



# ARES COMMUNICATOR

Information for Scott County Amateurs



December, 2017

Accurate, Reliable Emergency Communications for our Community

Volume 17, Number 12

## 070 CLUB PSKfest

Saturday Jan 6, 2018

Time to fire up the laptop and radio and have some digital fun! The 070 Club annual PSK Fest is a good contest to sharpen your digital operating skills. The object of the contest is to contact as many stations as possible using PSK31 with LOWEST power possible.

The highest power allowed in the contest is 100W. There are 5W, 25W, and 50W operating classes. You don't have to be a blowtorch station to participate and have some fun.

You can find the complete details here: [www.podxs070.com/o70-club-sponsored-contests/pskfest](http://www.podxs070.com/o70-club-sponsored-contests/pskfest).

You can monitor the waterfall and click-and-pounce on station calling "CQ PSKFEST" or find a clear spot and start calling CQ. The contest exchange is simple: Callsign, Signal Report, State. You can work a station once per band. The contest runs on 80M thru 10M (no WARC band operating). Oh, the contacts must use the mode PSK31.

Scoring is straightforward. Each contact is worth 1 point. Take the total points and multiply by the number of different States, Provinces, or Countries (SPC) worked. Don't forget to take credit for working U.S. for your first lower-48 contact. Likewise, you can take credit for the country of Canada with your first "VE" station. One wrinkle in the scoring is that Alaska and Hawaii also count as countries. You can find logging programs to handle the recordkeeping chore for you.

Most logging programs will compile your log in a ADIF format file. You can submit your ADIF log file online using the scorer: <http://hamclubs.info/scorer>. If you have difficulty with or have questions about the scorer, you can contact the contest scorer at: [contests@podxs070.com](mailto:contests@podxs070.com)



Why would emergency communicators bother with participating in a contest? Good question. The skills you develop as you become a more proficient contest operator are the same skills you use in emergency communications. Skills like speed, accuracy, confidence to think on your feet, familiarity with equipment and software, and strategy. Who knew having some fun on the radio could help improve all these skills? Don't let that stop you from jumping into the fray and banging out some contacts on the keyboard!

73 CU in the TEST

BREAK - OVER



## ARES Activities

Weekly Net Monday 7 PM 146.535 mhz (s)

Breakfast Saturday, January 13th

Digital Monday, January 15th

### ARES Nets

MN ARES Phone Net

6:00PM Sunday Freq: 3.860 mhz

ARRL MN Phone Net

12:00p, 5:30p CST Daily Freq: 3.860 mhz

ARRL MN CW Net

6:30p, 9:50p CST Daily Freq: 3.568 mhz

### NETS WITH OUR NEIGHBORS

North Dakota: Daily 3.937 mhz 6:30pm

South Dakota: Daily 3.860 mhz 6:00pm

Wisconsin: Daily 3.985 mhz 5:30pm

Iowa: Daily 3.970 mhz 12:30/5:30pm

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

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## Varactors

**Q: When is a diode not a diode?**

**A: When it is a capacitor!**

Nuk - Nuk - Nuk!

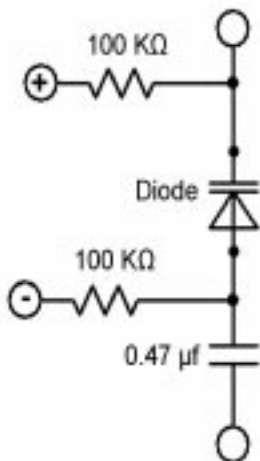
Have you read “voltage controlled tuning” and wondered How dey do dat? Using a common component in a new configuration is the answer. Check out this short video that contains a great demonstration of the concept of a varactor controlled oscillator.

by: W2AEW

<https://www.youtube.com/watch?v=icw8terKP-M&feature=youtu.be>

This tutorial presents the basics of the varactor diode, or varicap diode, and describes how it functions as a voltage controlled capacitor. A test fixture is shown and used to measure the capacitance vs. reverse voltage. Finally, a voltage-controlled oscillator circuit is built and measured, showing how the voltage on the varactor diode is used to tune the frequency of the VCO. Notes from the video are here:

[http://www.qsl.net/w/w2aew//youtube/Varactor\\_diodes\\_with\\_VCO\\_example.pdf](http://www.qsl.net/w/w2aew//youtube/Varactor_diodes_with_VCO_example.pdf)



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### Scott County ARES Contacts

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## Surf's Up!

Surfing the web for interesting topics related to radio, building, computing, and anything else interesting along the way. Send your ‘finds’ to the editor and share the fun!

### RadioKitGuide.com

<http://fofio.blogspot.com/2015/07/radio-kit-guide.html>

A one-stop-website for Ham Radio kit suppliers. A good list of sources for kits that are currently available. Many of these are for QRP operation, but a few are full-featured professional transceivers.

