This Month's News: New Beginnings (New Officers and Board Members)

The July 9th meeting was held at The Dudley House at 19:00 and was conducted by our club President Denney N6HV. Our topic was "A review of our June 5th club Field Day "Preparation" and BBQ, as well as the 2021 Field Day, with Denney showing photos of the events. The following members were installed at our July 9th meeting: At-Large Board Members (3); Richard Abbey WB6AEW (incumbent), David Schmidt AI6VX, and Mark Swaney KD6ASL, Treasurer John Gartman W6JPG (incumbent), Secretary Pedro Morillas KE6MIL, Vice President Clem Alberts KM6OKZ (incumbent), and President Robert Shank KM6RSS. Twenty members and one guest attended our meeting. Robert, as outgoing at-large board member, was recognized with a certificate and Denney, as outgoing President, was presented with a Certificate of Appreciation, signed by the officers, who recognized him for "His Ability to Lead K6MEP during Unprecedented Trials and Tribulations as President of the Ventura Amateur Radio Club January 2020 – July 2021".

The August 13th meeting will be held at The Dudley House at 19:00 and will be conducted by our club President Robert KM6RSS. Orv Beach, W6BI, will present the topic AREDN.

The Inside Story

Message from the President

The Prez Sez,

Our June election and July installation has brought some new faces to our club officers and board members; I am very privileged to work together with each and every one to increase the value of your K6MEP membership and encourage other hams to join our club. With the end of governmental rules and regulations concerning holding meetings together, we are now, once again, back at the Dudley House, where we can gather, socialize and learn something new. However, as our world is always changing, we continue to follow our health department's guidelines to keep our members (and guests) as safe as we can.

My plan to further our club's mission statement of "promoting interest in amateur radio" is asking our members to volunteer and support our club's organizational posts (e.g. Program Manager) as well as creating needed committees to provide guidance and direction to achieve several goals. I'm limiting this month's column to **three** important steps.

The **first** step is to build a better infrastructure to support new membership. That process requires the integration of several roles: our Secretary, Treasurer, Webmaster and Membership. We are reviewing our current website to determine what needs to be done to simplify the membership application/renewal process. A website review and proposal committee has been formed, composed of Bruce and Pedro, with me as an ad-hoc member (since I am the webmaster, it makes sense for me to be on the committee). The **second** step is forming the membership committee, with Bob Brodie (Continued on next page)

Club Officers	And Keyer	Contributors
President	Robert Shank	KM6RSS
Vice-President	Clem Alberts	KM6OKZ
Secretary	Pedro Morillas	K6MIL
Treasurer	John Gartman	W6JPG
Board Member	Richard Abbey	WB6AEW
Board Member*	Dave Schmidt	AI6VX
Board Member	Mark Swaney	KD6ASL
Program Manager	Open	Please Volunteer
Equipment Mgr.	Denney Pistole	N6HV
Facilities	Richard Abbey	WB6AEW
Keyer Editor	Robert Shank	KM6RSS
Webmaster	Robert Shank	KM6RSS
Domain	Phil Cohen	WA6BUZ
Membership	Bob Brodie	KJ6AAE
License Trustee	Dave Schmidt	AI6VX
QSL Manager	Ben Holmes	K6QV
Safety Officer	Open	Please volunteer
PIO/Trivia	Dana Wentling	KG6WXE
Columnist	Reese West	KQ6TT
Columnist	Steve Noll	WA6EJO
Local Area Net	Wayne Woodhams	N6WIX
ACS/ARES	Rob Hanson	W6RH
SB Section	John Kitchens	NS6X
PVARC/MESH	Paul/Orv	WD6EBY/W6BI

The KEYER is published monthly by K6MEP, the Ventura County Amateur Radio Club, Inc. as a means of providing club members the minutes from K6MEP's monthly general membership meetings, the monthly board of directors' meetings, a calendar of events and articles of interest about amateur radio. Material submitted for inclusion is encouraged.

Submit material by email to KM6RSS@gmail.com. Our club mailing address is:

K6MEP

PO Box 2103

Oxnard, CA 93034-2103

K6MEP holds general membership meetings at 7:00 PM on the 2nd Friday of each month (except December). Dues are $20 per year.

