



**ARRL**

Affiliated

[www.arrl.org](http://www.arrl.org)



**SEMARC**

**WØCGM**

[www.semarc.org](http://www.semarc.org)



MODEL MFJ-948

## THE SEMARC TELEGRAPH July 2022

### PAGE

### CONTENTS:

2

Just For Fun

Radio Astronomy

3

Stillwater Amateur Radio Association

3

CLUB APPAREL

3

May VE Session Report

3

Planning Calendar

4

Amateur Radio Operators Recognition Days

5

FCC Legacy CORES being Retired July 15, 2022

7

Fourth Tuesday

7

METRO SKYWARN

7

Noise & db Gain / Loss

8

Winlink Training Net

8

Welcome to the Washington County ARES

8

2022 SEMARC OPERATING EVENTS

9

AERO Course Catalog

12

Membership Meetings

12

Club Apparel

13

THIS MONTHS WORLDWIDE CONTESTS



**ARRL**  
Affiliated

[www.arrl.org](http://www.arrl.org)



**SEMARC**  
WØCGM

[www.semarc.org](http://www.semarc.org)

### FIRESIDE CHAT

The Fireside Chat is held on the first and third Tuesday of the month. This month it is on Tuesday, July 5<sup>th</sup> and Tuesday, July 19<sup>th</sup> at 7:00 p.m. It will be a Webex virtual meeting at:

<https://richardlroberts.my.webex.com/meet/rrobert>

The format is open and will be without an agenda or focus. It will be a great opportunity for both new and experienced hams to ask questions and share experiences. Please join us!

### SEMARC BOARD MEETING

Our next meeting for the board is July 12<sup>th</sup>. We plan to have a virtual meeting. Joe Hibberd will send out an email to all members the day before with instructions on how to join in on the meeting.

### REGULAR MEMBER MEETING

Our next regular member meeting is July 26<sup>th</sup>. No program has been planned at this time.

### Just For Fun

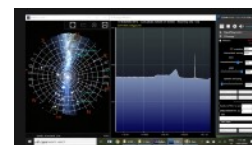
For something fun and different how about considering  
**Radio Astronomy**

#### [Ham Radio Astronomy for Beginners](#)

Amateur or [ham radio astronomy](#) is when hobbyists study the sky by listening to sounds coming from objects from the heavens.

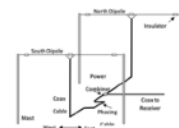
#### [Cheap and Easy Hydrogen Line Radio Astronomy](#)

Getting amateur radio operators into the Radio Astronomy hobby cheaply and easily. This article deals with creating a backyard hydrogen line radio telescope for less than US\$200.



#### [Radio Jove Project](#)

Radio JOVE provides the settings to optimize the SDRplay RSP1A for short wave radio astronomy; however, other receivers can be used successfully for radio astronomy.



### Did you know ...

The SEMARC webpage contains links to many websites that are helpful to new hams and experienced ones.

Visit [www.semarc.org/P10\\_UL.htm](http://www.semarc.org/P10_UL.htm).

### NOTICE:

146.985 Repeater is out of service for repair and users should switch to the 147.18 South with 74.4 tone or 147.18 north with 100 tone **till further notice**. Our Wednesday will be held there.

Dick, NØUC

### South East Metro Amateur Radio Club

Dick Roberts, NØUC

1655 - 68th Street West

Inver Grove Heights, MN 55077-2222

651-208-0889

Cont. on page 3

### MEMBER MEETING PROGRAM SURVEY

The Board is always looking for program ideas for the member meetings. What would you like to see for programs this year? Please send your ideas to Dick Roberts [n0uc@comcast.net](mailto:n0uc@comcast.net) and he will bring your ideas to the Board meeting.

### ARES REPORT

Just a reminder that our ARES repeater frequencies are 147.180, PL 74.4 in Newport, or PL 100 in Forest Lake.

### INFORMAL CW ROUND-TABLE NET

Every Wednesday evening at 1900 hours on 28.110 MHz

### WEDNESDAY NIGHT 2M NET

Our club holds a 2-meter net every Wednesday at 8:00 p.m. It is an informal, but controlled, net on the 146.985 repeater. We are in the need for several alternate Net Control Stations who can fill in when one of the scheduled NCS is not available.

If you are interested, please contact:

Dick Roberts at  
[n0uc@comcast.net](mailto:n0uc@comcast.net)

### THE DIGITAL CORNER

Digital Net follows SEMARC net on Wed pm.

Go to [www.w1hkj.com](http://www.w1hkj.com) for software & help.

Fldigi v. 3.23.09 Flmsg v. 2.0.17  
Flamp v. 2.1.03 Flwrap v. 1.3.4

Meet on 146.985 and QSY to 144.950.

