



# ARES COMMUNICATOR

## Information for Scott County Amateurs



October, 2018

Accurate, Reliable Emergency Communications for our Community

Volume 18, Number 10

## Ride the Ridges Bike Tour

### Voice & Digi event support

by: Bob Seaquist, W9LSE, La Crosse, Wisconsin

The "Driftless Area" of southern Minnesota and Wisconsin is known for its scenic, hilly, beauty as well as a fine network of farm roads. That makes it perfect for great bicycle rides such as Winona, Minnesota's *Ride The Ridges*. But the same scenic hills and deep valleys also are a communications challenge for members of the Winona Amateur Radio Club (WARC) as they try to provide good communication for the 300 riders and volunteers.

and a VHF repeater 30 miles away near La Crosse, Wisconsin, owned by the Riverland Amateur Radio Club of La Crosse.

APRS was used to track SAG and sweep vehicles so the ride director, who had a APRSISCE/32 <<http://aprsisce.wikidot.com>> driven unit in his vehicle, could keep an eye on ride assets. Messaging was also a possibility with APRS. As a public awareness effort, a large-screen display at the ride's start and end showed friends and family the progress of riders.



Cell coverage was spotty due to the terrain so the club installed two temporary digipeaters to assure constant contact with the APRS units.

It was also a public service according to club chair for the event, Dan Goltz, WK0W. "These are not 'public play with our toys' events. We can bring technology to these events that the sponsoring organizations don't have other access to. We are

Ridges Bike Tour *cont'd on page 2*



Lance Tagliapietra, AD0UT, manages a large-screen display at the ride's start and end so friends and family could observe progress of riders. (photo courtesy W9LSE)

Club members provided communications for the ride, held September 15. Four routes ranging from 23 to 105 miles were patrolled along with seven rest stops. Good voice communication was assured using a UHF repeater near Winona

*cont'd col. 2*

## ARES Activities

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

**Breakfast Saturday, November 10th**

**Digital Monday, November 12th**

### 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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there to enhance the event, and to provide a service, not for our benefit but for theirs.” There were 15 club members involved in the communications exercise.

*Ride The Ridges* coordinator Mike Bernatz gave another perspective to the communication offered by WARC members: “Unless a person works with a radio club member as I do, I know it would be impossible to realize how very, very helpful - and almost necessary - to have the radio operators involved.” Bernatz added, “Yesterday, from start to finish, was ‘a bragging bucks bonanza.’ It hit all the marks: a great [Winona Rotary] club project, a hugely successful event, and a valuable source of funds the club can use to help support its many other projects and programs.”



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### Scott County ARES Contacts

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## Test Your NIMS Knowledge

This month we begin our review of ICS-700, An Introduction to National Incident Management System. This course is designed to enable personnel to operate efficiently during an incident or event within the Incident Command System (ICS). ICS-700 provides an overview of the NIMS structure.

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

## September NIMS Knowledge Solution

1. 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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## 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 Oct. 20 2018.

Software	Version
Fldigi	4.0.18
Flwrap	1.3.4
Flmsg	4.0.7
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.



## HDD Antenna Part 2

A. Nony Moose

Well, now that we have the center insulator ready for some wire, what do we do next? With propagation as it is, we'll put our HDD Antenna in the middle of the 40M band.

The 40M band runs from 7.0 to 7.3 MHz. That would put the center of the band at 7.15MHz. So what?

We'll estimate the length of a wire one-half-wavelength for that frequency using the formula:

$$\frac{468}{\text{Freq (MHz)}} = 1/2 \text{ wave length (ft)}$$

Sliding the beads around on the abacus and you find the length is 65' 6". (Round it to the nearest inch, this isn't rocket science and we are calculating an estimate.) We want to put half of that on each side of our center insulator. That puts 32' 9" on each side. You have to allow extra length for connection to the insulators on each end, so add a foot (6" each end) to the length. Cut each leg at 34' and call it good.

Start with the connections at the center feed point. If you are using insulated wire, strip off about 7" of insulated covering on one end. Insert all but an inch-and-a-half through one of the eyebolts on the side of the PVC pipe. Wrap the free end around the long wire as many times as you want, leaving enough stripped wire to connect the feed line, the end of the antenna wire, and the long wire with a split bolt connector. Check out the picture.



The split bolt connects the long wire to the feedline and secures the wrapped end of the long wire to the center insulator.

This is where you may want to recruit some help to measure off 32' 9" of the long wire starting from the eyebolt connection. Mark the wire at the desired length. A black Sharpie works well - unless you are using black

wire!

You want to attach an end insulator at your mark on the wire. For now, run the wire through the insulator and secure

the free end back on the wire using a split bolt connector. No need to strip and wrap at this point.

Now it is time to get this creation up in the air! You will probably end up with an inverted Vee configuration with the center insulator feed point as the high point and the ends sloping toward the ground.