Message from the President (Continued)

and Pedro. A meeting has already taken place and several deliverables have been identified, such as the creation of a new member's kit (see report on page 12).
The **third** step is to examine and improve our Bylaws. A committee has been formed, composed of Mark Swaney, Clement and Pedro, to review our club's ability to function under governmental restrictions (such as COVID). They are looking at clarifying our rules to allow us to conduct remote, virtual meetings of the board and club, as well as reviewing our elections process. As the world continues to have more and more global connections, we need to be prepared.

I like to end my message to our readers with a safety share and this month's topic is "**Tips to Help Develop an Emergency Backup Plan**" (from SCE circular ©2021).

1. Create a plan for evacuating your home and share it with family and friends.
2. Your medical equipment provider may be able to help you develop an emergency backup plan or provide guidance on backup power for your equipment.
3. Contact your local Office of Emergency Service to see if you can be added to their contact list.
4. Keep emergency phone numbers handy, including your doctor and medical equipment company.
5. Keep a fully-charged cell phone on hand (having a cellphone battery bank charger with a cable is also a good idea).
6. For additional tips on developing emergency plans, visit **www.redcross.org**.

73,
Robert KM6RSS

K6MEP July 9th, 2021 Board Meeting Minutes

MEETING LOCATION: Dudley House, Ventura, CA

OFFICER ATTENDEES

OFFICE	LAST	FIRST	CALL SIGN	PRESENT
PRESIDENT	PISTOLE	DENNEY	N6HV	X
VP	ALBERTS	CLEMENT	KM6OKZ	X
TREASURER	GARTMAN	JOHN	W6JPG	X
SECRETARY (temp)	MORILLAS	PEDRO	KE6MIL	X
BOARD	ABBEY	RICHARD	WB6AEW	
BOARD	SCHMIDT	DAVE	AI6VX	X
BOARD	SHANK	ROBERT	KM6RSS	X

CALL TO ORDER 19:18

Denney opened the meeting and there were 6 out of a possible 7 board members present. Missing was Richard Abbey, who was out of town

Secretary's Report: We now have 50 paid-up members.

- Minutes from June meeting were accepted as published in The Keyer.
- Board instructed the Secretary to purge the membership list to include only paid members.

Treasurer's Report: The club's savings, checking and petty cash amounts were provided.

Old Business:

The following expenses were newly submitted or had been previously submitted to the board for approval:

- Board approved reimbursing Clem $280.46 for expenses related to Stewart Stone's farewell party.
- The treasurer reimbursed Clem for the portable toilet and handwashing station used during Field Day
- Board approved reimbursing Denney $146.00 for expenses related to Post Office Box.
- Board authorized Robert Shank to contact Richard Abbey to donate $50.00 to Dudley House for allowing access to the grounds and building during our June 5th picnic.
- The treasurer reimbursed Pedro for the hard hats, googles and other items used during Field Day.

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K6MEP July 9th, 2021 Board Meeting Minutes (Continued)

New Business:

- A Bylaws committed was formed to review and update the club's bylaws with a view on remote and virtual meetings as well as elections. Committee members will include: Mark Swaney, Clement Alberts and Pedro Morillas. Our president will participate as an ex-officio member of the committee as he does on all committees formed as per our bylaws.
- Discussion on hosting a picnic at Dudley House and determine who will be on the committee during the general membership meeting.
    - Richard Abbey will be consulted on available dates
    - Richard Abbey will be asked for cost of the Dudley House for the picnic.
- Robert mentioned that Keith W6KME will be speaking later about another picnic for Ventura County SK remembrances on Saturday, September 4th in Santa Rosa Valley so we need to coordinate our dates
- Discussion of establishing the position of "Club Equipment Manager"
    - Board approved the establishment of this new position
    - Denney Pistole accepted the position.
    - The Board resolved to give the Club Equipment Manager authority to determine the value of the equipment for donations, sell such equipment at swap meets, etc., and/or disposal of any items that are deemed without value. All monies collected will be given to our treasurer with the purchaser, item description and the amount received if sold within the club. Items sold at swap meets should be given to our treasurer with a listing of the items and amounts received.
    - A committee composed of Dave, Pedro, John and Robert will assist Denney with the identification, evaluation and disposition of the club's assets located at Denney's home.
- Discussion about offering to purchase and install solar lights for the Dudley House – needs to be forwarded to Richard Abbey to gain Dudley House approval before costs are determined.