Mode is BPSK125. Other modes possible.

Sign up with N0UC  
[n0uc@comcast.net](mailto:n0uc@comcast.net) for net bulletins & help.

## Stillwater Amateur Radio Association

SARA has graciously welcomed SEMARC members to attend their events, and more...

### [Round Robin Ragchew on the SARA repeater](#)

147.060 - info to access the repeater is here [W0JH Repeater](#)

Tuesday's - 7:00 pm - 8:00 pm      Wednesdays - 9:00 pm - 9:30 pm

### [Social/Special Meetings](#)

Thursday Evenings: Social and informal "Eyeball QSO"  
sessions from 6PM to 8PM

## Club Apparel

You have seen some members wearing SEMARC caps, shirts and jackets. If you would like to order one for yourself, visit our website at [ApparelOrderForm.pdf \(semarc.org\)](#), then contact our order coordinator Dan Franz at [wd0gup@hotmail.com](mailto:wd0gup@hotmail.com). Dan will accept your order and payment, then order the item(s) from our vendor Advanced Sportswear in Newport.

If you have questions, contact Joe Hibberd at [joehibberd11@gmail.com](mailto:joehibberd11@gmail.com).

## May VE Session Report

No report.

Any questions call the club hot line at 651-769-0358 or email [wd0gup@hotmail.com](mailto:wd0gup@hotmail.com).

VE News, we will be normalizing VE operations as it relates to COVID. For the time being I will still preregister candidates and VE's. That means no walk-ins but we also will not have head count restrictions. I also have incorporated a self-survey and ask anyone that answers yes to any of the questions to call me.

Thanks to all VE's that helped us get through this tough COVID time.

Dan Franz, WD0GUP

## Planning Calendar

July 12 <sup>th</sup> (T) Board Meeting	August 9 <sup>th</sup> (T) Board Meeting
July 16 <sup>th</sup> (S) VE Session & B'fast	August 20 <sup>th</sup> (S) VE Session & B'fast
July 26 <sup>th</sup> (T) Club Meeting	August 30 <sup>th</sup> (T) Club Meeting

### SEMARC VE Sessions

VE exam sessions are held every 3rd Saturday. The next VE session is on July 16<sup>th</sup>. Exams are held at 9:00 am at Zion Lutheran Church. Call 651-769-0358 for information, to register or to arrange for special needs. Information is posted on the webpages also.



# Minnesota Governor Tim Walz proclaims June 25 & June 26 as

## Amateur Radio Operators Recognition Days



STATE of MINNESOTA

# Proclamation

WHEREAS: During times of national, state, and local emergencies, and for community and public events, amateur radio operators provide communication resources at no cost to people in Minnesota; and

WHEREAS: Amateur radio organizations, including Radio Amateur Civil Emergency Service (RACES) and Amateur Radio Emergency Service (ARES), are trained to provide effective emergency communication and support; and

WHEREAS: Amateur operators trained in spotting and reporting severe weather to assist the National Weather Service and the State of Minnesota through the SKYWARN program; and

WHEREAS: Amateur radio clubs throughout Minnesota provide courses of instruction and assist elementary and high school students on amateur radio operations, enhancing student interest in science, geography, and physics, and providing opportunities for students to become licensed amateur radio programs.

NOW, THEREFORE, I, TIM WALZ, Governor of Minnesota, do hereby proclaim June 25 and 26, 2022, as:

## AMATEUR RADIO OPERATORS RECOGNITION DAYS

in the State of Minnesota.

IN WITNESS WHEREOF, I have hereunto set my hand and caused the Great Seal of the State of Minnesota to be affixed at the State Capitol this 22<sup>nd</sup> day of June.

GOVERNOR



SECRETARY OF STATE

---

## FCC Updating to new CORES2

---



# PUBLIC NOTICE

Federal Communications Commission  
45 L Street NE  
Washington, DC 20554

News Media Information 202-418-0500  
Internet: [www.fcc.gov](http://www.fcc.gov)  
TTY: 888-835-5322

DA 22-508

Released: May 27, 2022

### OFFICE OF MANAGING DIRECTOR WILL DECOMMISSION LEGACY COMMISSION REGISTRATION SYSTEM ON JULY 15, 2022

#### MD Docket No. 10-234

The Office of Managing Director will decommission the Federal Communications Commission (FCC or Commission) Legacy Commission Registration System (CORES) (Legacy CORES) on July 15, 2022.<sup>1</sup> The current version of CORES (called CORES2 herein and found at <https://apps.fcc.gov/cores/userLogin.do>) has been in use since 2016 and should be used to register for or maintain an FCC Registration Number (FRN).<sup>2</sup> Using CORES2 for FRN-related transactions requires FRN registrants to set up an account with a unique username (by providing a valid e-mail address)<sup>3</sup> and password to associate with their existing or new FRN(s).<sup>4</sup> The FRN registrant's email address is then established in the system as their username. **Users already registered in CORES2 can continue to manage their FRNs in CORES2 without change. No additional actions are required for CORES2 users.**

Legacy CORES will be retired on July 15, 2022 at 6 pm.<sup>5</sup> Once Legacy CORES is retired, users will be unable to make any changes to their FRNs in that system, including resetting their passwords. Users should be aware that they will need to register in CORES2 to gain online access and manage their FRN(s). See below for help with FRN registration in CORES2.