Now you need to find the frequency that shows the lowest SWR for your antenna. The resonant frequency of your antenna is affected by a number of factors; nearby antennas, close metal objects (gutters, etc), the color of your shirt, and blood type (just kidding on the last two!). The frequency will be below 7.150 MHz. You can use an Antenna Analyzer, or make short tuning transmissions under very low power and record the VSWR at several frequencies.

Let's assume your antenna is resonant (lowest SWR) at 6.95 MHz. That is really low and outside the lower band edge! Time for adjustment. What do we know about the situation?

Resonant frequency 6.95 MHz

Desired frequency 7.15 MHz

Length per leg 32' 9"

We need to raise the resonant point of the antenna by 200 kHz. You will recall that antennas get shorter with increasing frequency. So, how much do we have to lop off each end of our antenna? Plug the info into the following formula and hit "=".

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

$$\frac{6.95 \text{ MHz} \times 32.75'}{7.15 \text{ MHz}} = 31.83'$$

It looks like we need to trim about 11" from each side of the antenna. Shorten the wire attached to the insulators on each end of your antenna. Check for the resonant frequency again and see if another adjustment will be needed to nail your desired operating point.

**HDD Antenna Pt 2** *cont'd on page 4*



## FT8 in '19 RTTY Roundup

### New Mode in the 'Test Jan 5-6

#### ARRL Letter

The ARRL Contest Branch has announced that participants in the 2019 ARRL RTTY Roundup will be permitted to use the new FT8 protocol, which is part of the *WSJT-X* software suite. The RTTY Roundup takes place January 5 - 6, 2019.

The latest version of FT8 is available here:  
[physics.princeton.edu/pulsar/k1jt/wsjsx.html](http://physics.princeton.edu/pulsar/k1jt/wsjsx.html)

"Even though digital modes other than RTTY have been permitted in the RTTY Roundup for 30 years, FT8 was excluded in 2018, because it could not manage the required exchanges," ARRL Contest Branch Manager Bart Jahnke, W9JJ, said. "Through the work of the *WSJT-X* development team, the latest version of FT8 can handle the necessary exchanges that earlier versions were unable to do."

Some limitations will apply to FT8 entrants. Participants must use *WSJT-X* version 2.0 or later to ensure they are able to transmit and receive the exchange messages the event requires. No unattended operation, including QSO/macro automations, will be allowed. Neither is FT8's Fox and Hounds mode; each contact must be carried out in a one-to-one mode, manually accepting/logging each contact.

Because ARRL contest rules regarding spotting assistance prohibit the use of "automated, multi-channel decoders" by Single-Operator entrants, stations using software that decodes *more than one* FT8 signal at a time will have to enter as Single-Operator Unlimited or as Multioperator, just as PSK participants have had to do in the past when using *fldigi* or *DigiPan* software.

Logging software developers have been advised that "DG" will be accepted as a mode abbreviation for all digital QSOs other than RTTY, which will continue to be designated as "RY." This will assist the ARRL Contest Branch in distinguishing RTTY from other digital-mode contacts in order to assess the popularity of each. Logs designating all contacts with "RY" will be accepted, however.

The Contest Branch is encouraging all participants to make the use of FT8 a success in RTTY Roundup by managing frequency selection and being patient with new contest operators. FT8 users also are advised to spread out to help increase decoding and contact success. The FT8 users' groups and online discussions will offer information about alternate carrier frequencies for FT8.

"This is a great opportunity for beginners interested in digital mode contesting," Jahnke said. "If you are a first-time RTTY, FT8, or other digital-mode contester, understand that high power and large antennas are not necessary for successful decodes."

Complete rules are on the ARRL website ([www.arrl.org/rtty-roundup](http://www.arrl.org/rtty-roundup)).

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## HDD Antenna Pt. 2 - cont'd from page 3

You have to remember that the formulas we are using produce good *estimates* for practical application. Life is not the laboratory! The basic formula doesn't account for the velocity factor of the wire used for the antenna or the elevation of the feedpoint or the 'flatness' of the antenna as erected. The velocity factor alone may account for a 5% error. The cumulative effect of the errors results in an antenna that will be too long. Remember it is easier to trim a little rather than add more wire.

Did you figure out why this is called the HDD antenna and why it is the best? You can find most of the material at your local Big Box home improvement center, AKA: Home Depot. The Home Depot Dipole! Why is it the best? Because it is the antenna you use to get on the air and communicate! There might be better designs but you won't know until you get them in the air and communicate. Each time you try another antenna you will gain some knowledge and the cost of the tuition is only some wire. Hmm, how about building some traps and making this a dual-band HDD antenna?