Meeting adjourned at 19:46 PM

K6MEP July 9th, 2021 General Meeting Minutes

MEETING LOCATION: Dudley House, Ventura, CA

OFFICER ATTENDEES

OFFICE	LAST	FIRST	CALL SIGN	PRESENT
PRESIDENT	PISTOLE	DENNEY	N6HV	X
VP	ALBERTS	CLEMENT	KM6OKZ	X
TREASURER	GARTMAN	JOHN	W6JPG	X
SECRETARY	MORILLAS	PEDRO	KE6MIL	X
BOARD	ABBEY	RICHARD	WB6AEW	
BOARD	SCHMIDT	DAVE	AI6VX	X
BOARD	SHANK	ROBERT	KM6RSS	X

CALL TO ORDER 20:00

- Denney opened the meeting with a welcome and the pledge of allegiance
- Introductions were made by all present
- There were no new members present to be recognized since our last meeting
- There were 20 members present, 2 members on ZOOM (James Norton and Stewart Stone), and 1 visitor (Michael Gazzaway KF6UV).

Old Business:

- No old business was reviewed

New Business

Discussions:

- Informal breakfast meetings.
  - Dana Wentling will search for a location and advise the membership accordingly
- Youth programs.
  - Tim Tenopir will contact Mrs. Morris from the Cub Scout organization
  - Tim Tenopir will create a “Bringing Youth into Ham Radio” presentation and invite a Scouting official to our September meeting.
- Club bylaws committee creation
  - Mark Swaney will lead the team composed of:
    - Clem Roberts, Pedro Morillas and Robert Shank

(Continued on next Page)

K6MEP July 9th, 2021 Board Meeting Minutes (Continued)

- Fall Picnics
  - A VCARC Picnic committee was formed
    - Dana Wentling will lead the team of:
      - Mark Ortega, James Norton and others will be recruited.
      - Dana will contact Richard to determine the availability and cost of the Dudley House.
  - Keith Elliott mentioned there will be an announcement for a Bored Net picnic in a few weeks. (September 4th in the Santa Rosa Valley)

- Field Day "Lessons Learned"
  - Many thanks to Tim Tenopir for creating and distributing Field Day mugs for the participants.
  - N3FJP software was useful, but we did not get all of its benefits due to inexperience.
  - A structured training session should be done.
  - Use of knots and guy lines training should be provided.
  - Location map of the Band Captain's set-up layout should be planned so that masts, antennas and feedlines can be installed as early as possible to make room for the cooking, serving and Public Information Officer areas.
  - Transceivers using FT8 should be set up and tested before bringing them.
  - Generator power schedule should be established.
  - Battery backups and load needs to be determined.
  - Food times and menus should be structured based on attendance.
  - More tables, chairs and shade are required; a club table would be nice.

Installation of newly elected board

- Denney recognized Mark Swaney and Dave Schmidt as new board members, Pedro as secretary, Clement and John as returning VP and treasurer, respectively, and Robert as the new president.

(Continued on next page)

K6MEP July 9th, 2021 Board Meeting Minutes (Continued)

- Denney presented Robert a certificate of appreciation for his role as an at-large board member and Field Day Safety Officer.
- Robert presented Denney with a certificate of appreciation, signed by the officers, who recognized him for "His Ability to Lead K6MEP during Unprecedented Trials and Tribulations as President of the Ventura Amateur Radio Club January 2020 – July 2021".

Topic and Presenter

- Denney Pistole presented a slide show containing images of the Club's June 5th Picnic and our June 25-27th Field Day.

Meeting adjourned at 21:06 PM
Several members went to Toppers for Pizza and socializing

K6MEP Monday Night Net Update

Our 2021 Contest started on January 11 and will end on December 6th. Make sure to set your calendar alarms to remind you to check-in and join the Zoom get-together that follows.

Our Net is held each Monday night at 20:00 hrs. local time (we won't hold the net on Christmas Eve/Day or New Year's Eve/Day if they fall on a Monday). We welcome all Ham operators so please check-in and join the roundtable discussion. The net is on Two Meters on the WD6EBY Repeater of Oxnard on 145.200 MHz with a negative offset and a PL of 127.3. Many thanks to PVARC and Paul WD6EBY for hosting our meeting on the repeater. We also have a Zoom meeting following the net at 20:30; see K6MEP.groups.io for details.

