



# ARES COMMUNICATOR

## Information for Scott County Amateurs



October, 2019

Accurate, Reliable Emergency Communications for our Community

Volume 19, Number 10

### WARNOR Exercise

Nov. 3<sup>rd</sup>-17<sup>th</sup>, 2019

Experience has shown over and over again that if you don't practice, or exercise, a skill regularly, you become less skilled. With this in mind, let's learn about the quarterly communications exercise, Comex.

The capstone exercise for 2019, DOD COMEX 19-4, will take place from 3 NOV through 17 NOV 2019. One of the principal objectives of this exercise is to achieve a high level of coordination with Amateur Radio, and facilitate Amateur Radio stations reception of a digital 60 meter Department of Defense (DoD) broadcast.

The exercises fulfill a number of objectives: Served agencies at the Federal level are continually assessing their information needs during emergencies. Communications organizations that gather the needed information are developing skills and tactics to collect the information and pass to the agency in a manner most useful to the agency.

The information collection and reporting groups are Military Auxiliary Radio System, MARS, Shared Resources high frequency radio system, SHARES, ARES, and ham radio operators. One factor these groups have in common is that they are capable of functioning independently of landline and cellular networks.

The system functions using the ARES and ham ops as the eyes on the ground gathering local information needed by the Feds to respond in an emergency. This local observation is vital to rapid, effective, timely response.

MARS operators train to develop and refine a digital HF data transmission network. The MARS network can gather local information from Hams on the 60M channels. The information is then consolidated, encrypted, and reported to the Agency in their preferred format via the MARS network.

Let's get down to the nuts and bolts of this Comex from the Ham's view.

*cont'd col. 2*

The place where Hams and MARS meet is the 60M band on Nov 17<sup>th</sup>. The band is broken into five "channels" to make efficient use of the narrow slice of spectrum. The activity may peak on various channels depending on propagation conditions at the specific time of day.

(Currently FEMA Region V stations(Minnesota) will be found on channel V.) (A half-wave dipole cut for the center of the band would be about 43' for each leg.)

60M Band	
Ch #	Dial Freq
I	5.330.5
II	5.346.5
III	5.366.5
IV	5.371.5
V	5.403.5

During an exercise any MARS station will gladly take your local information! Okay, now what is this "information"?

The Served Agency determines the event for the exercise.

Some examples include:

General failure of the electrical power grid throughout North America

General failure of all terrestrial and satellite telecommunications services throughout North America.

Damage to hard drives of all computer equipment connected to the internet.

**WARNOR** *cont'd on page 3*

### ARES Activities

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

**Breakfast Saturday, Nov 9th**

**Digital Monday, Nov 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

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

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## MSUARC

### Turns 100 yrs Old

The Michigan State University Amateur Radio Club (MSUARC) turns 100 this month. The club, which holds the call signs W8MSU and W8SH, celebrated its centennial with a special event station on October 19.

“We’re celebrating a milestone,” said Faculty Advisor Gregory Wierzba. “The club has been a licensed ham radio station for a century. It’s been on the air almost as long as radio licenses have been issued.”

The Michigan State ham club was first licensed in the fall of 1919 as 8YG, later 8XBU, as the commercial broadcast station was separated from the Amateur Radio station. 8YG became WKAR. A few years later, 8XBU became W8SH, when the Federal Radio Commission created a new license category for Amateur Radio. Over the years, club members have been involved in original technological experimentation.

For example, on February 22, 1969, Ralph Taggart, WB8DQT, with the help of Dave Sumner, now K1ZZ and the former CEO of ARRL, made the first US-to-Europe slow-scan TV contact, on 10 meters. For more information about the club’s activities, visit its [Facebook page](#).

BREAK - OVER



## Test Your NIMS Knowledge

This month we begin our review of ICS-800C, An Introduction to National Incident Management System. The goal of IS 800C is to familiarize participants with the National Response Framework and the ways it is applied in actual response situations.

Check your recall of the course material with this question.

1. 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*

## September NIMS Knowledge Solution

1. Select the FALSE statement from below:
  - c. The Framework mandates that the private-sector entities responsible for critical infrastructure and key resources develop and exercise contingency plans.