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**Q:** A man was found on the floor dead with a cassette recorder in one hand and a gun in the other. When the police arrive at the scene they pressed play on the recorder. It was the man's voice. He said, "I have nothing else to live for. I can't go on," followed by the sound of a gunshot. After listening, the police knew that this was a murder, not a suicide. How?

## 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)



## Soft Top Antennas

### Non-steel roof solutions

by: John Bloodgood, KD0SFY, E.C. Pikes Peak ARES

More vehicles have non-steel roof panels constructed of fiberglass, aluminum, or carbon fiber. This makes placing a temporary mag-mount antenna on the roof difficult.

We have run into this issue several times in the past when our radio operators were riding in Support And Gear (SAG), sweep, or pace vehicles during special events or riding along with a Jeep Patrol in the mountains.

Recently, I was assisting a neighboring ARES region with a special event and was riding in a new law enforcement vehicle that had an aluminum roof panel. The solution was to use an HT Window Mount Clip from MFJ

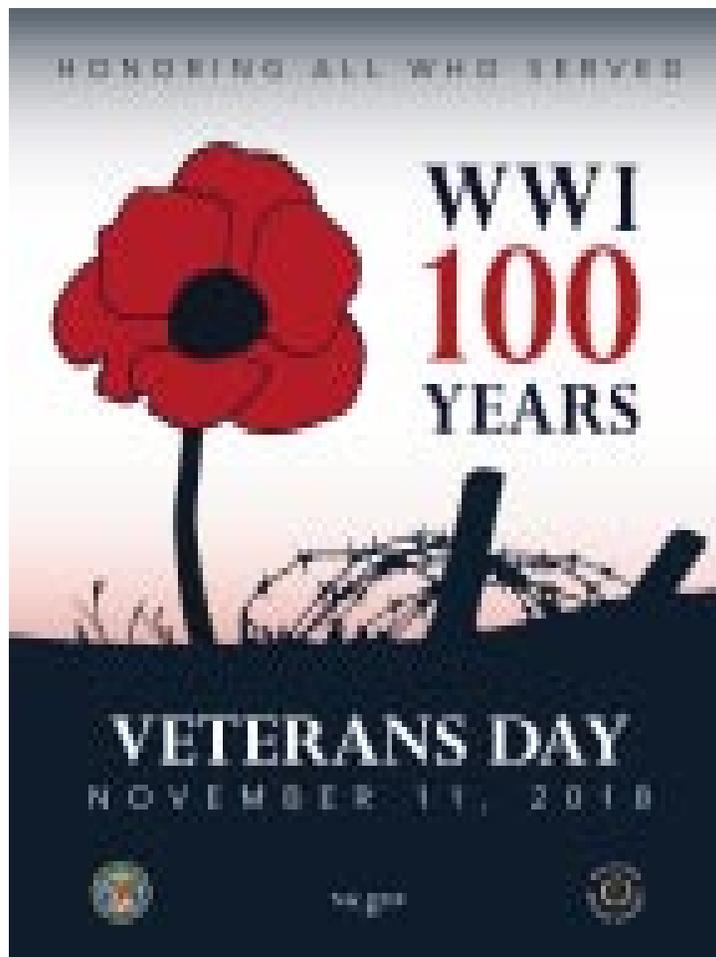
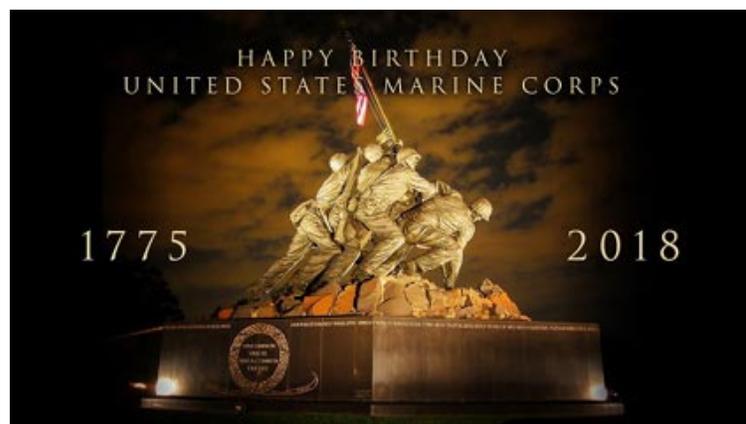
([www.mfjenterprises.com/Product.php?productid=MFJ-310](http://www.mfjenterprises.com/Product.php?productid=MFJ-310)).

They make a BNC, SMA, and female SMA version of this clip so you can easily attach an HT antenna and get it outside of the vehicle. It is small enough to throw in a Go sack if you know you will be operating from a vehicle other than your own.

Operators may find other uses for this mount such as to get an antenna outside of a room with Low-E window treatment, to get some extra height for an HT antenna, etc. It may not have the same ground plane effects of a mag-mount, but it definitely works.