### Antenna Modeling Software

<http://ac6la.com/>

The title of the page pretty much tells it all, “Antenna Modeling Software and Other Utility Programs by Dan Maguire, AC6LA.” This site will devour a couple of hours just exploring. You might accidentally learn something too!

### Homebrew XCVR!

<http://www.ve7ca.net/Hbr200.htm>

Featured on the cover of the March 2008 QST: HBR-2000 HF 160 to 6 meter High Performance All-Mode Transceiver

### QRP'ers Treasure

<http://www.k7qo.com/lab.pdf>

Check out K7QO's QRP Lab Notebook if you enjoy fantastic workmanship in RF projects!

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## NBEMS Current Versions

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

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/](http://www.w1hkj.com/) and <http://www.scottares.org/NBEMS.htm>

Here are the most recent releases as of November 20, 2017.

Software	Version
Fldigi	4.0.12
Flwrap	1.3.4
Flmsg	4.0.3
Flamp	2.2.03

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.



## Amateur Radio License Exam

Want to become a ham? Want to upgrade your license? You can find information and resources to success in ham radio at this page: <http://www.scottares.org/License Info.htm>

If you want to ask questions or find a local Elmer (Mentor) just drop an email to: [newhaminfo@scottares.org](mailto:newhaminfo@scottares.org)

The hams in Scott ARES gather for breakfast the first Saturday of the month at the Perkins Restaurant in Savage. Bring you ham radio questions and talk to local amateur radio operators.

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.arrrl.org/exam\\_sessions/search](http://www.arrrl.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!

### January 6, 2018 Saturday 10:00 AM

St Paul Radio Club

Leon H. Dill (651) 688-9964

Email: [w0coe@arrrl.net](mailto:w0coe@arrrl.net)

Location: Ramsey Co Library Maplewood

3025 Southlawn Dr

Saint Paul MN 55109-1577

Walk-ins allowed, Pre-reg requested

### January 29, 2018 Monday 6:00 PM

Sponsor: SMARTS

Dale A. Blomgren (952) 402-2155

Email: [kdzerob@aol.com](mailto:kdzerob@aol.com)

Location: Carver County Library

7711 Kerber Blvd

Chanhassen MN 55317

Walk-ins allowed, Pre-reg requested

### February 3, 2018 Saturday 10:00 AM

St Paul Radio Club

Leon H. Dill (651) 688-9964

Email: [w0coe@arrrl.net](mailto:w0coe@arrrl.net)

Location: Ramsey Co Library Maplewood

3025 Southlawn Dr

Saint Paul MN 55109-1577

Walk-ins allowed, Pre-reg requested

### February 26, 2018 Monday 6:00 PM

Sponsor: SMARTS

Dale A. Blomgren (952) 402-2155

Email: [kdzerob@aol.com](mailto:kdzerob@aol.com)

Location: Carver County Library

7711 Kerber Blvd

Chanhassen MN 55317

Walk-ins allowed, Pre-reg requested

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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. How many watts are dissipated when a current of 7.0 milliamperes flows through 1.25 kilohms?

- A. Approximately 61 milliwatts
- B. Approximately 61 watts
- C. Approximately 11 milliwatts
- D. Approximately 11 watts

2. What is the turns ratio of a transformer used to match an audio amplifier having a 600-ohm output impedance to a speaker having a 4-ohm impedance?

- A. 12.2 to 1
- B. 24.4 to 1
- C. 150 to 1
- D. 300 to 1

3. Which of the following is one effect of lead inductance in a capacitor used at VHF and above?

- A. Effective capacitance may be reduced
- B. Voltage rating may be reduced
- C. ESR may be reduced
- D. The polarity of the capacitor might become reversed

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

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## November General Pool Answers

1. How many watts of electrical power are used by a 12-VDC light bulb that draws 0.2 amperes?

A. 2.4 watts

2. What is the output PEP from a transmitter if an oscilloscope measures 200 volts peak-to-peak across a 50-ohm dummy load connected to the transmitter output?

B. 100 watts

3. Which of the following is an advantage of an electrolytic capacitor?

C. High capacitance for given volume

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### March 3, 2018 Saturday 10:00 AM

St Paul Radio Club

Leon H. Dill (651) 688-9964

Email: [w0coe@arrrl.net](mailto:w0coe@arrrl.net)

Location: Ramsey Co Library Maplewood

3025 Southlawn Dr

Saint Paul MN 55109-1577

Walk-ins allowed, Pre-reg requested

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## CALIFORNIA BURNING

### ARES Support Evacuation Shelters

#### ARRL Letter

Since its start on December 4, the massive and only partially contained Thomas Fire in southern California by mid-week had consumed nearly 240,000 acres, destroyed more than 700 single-family residences and threatens thousands more, and caused residents in fire-threatened areas to evacuate. Amateur Radio volunteers have been supporting communication for American Red Cross shelter sites in Ventura and Santa Barbara counties, passing traffic between evacuation centers.

