. You can view the process here: [www.k3lr.com/engineering/pl259/](http://www.k3lr.com/engineering/pl259/) This method uses some tape to fill the space usually occupied by the shield in the usual method.

The connector installation gets slightly more complicated when using smaller diameter cable such as RG-58 and RG-8X. Connector installation on these cables requires an adapter to match the PL 259 to the smaller diameter cable.

The conventional method for the smaller cable is very much like the RG-8 procedure. The cable prep is

slightly different but not too mysterious. The shield is soldered to the connector using the four small holes similar to the larger cable.

There is another method of handling the shield connection for the smaller cable is presented by K6MHE in a document located here: [www.w5fc.org/files/how-to/PL259.PDF](http://www.w5fc.org/files/how-to/PL259.PDF) This process



solders the shield to the rim of the adapter and might result in a more confident connection using a smaller wattage iron.



PL 259 reducers -  
RG 58 left, RG 8X right

Want to see one option on YouTube? Check out this YouTube video:

[www.youtube.com/watch?v=AYrv0z63ov8](http://www.youtube.com/watch?v=AYrv0z63ov8)

Well, there you have a couple of options for installing the PL 259 that you may not have considered. Give them a try and see if you don't have a new favorite connection scheme.

One good way to improve your PL 259 installation skill is to actually solder a few connectors. It is not an expensive experiment to invest in 50 feet of coax and a dozen connectors and adapters, depending on the cable. You can build several coax jumper cables of 2 ft, 3 ft, and 4 ft, and still have about 30 ft of coax ready for use.

If you don't have a lot of soldering experience, A. Nonny recommends rosin core solder and grasping the iron on the end attached to the cord. Alternate grips may be painful. You might find a can of paste soldering flux useful for soldering the shield braid.

The best connection procedure for you is the one that results in a connector properly applied. So, gather up your cable, connector, soldering iron, and tools and start your antenna project. Who knows, A. Nonny Moose may have something for the other end of that coax next month.

*(Editor's Note: Be sure to slide the threaded connector shell on the coax before you even strip the covering! Don't ask how this lesson was learned – lots of cutoff connectors!)*



### *An Irish Blessing!*

*May the sun shine all day long,  
everything go right and nothing wrong.  
May those you love bring love back to you,  
and may all the wishes you wish come true!*

## Skywarn Workshop 2013

Saturday April 13th

Join storm spotters and weather enthusiasts from across the state and region for the 7th annual Minnesota Skywarn Workshop. The workshop will be held on Saturday, April 13<sup>th</sup> at the Schulze Hall Auditorium at the University of St. Thomas in Minneapolis. It will be a full-day severe weather conference designed to train you in spotting techniques, equip you with information about the latest in weather technology, and connect you with other Skywarn communities from across the state.

The workshop is geared for experienced storm spotters, but is open to all. If you are interested in further developing your storm spotting



skills and meteorological knowledge, this workshop is the perfect place for you. If you are a public safety official and would like to hear more about the latest weather technologies that can make your community safer, please join us. If you simply have a fascination for weather and want to learn more about it, you are welcome to attend.

The Minnesota Skywarn Workshop is intended to give intermediate to advanced skills in the areas of storm identification, severe storms research, spotter operations, storm safety, and the latest technology involving severe weather. If you are new to the spotter community, please be sure to also attend a spotter certification class near you!

Workshop pre-registration is \$30. You can register on-line here: [www.mnskywarnworkshop.org/register.php](http://www.mnskywarnworkshop.org/register.php) Lunch options this year include a pre-ordered box lunch or lunch on your own off campus. Because there will not be other lunch options on campus, we highly recommend the pre-ordered lunch to ensure you have time to eat and visit with other attendees while not missing any of the presentations. The nearest off-campus restaurants are several blocks away.

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## Dot Com Birthday!

symbolics.com

The first .com domain name, symbolics.com, was created on March 15, 1985 by Massachusetts computer company Symbolics Inc.