---

<sup>1</sup> Commission rules require an FCC Registration Number (FRN) to be supplied by anyone doing business with the Commission. 47 CFR. § 1.8002. Any business or individual wishing to conduct business with the Commission must register through CORES to obtain an FRN. 47 CFR. § 1.8001. The FRN is a 10-digit number used to identify the registrant's business dealings with the Commission. *Id.*

<sup>2</sup> CORES2 allows users to (1) Create FRNs; (2) Modify FRNs; (3) Associate FRNs to different user accounts; (4) View FRN financial data; and (5) Make payments. See also <https://apps.fcc.gov/cores/userLogin.do>.

<sup>3</sup> To finalize the decommissioning of Legacy CORES, the Commission updated 47 CFR 1.8002(b) to require registrants to provide a valid e-mail address when registering for an FRN through CORES. *Amendment of Part 1 of the Commission's Rules, Concerning Practice and Procedure, Amendment of CORES Registration System*, MD Docket No. 10-234, Report and Order, 36 FCC Red 10773 (2021) (CORES Order); Federal Communications Commission, Practice and Procedure, CORES Registration System, 86 Fed. Reg. 59858 (Oct. 29, 2021).

<sup>4</sup> Before accessing CORES2, users must establish an FCC username account in the FCC User Registration System by providing a valid e-mail address and creating a password. See <https://apps2.fcc.gov/fccUserReg/pages/createAccount.htm>.

<sup>5</sup> The Commission directed the Office of Managing Director to announce the end date for access to Legacy CORES. CORES Order, para.11.

*Recommended steps prior to July 15<sup>th</sup>* To help prepare for any upcoming Commission business, Legacy CORES users are encouraged to establish an FCC username account in the FCC User Registration System, and then to access CORES2 to associate their FRN(s) with their username. Legacy CORES should not be used for creating new FRNs even though it will remain open through July 15, 2022.

The Commission is in the process of transitioning its various online systems to CORES2. Certain Commission systems already require access using a username and password that have been registered in the FCC User Registration System and associated with FRN(s) in CORES2. Other Commission systems will continue to allow access using the FRN and password established in the Legacy CORES. Users may also log in to these systems using an FRN and username password, established in CORES2. Over time, Commission systems that have not yet transitioned will be updated to require a username and password obtained through the FCC User Registration System and may redirect users to use CORES2 to associate their FRN(s) with a valid FCC username. Future system transitions will be handled at different timeframes through separate notifications.<sup>6</sup>

*Payment and Payment-Related Transactions* Users that need to pay annual regulatory fees, view Red Light status details, pay Universal Licensing System (ULS) fees, and complete payments for all FCC filings and fees will be required to use a username and password with an FRN associated with a username in CORES2 to authorize these transactions according to the following timetable:<sup>7</sup>

Payment Transaction	Date Access Will Transition to CORES2 Username and Password
Annual Regulatory Fees	July 15, 2022
Red Light Status Detail	August 5, 2022
Universal Licensing System Payments (ULS Pay Fees Link utilized by Electronic Batch Filing filers)	August 26, 2022
Application Fee Payments (including completing payments on any remittances awaiting payment completion for all FCC filings and fees. This includes ULS Payments from individual filers)	November 18, 2022

*For Help with Registering in CORES2* CORES2 is available at <https://apps.fcc.gov/cores/userLogin.do>. Before registering for or managing an FRN in CORES2, users that have not established their username and password must first create an account by entering their username (i.e., e-mail address) and a password on the FCC User Registration System webpage: <https://apps2.fcc.gov/fccUserReg/pages/createAccount.htm>. Detailed information about the impact of decommissioning Legacy CORES and the transition to CORES2 can be found at: <https://apps.fcc.gov/cores/html/legacyCoresDecommission.html>. For additional support, please visit the [FCC Registration Help Pages](#). You can also call the FCC Licensing Hotline, (877) 480-3201 Option 1, or visit the [e-support](#) page.

<sup>6</sup> CORES Order, para. 13.

<sup>7</sup> FCC payments and related transactions can be made at <https://apps.fcc.gov/cores/paymentFrnLogin.do>.