### Scott County ARES Contacts

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Chaska, MN  
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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 [www.scottares.org/NBEMS.htm](http://www.scottares.org/NBEMS.htm)

Here are the most recent releases as of October 20, 2019.

Software	Version
Fldigi	4.1.08
Flwrap	1.3.4
Flmsg	4.0.14
Flamp	2.2.05

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.



## WARNOR - cont'd from page 1

Failure of electronic equipment attached to antennas, electrical power mains, telephone or CATV lines.

The Served Agencies want information compiled on a County basis so the MARS station will be asking for that along with other local information.

Past exercises have requested a Weather Observation (WXOBS) or County Status (COUNTY). These are pro-forma messages. This means the information will always be in the same order / format. Amateurs should be prepared to report the answers to the topics for their area (County).

The items included in each of these formats is:

### Weather Observation

1. Location - County / Zip
2. Time
3. Wind Dir - in degrees (North = 0)
4. Wind Speed
5. Visibility
6. Cloud Cover
7. Max Temp.
8. Min Temp.
9. Optional: Dewpoint or Bar. Pressure

### County Status

1. Power / Electricity
2. Water
3. Sanitation / Sewer
4. Medical / Hospitals, Clinics
5. Communications
6. Transportation
7. Zip Code

You can listen to the traffic flow to get the idea of the information being collected. The MARS station will be asking for the same info from each Ham contact during the exercise. You can take some notes, jot down your answers and minimize the time for you to report your info.

The nation-wide Comex exercises are held quarterly so watch for COMEX 19-4 coming up soon. When the exercises are announced, there is little information beyond the dates of the exercise. When asked for more pre-exercise info, the Agencies observed that emergencies do not come with a three day notice! The exercises generally run for a couple of days so go ahead and submit a couple of reports. The more reports the better because one goal is to break the MARS network with an ever increasing volume of traffic! Pile on! The Served Agencies also track participation by area which is another reason to check in to make a good showing for Minnesota.

That is all it takes to participate in a Comex! Jump in and have some fun.

BREAK - OVER

## Exercise Antenna

### 60M Skyhook

The 60 meter band isn't well known among amateurs. The narrow slice of spectrum is situated between 75M and 40M, obviously, and is the only band organized into five discrete channels. There is no contesting allowed on 60 meters. This band is intended to function as an emergency communications resource.

60M Band	
Ch #	Dial Freq
I	5.330.5
II	5.346.5
III	5.366.5
IV	5.371.5
V	5.403.5

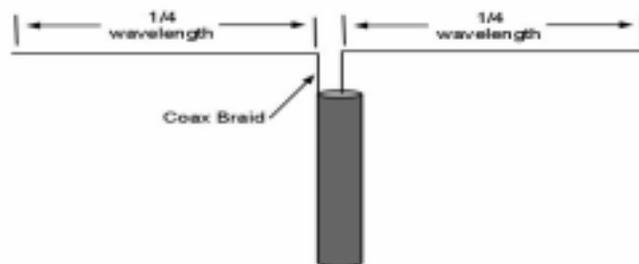
A simple wire antenna will work effectively on this band for regional communications utilizing NVIS propagation. Let's take a look at a half-wave dipole for 60M.

We will target the center of the band with  $\frac{468}{\text{Freq (MHz)}} = 1/2 \text{ wave length (ft)}$  our calculations, 5.36MHz. The starting place is the familiar have-wave formula: Turning the crank on this gives us an overall antenna length of about 87 feet 4 inches. Dividing this in half and we see about 43' 7". (Don't get excited about freely rounding the lengths to the nearest inch or even 3" (0.25ft). The length we calculate will have to be trimmed for best match.)

$$\frac{(\text{Resnt freq}) \times (\text{length})}{(\text{Desrd freq})} = \text{New length}$$

Antennas cut to the formula dimension will generally be too long, the best match will be lower than the design frequency. You may want to start with 43' on each side of your center insulator. (You may want to check out the HDD antenna for a center insulator/support idea: <https://scottares.org/OddKnowledge/HDD%20Antenna.pdf>)

Once you have the wire in the air you can find the frequency with the lowest SWR, the resonant frequency. You can use this formula to zero in on a length for your desired frequency that fits your unique installation.