One of several fires that have broken out across Southern California, the Thomas Fire is far and away the largest. The Ventura County Auxiliary Communication Service (ACS)/ Amateur Radio Emergency Service (ARES) Net activated on December 5, "as smoke filled the air, and the fire grew to catastrophic proportions," said Ray Smith, KI6VED, who volunteered with his wife Jade, KI6VFQ. Their home was included in an evacuation order.

"The worst night for the crew at Nordhoff came Wednesday, December 6, when the fire surrounded the Town of Ojai on three sides," Smith explained. "The incident commander decided to shelter in place, instead of trying to move 250 refugees out on the only open exit, which was sometimes closed."

Smith told ARRL that several fire vehicles dispatched to Nordhoff High School — a shelter site — taking up positions around the campus, and firefighters stood guard by classrooms, opened to accommodate evacuees sleeping in their cars, some with their pets. "They were warned that if the trucks

sounded their air horns, they were to pick up the [pet] cages and run for shelter on campus immediately," Smith said. "The flames moved east to west along Nordhoff Ridge, with an army of firefighters retreating before them. For a time, the radio operators, like everyone else, did not know what would happen to us," Smith said the fire passed within 2 miles of the shelter location.

Radio amateurs also deployed to the Ventura County Emergency Operations Center (EOC). ARRL Ventura County District Emergency Coordinator Rob Hanson, W6RH, said the ACS/ARES volunteers staffed four evacuation centers, in addition to the EOC.

Santa Barbara Section Manager Jim Fortney, K6IYK, told ARRL that an Amateur Radio digital network (ARDN) MESH



The Ojai Valley Amateur Radio Club begins operations: (L-R) Ken Williams, KI6VDT, is assisted by Alex Elliot, KI6ZPT, as they set up a 2-meter ground plane. An unnamed Red Cross volunteer discusses the situation with Wayne Francis, W6OEU.

## First Thursday Net

### Metro District Hospital Net

The Association of Emergency Radio Organizations (AERO) sponsors a Metro District ARES net held on the first Thursday of each month. The purpose of the net is to provide an opportunity to exercise Dual-band xcvrs installed at hospitals and clinics in the metro area. The net is open to all amateur radio ops and provides the opportunity to participate in a directed net and practice directed net procedures.

Everyone is welcome!

- First Thursday of each month
- 12:30PM (lunch time)
- 146.700 - (PL118.8)



*cont'd from col 1*

video network live-streamed video from several sites. "Loss of primary power has required using the solar power backup capabilities, but, unfortunately, the heavy smoke has made that backup less than fully reliable," he said.

In addition some sites are down because of power outages, and at least one hilltop site was overrun by fire. In addition to power loss to repeater sites, solar panels charging off-grid batteries

have been affected by the huge plumes of smoke blocking the sun.

"The Santa Barbara District ARES organization works closely with Santa Barbara County OEM [and] is prepared to support any requests as the Thomas Fire continues to burn into Santa Barbara County," Fortney told ARRL.

The Fallbrook Amateur Radio Group and other groups in the North County (San Diego) provided communication at some evacuation centers, and the Red Cross activated its own Amateur Radio team.

As of mid-week, FEMA reported, evacuation orders remained in effect for more than 93,000 residents, although shelter occupancy was down to about 300. A boil water advisory has been issued for Ventura and Santa Barbara counties.

*cont'd col. 2*

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## Drone Maker Penalized

The FCC has imposed a \$180,000 civil penalty on a Sarasota, Florida, company that had been marketing noncompliant audio-visual transmitters intended for use on drones in violation of the Commission's Amateur Service and marketing rules. In an Order released on December 19, the FCC explained that Lumenier Holdco LLC (formerly known as FPV Manuals LLC) was advertising and marketing uncertified AV transmitters capable of operating on both amateur and non-amateur frequencies, including bands reserved for federal government use. Some of the transmitters also exceeded the 1 W power limit for Amateur Radio transmitters used on model craft, the FCC said.

"Moreover, entities that rely on amateur frequencies in operating compliant AV transmitters must have an amateur license and otherwise comply with all applicable laws for such operation," the FCC said in the Order. The FCC said that while it generally has not required amateur equipment to be certified if it operates solely on Amateur Radio frequencies, certification is required if a device can operate outside of the ham bands.

Last January, in what it called an "extremely urgent complaint" to the FCC, ARRL targeted the interference potential of a series of audio/video transmitters used on unmanned aircraft and marketed as Amateur Radio equipment. ARRL General Counsel Chris Imlay, W3KD, said those transmitters used frequencies intended for navigational aids, air traffic control radar, air route surveillance radars, and global positioning systems.