---

## Fourth Tuesday

---

This is a reminder of **Fourth Tuesday** -- a *brand new* SEMARC event held when a month has 5 or more (hi, hi) Tuesdays.

Fourth Tuesdays are informative sessions on a topic of interest to both new and experienced hams. Last months topic was "Your First QSO" presented by Dick Roberts NØUC.

They are held at 1900 hours at [Cottage Grove Fire Station #3](#) 7500 75th St. S. in "old" Cottage Grove. This months meeting is on the 24<sup>th</sup>.

CUL and 73,

Joe Hibberd W3QLC - SEMARC Secretary

---

---

## METRO SKYWARN

---

### Metro Skywarn Weekly Radio Check-In

**Wednesdays 8:30pm – 8:45pm**

Join Metro Skywarn for our weekly amateur radio check-in at **8:30 p.m. every Wednesday** during our active Net Control Station rotation schedule (thru October 16th).

These check-ins will be done on the **146.700- PL 127.3** WC0HC Downtown Minneapolis repeater.

This is your opportunity to **test your equipment** out outside of an active severe weather net. You can also ask the net control operators questions and just say hello!

---

---

## Noise & db Gain / Loss

---

I found this video the other day on the Waters Stanton YouTube channel. It is a review of the \$200 Xiegu GNR 1 AF noise reduction unit. Seems to work very well. Noise reduction is one thing my TS-120s is lacking that would make it more enjoyable to use. Have to dig that out again one day. Just thought I'd share this since it could also be of value on radios other than ham because it is AF.

Here is another video on the Waters Stanton YouTube channel describing how db vs power works. I know most of us understand this but someone new to the hobby may not have a good idea of how db works. This video helps to clear that up.

It explains the difference between 0db gain, 6db gain and 10db gain.

And, a chart showing the difference between amounts of gain per db. <https://www.hamuniverse.com/erpchart.html>



Click image to view video



## Winlink Training Net

Starting on April 6, 2022 we will be holding a Winlink training net after our regular Wednesday two meter activity net for persons interested in using the Winlink programs and for ARES members to improve their proficiency in using the tool during emergency communication events. This net will start after completion of the activity and last about an hour.

The net will start on the 147.18 repeater to collect a roster and setup the instructions for the training and practice. We will then move to the MN ARES digital frequency to do the hands on portion of the net. We will be concentrating on point to point communication. Since during most communication emergencies the loss of the internet is very likely the need for P2P is high. During a communications emergency it is all hands on deck so you don't need to be an ARES member to help out. It is easier to learn now than during the emergency. We will be learning how to move traffic via P2P to a local destination or to a gateway station that has internet connectivity. The use of forms and message content is for a different training segment for another time not this net.

Before net time make yourself acquainted with winlink and winlink express. Take time to view the youtube links and install the needed software. We will be using VARA FM during the hands on portion of the nets. The links are provided below. There will be a number of questions that will pop up and we will work through those as the nets go along. As these are training nets hopefully your questions will get answers. As you have heard many times practice make perfection or as us older fellows say "practice helps us remember". If you have questions on ARES send to John Regan [jeregan3@gmail.com](mailto:jeregan3@gmail.com) about the net [n0uc@comcast.net](mailto:n0uc@comcast.net)

CU on the nets, 73

Dick N0UC

## Washington County ARES

Welcome to the Washington County ARES website (ARES Unit 163MN01).... Face-to-face ARES activities are in suspension until further notice due to Covid-19.... Check the two ARES Digital Nets in Minnesota and participate; Info under the [Events tab](#) gives details... 60 Meter Interoperability exercises scheduled = see events tab and participate with us!!....The 147.180 Repeater is running at the Newport site (PL 74.4) and Forest Lake site(PL 100); we use this repeater for drills and activations. This covers the entire county and is in our WashCoARES Emergency Communications Plan... Support our Amateur Radio Clubs through your participation.

John Regan. KAØYHR

## 2022 SEMARC OPERATING EVENTS

SEMARC is planning the following operating events for 2022. Anyone willing to chair one of these events, please email Dave Larson, KEØHAL, at [daveanddanita@usfamily.net](mailto:daveanddanita@usfamily.net). **Help is needed with this many events.** There are always some members willing to assist with set up and take down.