Adjust the length of each half of the antenna and tune the 60M band for emergency exercise activity. See you in the exercise!

BREAK - OVER

## Homebrew Heroes Award

### 2019 Honoree Announced

Ridgeland, Mississippi— October 13, 2019

Today, the Homebrew Heroes Award Program announced its first annual recipient, Hans Summers, Call Sign G0UPL. This annual award recognizes persons, groups or organizations who help define the frontiers in amateur radio technology through the long-standing tradition of “home brew” construction. This is the first of the annual awards to be given by the new program, housed at the website address, [homebrewheroes.org](http://homebrewheroes.org).

“Our Steering Committee sought the advice of an anonymous Selection Committee who surveyed the landscape of known homebrew designers in amateur radio. There are indeed many very deserving ones! But only one can be chosen each year. The Steering Committee was very pleased to accept this recommendation to make this first Award to Hans Summers G0UPL,” said Frank Howell K4FMH. Other Committee members are Martin Butler M1MRB and Colin Butler M6BOY. All three are affiliated with the ICQ Podcast.



Hans Summers G0UPL Homebrew Hero 2019

The **Hero for 2019**, Hans Summers stated, “To be the honoree for the first of these Homebrew Hero Awards is quite significant for me. I am humbled and, frankly, just blown away by it all. I’ve been sharing my homebrew work through my personal website at [hanssummers.com](http://hanssummers.com) for years now and my company, QRP Labs ([qrp-labs.com](http://qrp-labs.com)), for just a few years. But the latter is my full time work these days. To have these efforts publicly recognized in this way is so personally gratifying!”

Martin Butler, M1MRB from London added, “Hans has continually demonstrated to all with at least one eye open that the traditional homebrew craft and science is alive and well. I am glad that I was not part of the choosing process per se but I am very pleased to accept the recommendation.” “I’ve watched Hans Summers continue to innovate in his design of terrific homebrew kits and products that have made a fantastic impact on the amateur radio market place,” added Colin Butler M6BOY, of County Kilkenny, Ireland.

BREAK - OVER

## Monday Evening 7PM

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!

## Daylight Savings Time

"Fall Behind"  
one hour  
**Sunday  
November 3rd**



## First Thursday Net

### Metro District Hospital Net

The Metro District ARES Hospital net is 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)



## Traveling Power

### Batteries and the Airlines

Pilot Tom Mills, AF4NC, travels frequently to QRP operating and hiking locations around the world. He has completed the Appalachian Trail, the John Muir Trail and summited 11 peaks over 14,000 feet in Colorado. Mills uses an Elecraft KX-1 or KX-3 with a simple MFJ vertical antenna and a 12 V 7 Ah battery. He carries his gear in a Tamerack Expedition 10 camera backpack, which has enough padding, pockets, and external holders for two water bottles. It has plenty of room for accessories including the small antenna tuner and Begali key.

When traveling, some amateurs have simply purchased a new battery at their destination rather than deal with the perceived hassle of transporting a battery. (Using AAA or AA batteries is just not enough power if you are out for a few days).

Mills is often asked what kinds of batteries can be transported on a plane. After research, he has determined that non-spillable wet batteries (absorbed electrolyte) up to 12 V and 100 Watt-hours are permitted to be carried aboard planes. Absorbed electrolyte battery types include gel cells, AGM, etc. Batteries must be kept in a strong outer case with the terminals protected from shorting out with non-conductive caps, tape, etc. Mills says his 7 Ah batteries can be carried in “carry on” or checked baggage.

Passengers are limited to carrying two batteries. Watt/hours are calculated: 12 V times the rated capacity in Ah of the battery. In Mills’ case, his battery is permissible on board: 12 X 7 is 84 watts, less than the 100 Watt-hours maximum permitted.