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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

### Missing Apollo 11 Video

<https://youtu.be/SIR9Sdl1bDE>

Wow! You have to see this to believe it! Maybe a couple of times :-)

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## Daylight Savings Time



"Fall Behind"  
one hour  
**Sunday**  
**November 4th**

## ARRL Update, LoTW Issues

### Could Affect ADIF Downloads

#### ARRL Letter

The ARRL website updated its security software on October 15 in order to meet standards required to continue accepting credit cards for internet purchases. ARRL Information Technology Department Manager Mike Keane, K1MK, said that the upgrade should not affect the vast majority of members, beyond a guarantee of better security on the website. It's possible that those using old browsers or running outdated

operating systems could encounter a browser error message when trying to log in or make a purchase on the website. To check if your browser will be affected by this change, you can use the "How's My SSL?" ( [www.howmysssl.com](http://www.howmysssl.com) ) website to advise you of your browser's version.

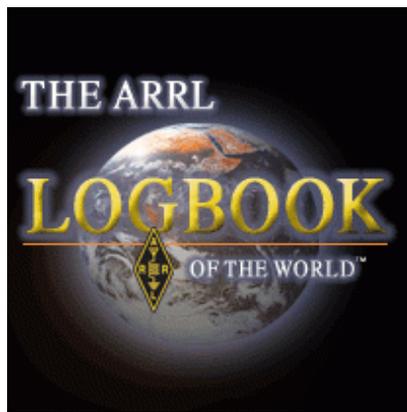
Also affected by the upgrade was the ability of certain logging software running under Windows 7, 8, and 10 to continue downloading ADIF reports from Logbook of The World (LoTW). Uploads via *TQSL* are not affected.

"Affected users should report the issue to their logging application software vendor," Keane said. "In several cases, logging application vendors have already released updates of their products that resolve the problem."

Keane said the security update and any possible disruption in service are for the sake of progress, "and represent the reasonable efforts that our members expect from us in order to secure their private information." The updates completed this week were mandated security-related changes that allow ARRL to continue to accept credit cards for purchases and memberships via the website. "These security changes are no different than what is required by other organizations and vendors performing online transactions," Keane noted.

The updates were carried out in order to comply with PCI Security Standards Council requirements. Among the browsers that are safe to continue using are Google Chrome 30 or higher (version 40 or higher recommended), Mozilla Firefox 27 or higher (version 34 or higher recommended), Microsoft Internet Explorer 11 or higher, Apple Safari 7 or higher (Safari 5 or higher on mobile), all versions of Microsoft Edge, and Opera 17 or higher (version 27 or higher recommended).

More info about LoTW can be found here: [www.arrl.org/logbook-of-the-world](http://www.arrl.org/logbook-of-the-world)



## Take a Dip in the General Pool

Time to test your knowledge of the information covered by the General Class license exam. Each month we'll take a look at a selection from the question pool.

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

1. What are two major ratings that must not be exceeded for silicon diode rectifiers?
  - A. Peak inverse voltage; average forward current
  - B. Average power; average voltage
  - C. Capacitive reactance; avalanche voltage
  - D. Peak load impedance; peak voltage
2. What is the output PEP from a transmitter if an oscilloscope measures 500 volts peak-to-peak across a 50-ohm resistor connected to the transmitter output?
  - A. 8.75 watts
  - B. 625 watts
  - C. 2500 watts
  - D. 5000 watts
3. What are the stable operating points for a bipolar transistor used as a switch in a logic circuit?
  - A. Its saturation and cut-off regions
  - B. Its active region (between the cut-off and saturation regions)
  - C. Its peak and valley current points

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

BREAK - OVER



If the dead man had killed himself, he wouldn't have been able to press the reverse button on the cassette recorder.

## September General Pool Answers

1. What is the inductance of a 20 millihenry inductor in series with a 50 millihenry inductor?
  - C. 70 millihenrys
2. Which of the following components should be added to a capacitor to increase the capacitance?
  - C. A capacitor in parallel
3. What is an effect of inter-turn capacitance in an inductor?
  - B. The inductor may become self resonant at some frequencies

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## 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 27, 2018 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 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  
Chanhasen MN 55317  
Walk-ins allowed, Pre-reg requested

### November 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

### November 14, 2018 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

Cont'd from col. 1

### November 17, 2018 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

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## 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!



### ARES Breakfast

Saturday  
November 10th 2018  
7:30AM

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

## NECOS Schedule October 2018

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](http://147.165/765 PL 107.2)

Date      NECOS \_\_\_\_\_

Oct 29th - WA0DGW John  
November 2018

Nov 5th KD0UWZ Chad First Mon. Net

Nov 12th - N0BHC Bob

Nov 19th - WA0DGW John

Nov 26th - KD0UWZ Chad