DATE	DESCRIPTION	TIME	LOCATION	CHAIR
7/9/2022	FRESH AIR OPERATING EVENT	10AM TO 4PM	CG FIRE STATION #3	KEØHAL
8/27/2022	POTA EVENT	10AM TO 4PM	JAYCEE PARK HASTINGS	TBD
9/10/2022	US AIR MAIL COMMEMORATION SPECIAL EVENT KØA	10AM TO 4PM	MOUNDS PARK OR CG FIRE	TBD
10/8/2022	FOX HUNT	10AM TO 2PM	ZION LUTHERAN PARKING LOT	WDØGUP





# Course Catalog



## AERO Course Progression

Course Title	Pre-requisites
<b>Field Level Courses</b>	
AERO 100: Basic Radio Operations	None
AERO 101: Introduction to Emergency Communications	AERO 100 is suggested, ICS 100 & 700
AERO 102: Advanced Emergency Communications	AERO 101, ICS 200 & 800
AERO 103: Data Communications (In development)	AERO 102
AERO 111: Communications for CERTS (Under consideration)	
AERO 112: Basic Communications for Adjunct Emergency Teams (Under consideration)	
<b>Net Control Courses</b>	
AERO 200: Fundamentals of Net Control	AERO 102
AERO 201: Introduction to EmComm Net Control	AERO 200
AERO 202: Advanced EmComm Net Control	AERO 201
<b>EmComm Management Courses</b>	
AERO 301: (AuxComm) Specialist	AERO 202 and AuxComm
AERO 302: (AuxComm) Manager	AERO 301
AERO 303:	AERO 302

AuxComm will be official in title when the State adds it to the PTB.

8

### AERO 100: Basic Radio Operations

This is a course available to and taught by clubs. It is free for the asking.

#### Course Objectives

- Identify radio features and controls
- Use correct radio operating procedures
  - Proper radio etiquette
  - Procedural words and phonetics
- Program frequencies and access tones
- Understand simplex vs duplex modes

## **AERO 101: Introduction to Emergency Communications for the Amateur Radio Operator**

### Course Objectives

- Describe the roles of amateur radio operators in emergency communications
- Be able to describe the role of amateur radio during emergency communications and list potential agencies that may be served
- Be able to describe appropriate etiquette and professional interactions during emergency communications operations
- Be able to describe what a “net” is and how they are used
- Be able to describe basic net operations
- Be able to demonstrate proper basic radio communications skills
- Be able to describe the purpose, use, and benefits of the Incident Command System
- Be able to list and demonstrate how to complete pertinent ICS forms used in radio communications

## **AERO 102: Advance Emergency Communications for the Amateur Radio Operator**

### Course Objectives

- Communicate information effectively to incident personnel
- Provide effective communications support during routine or non-emergency situations
- Provide effective communications support during emergency situation
- Demonstrate familiarity with basic COMU (Communications Unit) functions capabilities
- Demonstrate proper application of communications policies and procedures
- Demonstrate proper use of communications equipment

## **AERO 200: Fundamentals of Net Control**

### Course Objectives

- Understand the notion of a “served agency”
- Understand the role of the net control station
- Understand the operation of a “directed net”
- Understand net control operator responsibilities

## **AERO 201: Introduction to Net Control**

### Course Objectives

- Review of ‘EmComm’
- Review of net operations
- Review of ICS
- Review the role of the net control operator
- Be able to describe net control operations
- Explain the role of the net control operator
- Become familiar with net control operations
- Learn to listen for call signs – amateur radio and tactical
- Learn to run and EmComm net – regardless of radio or radio system

## **AERO 202: Advanced EmComm Net Control**

### Course Objectives

- Given a scenario, develop and potential ICS structure
- Determine the resources available for communications
- Determine and set up various incident nets
- Run a simulated net

AERO 300 Series are in development and will be available for those with AuxComm training.

---

## Membership meetings are held in Cottage Grove at the

---

**Zion Lutheran Church 8500 Hillside Trail South**

We meet on the LAST Tuesday of the month at 7:00 p.m. **Except December & January**

Watch for updates and more information in the Sunday Bulletin email message.

New members, especially those who passed one of our VE exam sessions, are encouraged to attend so that we can meet you in person.

We hope to see you there.

(As is our tradition anyone with a birthday in the meeting month is asked to bring cookies or other snack to share.)

---

---

## CLUB APPAREL

---

You have seen some members wearing SEMARC caps, shirts and jackets. If you would like to order one for yourself, visit our website at [ApparelOrderForm.pdf \(semarc.org\)](#), then contact our order coordinator Dan Franz at [wd0gup@hotmail.com](mailto:wd0gup@hotmail.com). Dan will accept your order and payment, then order the item(s) from our vendor Advanced Sportswear in Newport.

If you have questions, contact **Joe Hibberd** at [joehibberd11@gmail.com](mailto:joehibberd11@gmail.com).

---

### **REMEMBER**

**Members** can advertise items for sale AND items you are looking for.

The fee for placing ads is a membership in the SEMARC club, a small price to pay for access to all the club benefits and the many club members and their friends in other clubs that may be looking for just what you have to offer.

Also we can use articles in any aspect of Ham Radio that is of interest to you that may benefit the rest of us.

---

Help your XYL, children, grandchildren, friends and neighbors get their Technician license.