The first domain name, created in January of 1985, was actually Nordu.net, which was used to serve as the identifier of the first root server, nic.nordu.net. Symbolics.com was the first domain name to be registered through the DNS (Domain Name System) process.

At that time the Internet was a noncommercial medium used more as a military and academic tool. It would be years before the World Wide Web and Web browsers allowed just about everything and everyone to be represented with a .com address.

Only five other companies registered a domain name in 1985: bbn.com, think.com, mcc.com, dec.com, and northrop.com. Other notable computer companies registered their domains over the next several years including IBM, Sun, Intel, and AMD in 1986, Apple and Cisco Systems in 1987, and Microsoft in 1991.

Today there are approximately 250 million domain names in existence, and about 110 million are .com extensions.

In 2009, symbolics.com was sold to XF.com Investments, a domain-aggregation company. It now hosts the blog of XF.com founder Aron Meystedt, who says on the site: "For me, personally, I am excited (and honored) to hold the first .com ever registered. Since domain names are my business, I am happy to be the owner of this fantastic piece of Internet history."

Symbolics was conceived at the MIT Artificial Intelligence lab and best-known for designing and manufacturing a line of Lisp machines, single-user computers optimized to run the Lisp programming language. The machines became the first commercially available "general-purpose computers" or "workstations" before those terms were coined.

The company also wrote a fully object-oriented operating system and development environment called "Genera" to run on those workstations, and its software was used to create scenes in "Star Trek III: The Search for Spock," among other things.

Symbolics was a member of the Route 128 corridor of high-tech firms that contributed to the "Massachusetts Miracle" period of economic growth. The company still exists today as a privately held company that sells and maintains its products, but has a new address: symbolics-dks.com.

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*"Positive thinking won't let you do anything but it will let you do everything better than negative thinking will."*

Zig Ziglar

## Phones in Space!

### STRaND-1 - smartphone-based satellite

The University of Surrey's Surrey Space Centre (SSC) and Surrey Satellite Technology Limited (SSTL) are set to launch the world's first smartphone-based satellite. Built around a Google Nexus One smartphone running on the Android operating system, the STRaND-1 (Surrey Training, Research and Nanosatellite Demonstrator) satellite will also be the U.K.'s first CubeSat to go into space.

Weighing only 4.3 kilograms (9.5 lb) and standing 30 centimeters (11.8 in) tall, it's one of a special class of satellites known as nanosatellites (nanosats), which are satellites with a wet mass between 1 and 10 kg (2.2 and 22 lb). Relying on a off-the-shelf consumer gear helped the team complete building and testing of the STRaND-1 in just three months. The logic is that smartphones already contain much of what a satellite needs, such as cameras, radio links, accelerometers and high performance computer processors. According to SSTL, the only things it lacks are solar panels and propulsion.

In addition to the smartphone, the STRaND-1 also packs a new high-speed Linux-based CubeSat computer developed by SSC. Its job is to operate the satellite during the first phase of the mission when a series of experimental "apps" will be put through their paces. Then, in phase two, the smartphone will take over as mission control back at the University of Surrey tests how the smartphone components stand up to the space environment.

Dr Chris Bridges, SSC's lead engineer on the project, said: "A smartphone on a satellite like this has never been launched before but our tests have been pretty thorough, subjecting the phone to oven and freezer temperatures, to a vacuum and blasting it with radiation. It has a good chance of working as it should, but you can never make true design evolutions or foster innovation without taking a few risks: STRaND is cool because it allows us to do just that."

The smartphone is just one of several firsts for STRaND-1. It will also carry a device called "WARP DRiVE" (Water Alcohol Resistojet Propulsion Deorbit Re-entry Velocity Experiment), which uses a water/alcohol mixture for propulsion, along with a set of Pulsed Plasma Thrusters (PPTs) that use an electric arc to vaporize a solid propellant. Finally, the STRaND-1 will include the first 3D-printed part in space.

To be put into a 785 km (488 mile) sun-synchronous orbit, the STRaND-1 is scheduled to launch from the Satish Dhawan Space Centre in Sriharikota, India on February 25 on the Indian Space Research Organisation's Polar Satellite Launch Vehicle.