In addition to paying a civil penalty, Lumenier, which has admitted to marketing the noncompliant AV transmitters, will enter into a *Consent Decree* with the FCC to settle the enforcement proceeding and terminate the investigation.

The case stemmed from complaints received by the Enforcement Bureau's Spectrum Enforcement Division. "The investigation revealed that some of the AV transmitters marketed by Lumenier were capable of being operated outside of the authorized Amateur Radio Service bands, including on frequencies reserved in whole or in part for federal agencies, but were not certified or otherwise compliant with the rules," the FCC said in its *Order*. "These AV transmitters are considered intentional radiators and must comply with the Commission's Equipment Authorization and Marketing rules."



## Test Your NIMS Knowledge

This month we begin our review of ICS-200. This course is designed to enable personnel to operate efficiently during an incident or event within the Incident Command System (ICS). ICS-200 provides training on and resources for personnel who are likely to assume a supervisory position within the ICS.

Check your recall of the course material with this question.

Typing resources allows managers to make better resource ordering decisions by:

- A. Describing the size, capability, and staffing qualifications of a specific resource
- B. Indicating how the resource can be used when deployed at the incident site
- C. Linking resources needed to execute typical response and recovery activities
- D. Providing detailed information about the best sources for procuring a needed resource

Check next month's ARES Communicator for the solution

## November NIMS Knowledge Solution

Representatives from Assisting or Cooperating Agencies and Organizations coordinate through:

- A. Liaison Officer

## Grid Chase Kick Off

### Anyone Need EN34hr?

Ready, set, go! The ARRL International Grid Chase 2018 gets under way on January 1 UTC (New Year's Eve in US time zones). The objective of the year-long event is to work stations on *any* band (*except* 60 meters) in as many different Maidenhead grid squares as possible, and then upload your log data to



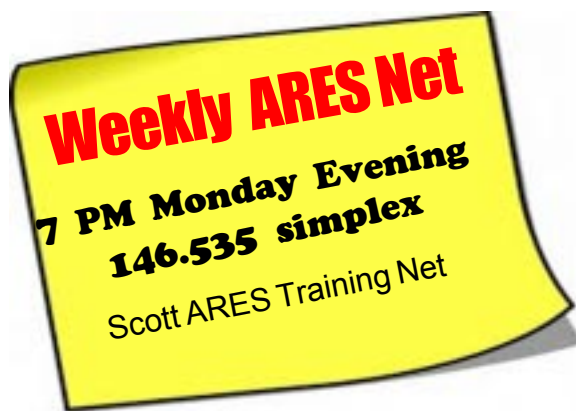
ARRL's Logbook of The World (LoTW). Many hams are familiar with grid squares from the VHF/UHF and satellite realms, and everyone lives in one. An online calculator by David Levine, K2DSL, ([www.levinecentral.com/ham/grid\\_square.php](http://www.levinecentral.com/ham/grid_square.php)) can determine your grid square. Enter a postal address, ZIP code, or a call sign, and the calculator will return the grid square for that location. Each new grid square contact confirmed through LoTW will count toward your monthly total.

*Any* contact you make in 2018 can count for your Chase score; as long as the other operators participate in LoTW, you'll get credit automatically when they upload their logs. This means that contest contacts will also count, as will contacts with special event stations, or other on-air activity that uses LoTW to confirm contacts.

There are no restrictions on modes or bands, as long as they are legal. Satellite contacts are valid for the Chase. The event is open to *all* radio amateurs.

Complete details of the ARRL International Grid Chase 2018 appeared in the December 2017 issue of *QST*. You can check the Grid chase rules here: <http://www.arrl.org/international-grid-chase-2018>

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The Scott ARES net meets every Monday evening at 7:00 PM either on 146.535 simplex or on the first Monday of the month the WBORMK repeater 147.165 (PL 107.2).

The net is in a directed net format and provides the opportunity to practice working in an emergency net style.

There is help available in setting up and using NBEMS digital messaging software and generally a weekly digital message for practice.

Everyone is welcome to check in and contribute two cents worth!



### ARES Breakfast

Saturday  
January 13th 2018  
7:30AM

Hy-Vee Market Grille,  
6150 Egan Dr, Savage, MN

## NECOS Schedule December 2017

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

- | Date         | NECOS                        |
|--------------|------------------------------|
| Dec 25th     | MEARV CHAISEMOS              |
| January 2018 |                              |
| Jan 1st      | N0BHC Bob - First Monday Net |
| Jan 8th      | WA0DGW John                  |
| Jan 15th     | KD0UWZ Chad                  |
| Jan 22nd     | N0BHC Bob                    |
| Jan 29th     | WA0DGW John                  |