[https://k0ltc.org/tech\\_license\\_class/](https://k0ltc.org/tech_license_class/)

---

---

### **New Club members can:**

Keep in touch, post amateur related articles, sell amateur related items or asked for help and/or questions of other members.

This is a private network for our member's only and does not allow incoming or outgoing traffic to other networks.

Members will be getting an email requesting them to join and they can opt in or out.

Dick NØUC





## THIS MONTHS WORLDWIDE CONTESTS

Thank you to [Bruce Horn WA7BNM](#) for the sharing of his calendar

<https://www.contestcalendar.com/>



Click the [±](#) link go to the specific contest info page

<a href="#">±</a> RAC Canada Day Contest	0000Z-2359Z, Jul 1
<a href="#">±</a> QRP Fox Hunt	0100Z-0230Z, Jul 1
<a href="#">±</a> NCCC RTTY Sprint	0145Z-0215Z, Jul 1
<a href="#">±</a> NCCC Sprint	0230Z-0300Z, Jul 1
<a href="#">±</a> K1USN Slow Speed Test	2000Z-2100Z, Jul 1
<a href="#">±</a> Venezuelan Ind. Day Contest	0000Z-2359Z, Jul 2
<a href="#">±</a> NZART Memorial Contest	0800Z-1100Z, Jul 2 and 0800Z-1100Z, Jul 3
<a href="#">±</a> DL-DX RTTY Contest	<b>Cancelled for 2022</b>
<a href="#">±</a> TA VHF/UHF Contest	1200Z, Jul 2 to 1200Z, Jul 3
<a href="#">±</a> Marconi Memorial HF Contest	1400Z, Jul 2 to 1400Z, Jul 3
<a href="#">±</a> Original QRP Contest	1500Z, Jul 2 to 1500Z, Jul 3
<a href="#">±</a> PODXS 070 Club 40m Firecracker Sprint	2000Z, Jul 2 to 2000Z, Jul 3
<a href="#">±</a> K1USN Slow Speed Test	0000Z-0100Z, Jul 4
<a href="#">±</a> ICWC Medium Speed Test	1300Z-1400Z, Jul 4
<a href="#">±</a> OK1WC Memorial	1630Z-1729Z, Jul 4
<a href="#">±</a> ICWC Medium Speed Test	1900Z-2000Z, Jul 4
<a href="#">±</a> RSGB 80m Club Championship, CW	1900Z-2030Z, Jul 4
<a href="#">±</a> Worldwide Sideband Activity Contest	0100Z-0159Z, Jul 5
<a href="#">±</a> ARS Spartan Sprint	0100Z-0300Z, Jul 5
<a href="#">±</a> ICWC Medium Speed Test	0300Z-0400Z, Jul 5
<a href="#">±</a> RTTYOPS Weekspint	1700Z-1900Z, Jul 5
<a href="#">±</a> Phone Weekly Test	0230Z-0300Z, Jul 6
<a href="#">±</a> A1Club AWT	1200Z-1300Z, Jul 6
<a href="#">±</a> CWops Test	1300Z-1400Z, Jul 6
<a href="#">±</a> VHF-UHF FT8 Activity Contest	1700Z-2000Z, Jul 6
<a href="#">±</a> Mini-Test 40	1700Z-1759Z, Jul 6
<a href="#">±</a> Mini-Test 80	1800Z-1859Z, Jul 6
<a href="#">±</a> CWops Test	1900Z-2000Z, Jul 6