Using components harvested from consumer electronic devices runs in the STRaND family, with the STRaND-2 to include Kinect motion-control sensors to let the nanosats seek each other out and dock to form a new, larger satellite.

## 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 does the Q signal "QRQ" mean?
  - A. Slow down
  - B. Send faster
  - C. Zero beat my signal
  - D. Quitting operation
2. What is the Amateur Auxiliary to the FCC?
  - A. Amateur volunteers who are formally enlisted to monitor the airwaves for rules violations
  - B. Amateur volunteers who conduct amateur licensing examinations
  - C. Amateur volunteers who conduct frequency coordination for amateur VHF repeaters
  - D. Amateur volunteers who use their station equipment to help civil defense organizations in times of emergency
3. Which of the following describes an azimuthal projection map?
  - A. A world map that shows accurate land masses
  - B. A world map projection centered on a particular location
  - C. A world map that shows the angle at which an amateur satellite crosses the equator
  - D. A world map that shows the number of degrees longitude that an amateur satellite appears to move westward at the equator with each orbit

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



## February General Pool Answer

1. When sending CW, what does a "C" mean when added to the RST report?
  - A. Chirpy or unstable signal
2. What prosign is sent to indicate the end of a formal message when using CW?
  - C. AR
3. What does the Q signal "QSL" mean?
  - C. I acknowledge receipt

## Nano-Nano Blimp!

The Nanoblimp, billed as “the world’s smallest RC blimp,” uses a plain ol’ party-variety helium balloon as its gas envelope. The Nanoblimp gondola incorporates three propellers (each driven by its own electric motor) that allow the blimp to move up or down, forward or backward, or to pivot left or right. That gondola is simply stuck onto the underside of a balloon using double-sided foam tape. Tiny magnetic ballast weights are then added to the gondola, until the blimp has reached neutral buoyancy – it neither rises nor falls on its own.



Users control the blimp via two joysticks on the included 3-channel Nano-X controller, which doubles as the charger for the gondola motors. It can be set to any of four different radio frequencies, which allows multiple Nanoblimps to be flown in the same room without interference. As can be seen in the video below, this makes it possible to engage in aerial dogfights, in which thumbtack-equipped blimps attempt to pop one another.

The complete kit sells for US\$49.99, which includes one gondola, one controller, and ten latex balloons (just to get things started). Users are responsible for supplying their own helium tank, and four AA batteries for the controller. A reusable Mylar balloon is also available for \$9.

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## SPARKS!

(Posted in a blog at edm-analog)

An antenna for the 40-meter ham radio band is a pretty large thing. A half-wave dipole antenna is around 66 feet long from end to end. Mine was center fed with RG-11/U coaxial cable terminated with a PL-259 type of UHF connector at the transmitter end of the coaxial cable feed line.

One day, I had disconnected that cable from my transmitter for some reason or other and just left the open PL-259 sitting there. Thunderstorms started rolling through. Suddenly I noticed a sound. It was

“snap.....snap.....snap.....snap.....snap...” and so on at a varying rate. I couldn’t

imagine what it was until I saw the open PL-259.

There were quite ener-

getic sparks jumping across the gap between the connector’s center pin and its outer shell. It wasn’t even raining at that moment, but there was enough charge buildup via that dipole antenna for electrostatic discharge (ESD) activity to be going on and to make me very nervous.

I just left the cable totally alone and let it spark to its heart’s content until the thunderstorms had gone.

Lessons learned: ESD events don’t require direct hits from lightning

Never design anything that’s going to be connected to an antenna without providing an intentional discharge path as protection from electrostatic charge build-ups.



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### ARES Breakfast

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

### NECOS Schedule March 2013

- 4 Mar KB0FH Bob
- 11 Mar KC0YHH Tony
- 18 Mar N0PI Dan
- 25 Mar W0NFE Bob
- 1 Apr KB0FH Bob
- 8 Apr KC0YHH Tony
- 15 Apr N0PI Dan
- 22 Apr W0NFE Bob



The First Day  
Of Spring