While the above is a Federal rule, the airlines *can* impose stricter rules. Mills has not had any problems with US air carriers, but a good precaution is to check with the carrier *before* leaving home. When traveling on foreign air carriers, check with them directly, but from what Mills has said, he has not heard of any problems.

Here is an FAA “pack safe” page that presents battery restrictions:

<https://www.faa.gov/hazmat/packsafe/>

See also:

[https://www.faa.gov/about/office\\_org/headquarters\\_offices/ash/ash\\_programs/hazmat/passenger\\_info/media/](https://www.faa.gov/about/office_org/headquarters_offices/ash/ash_programs/hazmat/passenger_info/media/)

[Airline\\_passengers\\_and\\_batteries.pdf](#)



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.

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

1. Which of these connector types is commonly used for RF service at frequencies up to 150 MHz?
  - A. Octal
  - B. RJ-11
  - C. PL-259
  - D. DB-25
2. What is a type SMA connector?
  - A. A large bayonet-type connector usable at power levels in excess of 1 KW
  - B. A small threaded connector suitable for signals up to several GHz
  - C. A connector designed for serial multiple access signals
  - D. A type of push-on connector intended for high-voltage applications
3. Which of the following describes the function of a two input AND gate?
  - A. Output is high when either or both inputs are low
  - B. Output is high only when both inputs are high
  - C. Output is low when either or both inputs are high
  - D. Output is low only when both inputs are high

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



## September General Pool Answers

1. What is a microprocessor?
  - A. A computer on a single integrated circuit
2. Which of the following connectors would be a good choice for a serial data port?
  - D. DE-9
3. What is the peak-inverse-voltage across the rectifiers in a half-wave power supply?
  - C. Equal to the normal output voltage of the power supply

BREAK - OVER



## 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.arrl.org/exam\\_sessions/search](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!

### October 26, 2019 Saturday 8:45 AM

Sponsor: Bloomington Off/Emergency Mgmt  
Daniel J. Royer (952) 888-9756

Email: [dandroyer@gmail.com](mailto:dandroyer@gmail.com)

Location: City Hall-Police Department  
1800 W Old Shakopee Rd  
Bloomington MN 55431

### October 28, 2019 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

### November 02, 2019 Saturday 10:00 AM

St Paul Radio Club  
Leon H. Dill (651) 425-0338

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

Location: St. Paul Public Library  
2105 Wilson Ave  
Sun Ray Branch  
Saint Paul MN 55119-4033

Walk-ins allowed, Pre-reg requested

### November 12, 2019 Tuesday 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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### November 13, 2019 Wednesday 7:00 PM

Sponsor: VARC  
James C. Rice (612) 384-7709  
Email: [jrice@danpatch.org](mailto:jrice@danpatch.org)  
Location: Perkins Restaurant & Bakery  
17387 Kenyon Avenue  
Lakeville MN 55044-4459  
Walk-ins allowed, Pre-reg requested

### November 16, 2019 Saturday 9:00 AM

Sponsor: SEMARC  
Daniel M. Franz (651) 769-0358  
Email: [wd0gup@hotmail.com](mailto:wd0gup@hotmail.com)  
Location: Zion Lutheran Church  
8500 Hillside Trail South  
Cottage Grove MN 55016  
Walk-ins allowed, Pre-reg requested

BREAK - OVER



### ARES Breakfast

Saturday  
November 9th 2019  
7:30AM

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

## NECOS Schedule November 2019

The first Monday or the month the net is held on the WB0RMK repeater, Carver. You will find WB0RMK here: [147.165/765 PL 107.2](http://147.165/765 PL 107.2)

The NECOS script is on the Scott ARES website: [www.scottares.org/Member Resources.htm](http://www.scottares.org/Member Resources.htm)

Date NECOS \_\_\_\_\_

Oct 21<sup>st</sup> - KD0UWZ Chad

Oct 28<sup>th</sup> - N0BHC Bob

November 2019

Nov 4<sup>th</sup> - WA0DGW John First Mon. Net

Nov 11<sup>th</sup> - KD0UWZ Chad

Nov 18<sup>th</sup> - N0BHC Bob First Mon. Net

Nov 25<sup>th</sup> - WA0DGW John

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