## THIS MONTHS WORLDWIDE CONTESTS



Click the [±](#) link go to the specific contest info page

<a href="#">±</a> Walk for the Bacon QRP Contest	0000Z-0100Z, Jul 7 and 0200Z-0300Z, Jul 8
<a href="#">±</a> CWops Test	0300Z-0400Z, Jul 7
<a href="#">±</a> CWops Test	0700Z-0800Z, Jul 7
<a href="#">±</a> RTTYOPS Weeksprint	1700Z-1900Z, Jul 7
<a href="#">±</a> NRAU 10m Activity Contest	1700Z-1800Z, Jul 7 (CW) and 1800Z-1900Z, Jul 7 (SSB) and 1900Z-2000Z, Jul 7 (FM) and 2000Z-2100Z, Jul 7 (Dig)
<a href="#">±</a> EACW Meeting	1900Z-2000Z, Jul 7
<a href="#">±</a> SKCC Sprint Europe	1900Z-2100Z, Jul 7
<a href="#">±</a> QRP Fox Hunt	0100Z-0230Z, Jul 8
<a href="#">±</a> NCCC RTTY Sprint	0145Z-0215Z, Jul 8
<a href="#">±</a> NCCC Sprint	0230Z-0300Z, Jul 8
<a href="#">±</a> K1USN Slow Speed Test	2000Z-2100Z, Jul 8
<a href="#">±</a> IARU HF World Championship	1200Z, Jul 9 to 1200Z, Jul 10
<a href="#">±</a> SKCC Weekend Sprintathon	1200Z, Jul 9 to 2400Z, Jul 10
<a href="#">±</a> QRP ARCI Summer Homebrew Sprint	2000Z-2300Z, Jul 10
<a href="#">±</a> K1USN Slow Speed Test	0000Z-0100Z, Jul 11
<a href="#">±</a> 4 States QRP Group Second Sunday Sprint	0000Z-0200Z, Jul 11
<a href="#">±</a> ICWC Medium Speed Test	1300Z-1400Z, Jul 11
<a href="#">±</a> OK1WC Memorial	1630Z-1729Z, Jul 11
<a href="#">±</a> ICWC Medium Speed Test	1900Z-2000Z, Jul 11
<a href="#">±</a> Worldwide Sideband Activity Contest	0100Z-0159Z, Jul 12
<a href="#">±</a> ICWC Medium Speed Test	0300Z-0400Z, Jul 12
<a href="#">±</a> RTTYOPS Weeksprint	1700Z-1900Z, Jul 12
<a href="#">±</a> Phone Weekly Test	0230Z-0300Z, Jul 13
<a href="#">±</a> A1Club AWT	1200Z-1300Z, Jul 13
<a href="#">±</a> CWops Test	1300Z-1400Z, Jul 13
<a href="#">±</a> VHF-UHF FT8 Activity Contest	1700Z-2000Z, Jul 13
<a href="#">±</a> Mini-Test 40	1700Z-1759Z, Jul 13
<a href="#">±</a> Mini-Test 80	1800Z-1859Z, Jul 13



## THIS MONTHS WORLDWIDE CONTESTS



Click the [±](#) link go to the specific contest info page

<a href="#">±</a> CWops Test	1900Z-2000Z, Jul 13
<a href="#">±</a> RSGB 80m Club Championship, SSB	1900Z-2030Z, Jul 13
<a href="#">±</a> CWops Test	0300Z-0400Z, Jul 14
<a href="#">±</a> CWops Test	0700Z-0800Z, Jul 14
<a href="#">±</a> RTTYOPS Weeksprint	1700Z-1900Z, Jul 14
<a href="#">±</a> EACW Meeting	1900Z-2000Z, Jul 14
<a href="#">±</a> QRP Fox Hunt	0100Z-0230Z, Jul 15
<a href="#">±</a> NCCC RTTY Sprint	0145Z-0215Z, Jul 15
<a href="#">±</a> NCCC Sprint	0230Z-0300Z, Jul 15
<a href="#">±</a> K1USN Slow Speed Test	2000Z-2100Z, Jul 15
<a href="#">±</a> Russian Radio Team Championship	0700Z-1459Z, Jul 16
<a href="#">±</a> Trans-Tasman Low-Bands Challenge	0800Z-1400Z, Jul 16
<a href="#">±</a> IARU Region 1 70 MHz Contest	1400Z, Jul 16 to 1400Z, Jul 17
<a href="#">±</a> North American QSO Party, RTTY	1800Z, Jul 16 to 0559Z, Jul 17
<a href="#">±</a> CQ Worldwide VHF Contest	1800Z, Jul 16 to 2100Z, Jul 17
<a href="#">±</a> RSGB International Low Power Contest	0900Z-1200Z and 1300Z-1600Z, Jul 17
<a href="#">±</a> CQC Great Colorado Gold Rush	2000Z-2159Z, Jul 17
<a href="#">±</a> Run for the Bacon QRP Contest	2300Z, Jul 17 to 0100Z, Jul 18
<a href="#">±</a> K1USN Slow Speed Test	0000Z-0100Z, Jul 18
<a href="#">±</a> ICWC Medium Speed Test	1300Z-1400Z, Jul 18
<a href="#">±</a> OK1WC Memorial	1630Z-1729Z, Jul 18
<a href="#">±</a> ICWC Medium Speed Test	1900Z-2000Z, Jul 18
<a href="#">±</a> RSGB FT4 Contest	1900Z-2030Z, Jul 18
<a href="#">±</a> Worldwide Sideband Activity Contest	0100Z-0159Z, Jul 19
<a href="#">±</a> ICWC Medium Speed Test	0300Z-0400Z, Jul 19
<a href="#">±</a> RTTYOPS Weeksprint	1700Z-1900Z, Jul 19
<a href="#">±</a> Phone Weekly Test	0230Z-0300Z, Jul 20
<a href="#">±</a> A1Club AWT	1200Z-1300Z, Jul 20



## THIS MONTHS WORLDWIDE CONTESTS



Click the [±](#) link go to the specific contest info page

<a href="#">±</a> CWops Test	1300Z-1400Z, Jul 20
<a href="#">±</a> Mini-Test 40	1700Z-1759Z, Jul 20
<a href="#">±</a> VHF-UHF FT8 Activity Contest	1700Z-2000Z, Jul 20
<a href="#">±</a> Mini-Test 80	1800Z-1859Z, Jul 20
<a href="#">±</a> CWops Test	1900Z-2000Z, Jul 20
<a href="#">±</a> Walk for the Bacon QRP Contest	0000Z-0100Z, Jul 21 and 0200Z-0300Z, Jul 22
<a href="#">±</a> NAQCC CW Sprint	0030Z-0230Z, Jul 21
<a href="#">±</a> CWops Test	0300Z-0400Z, Jul 21
<a href="#">±</a> CWops Test	0700Z-0800Z, Jul 21
<a href="#">±</a> RTTYOPS Weeksprint	1700Z-1900Z, Jul 21
<a href="#">±</a> NTC QSO Party	1900Z-2000Z, Jul 21
<a href="#">±</a> EACW Meeting	1900Z-2000Z, Jul 21
<a href="#">±</a> QRP Fox Hunt	0100Z-0230Z, Jul 22
<a href="#">±</a> NCCC RTTY Sprint	0145Z-0215Z, Jul 22
<a href="#">±</a> NCCC Sprint	0230Z-0300Z, Jul 22
<a href="#">±</a> K1USN Slow Speed Test	2000Z-2100Z, Jul 22
<a href="#">±</a> ARAM 50 MHz Contest	0000Z-2359Z, Jul 23
<a href="#">±</a> YOTA Contest	1000Z-2159Z, Jul 23
<a href="#">±</a> K1USN Slow Speed Test	0000Z-0100Z, Jul 25
<a href="#">±</a> QCX Challenge	1300Z-1400Z, Jul 25
<a href="#">±</a> ICWC Medium Speed Test	1300Z-1400Z, Jul 25
<a href="#">±</a> OK1WC Memorial	1630Z-1729Z, Jul 25
<a href="#">±</a> ICWC Medium Speed Test	1900Z-2000Z, Jul 25
<a href="#">±</a> QCX Challenge	1900Z-2000Z, Jul 25
<a href="#">±</a> Worldwide Sideband Activity Contest	0100Z-0159Z, Jul 26
<a href="#">±</a> ICWC Medium Speed Test	0300Z-0400Z, Jul 26
<a href="#">±</a> QCX Challenge	0300Z-0400Z, Jul 26
<a href="#">±</a> RTTYOPS Weeksprint	1700Z-1900Z, Jul 26





## THIS MONTHS WORLDWIDE CONTESTS



Click the [±](#) link go to the specific contest info page

<a href="#">± SKCC Sprint</a>	0000Z-0200Z, Jul 27
<a href="#">± Phone Weekly Test</a>	0230Z-0300Z, Jul 27
<a href="#">± A1Club AWT</a>	1200Z-1300Z, Jul 27
<a href="#">± CWops Test</a>	1300Z-1400Z, Jul 27
<a href="#">± Mini-Test 40</a>	1700Z-1759Z, Jul 27
<a href="#">± Mini-Test 80</a>	1800Z-1859Z, Jul 27
<a href="#">± CWops Test</a>	1900Z-2000Z, Jul 27
<a href="#">± CWops Test</a>	0300Z-0400Z, Jul 28
<a href="#">± CWops Test</a>	0700Z-0800Z, Jul 28
<a href="#">± RTTYOPS Weeksprint</a>	1700Z-1900Z, Jul 28
<a href="#">± EACW Meeting</a>	1900Z-2000Z, Jul 28
<a href="#">± RSGB 80m Club Championship, Data</a>	1900Z-2030Z, Jul 28
<a href="#">± QRP Fox Hunt</a>	0100Z-0230Z, Jul 29
<a href="#">± NCCC RTTY Sprint</a>	0145Z-0215Z, Jul 29
<a href="#">± NCCC Sprint</a>	0230Z-0300Z, Jul 29
<a href="#">± K1USN Slow Speed Test</a>	2000Z-2100Z, Jul 29
<a href="#">± Feld Hell Sprint</a>	0000Z-2359Z, Jul 30
<a href="#">± RSGB IOTA Contest</a>	1200Z, Jul 30 to 1200Z, Jul 31
<a href="#">± Tennessee State Parks on the Air</a>	1400Z-2200Z, Jul 30 and 1400Z-2200Z, Jul 31
<a href="#">± WAB 144 MHz Low Power Phone</a>	1400Z-1800Z, Jul 30
<a href="#">± ARS Flight of the Bumblebees</a>	1700Z-2100Z, Jul 31