To give those who are interested in the experience of being part of our Monday Night Net Contest as Control Operators, we've created a sign-up sheet so that all those who would like to get in front of their microphones and lead our nets have a chance. As of the publication date of this newsletter, Pedro, Clem and Keith have given our net excellent examples of proper net etiquette, as well as their gaining a better insight in the lives of those who have checked-in. There are still openings for net control operators, as shown in the table, below:

Date	Net Control Operator
2-Aug	Mark Swaney KD6ASL
9-Aug	David AI6VX
16-Aug	James Norton KB6JWN
23-Aug	Open; please volunteer to take the net
30-Aug	Open; please volunteer to take the net
6-Sep	David AI6VX
13-Sep	Open; please volunteer to take the net
20-Sep	Burt KA6BJA
27-Sep	Open; please volunteer to take the net
4-Oct	Tim KN6JGB
11-Oct	Open; please volunteer to take the net
18-Oct	Open; please volunteer to take the net
25-Oct	David AI6VX
1-Nov	Open; please volunteer to take the net
8-Nov	Open; please volunteer to take the net
15-Nov	Open; please volunteer to take the net
22-Nov	Open; please volunteer to take the net
29-Nov	Jeremy KN6JMD
6-Dec	David AI6VX and the net contest will be complete after this net is over.

If you would like to volunteer, please contact me with the date you would like and I'll update the list, which is saved to our K6MEP.groups.io website.

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K6MEP Monday Night Net Update (Continued)

Monday Night Net Contest Totals to Date		
Date	Total	Visitors
1/11/2021	22	4
1/18/2021	22	3
1/25/2021	22	6
2/1/2021	18	3
2/8/2021	17	2
2/15/2021	18	3
2/22/2021	20	4
3/1/2021	17	3
3/8/2021	26	8
3/15/2021	20	5
3/22/2021	22	7
3/29/2021	17	3
4/5/2021	20	7
4/12/2021	19	4
4/19/2021	18	3
4/26/2021	17	4
5/3/2021	20	4
5/10/2021	13	2
5/17/2021	15	1
5/24/2021	19	5
5/31/2021	16	2
6/7/2021	20	3
6/14/2021	14	2
6/21/2021	23	5
6/28/2021	14	1
7/5/2021	21	5
7/12/2021	19	2
7/19/2021	17	2
7/26/2021	16	1
Total	542	104

As of July 26th, we've held 29 nets and had a total of 542 check-ins including 104 visitor check-ins and an average of 18.69 per night. Four members have checked in every Monday night for 29 Monday nights in a row. They are Dave AI6VX, Rod KA6GSU, Robert KM6RSS and Denney N6HV.

Membership Committee Meeting with Pedro and Bob Brodie Friday, 7/16/2021

Subject: Streamline Membership procedure

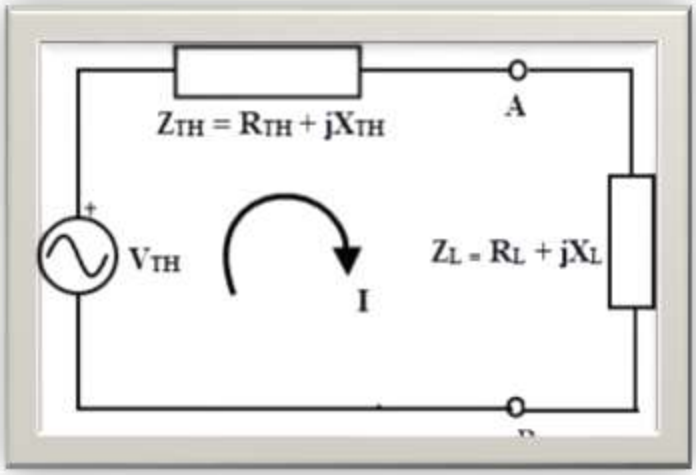
Attending: Pedro K6MIL, Bob Brodie KJ6AAE

- Bob and Pedro agreed that the procedures proposed by to the Board last December should be implemented.
  - Verify we have an active PayPal account **Action Pedro**
  - Request Robert to investigate feasibility of a new website. **Action Robert**
  - Members will need to be advised when all bugs are worked out, but no later than October 1, 2021, so we can start collecting dues in November 2021 **Action Bob.**
- **Welcome Package for new members.**
  - Personal welcoming letter from President , signed as original Robert
  - ID Card Bob
  - Short history of the Club Robert
  - Short detail Club activities Pedro
    - Monday Net
    - After Net Zoom Meeting
    - Monthly meeting
    - Field Day
    - Civic events
    - Elmers
  - Groups I/O Robert
    - What is it?
    - What does it do?
    - How to enroll
  - ARRL Code of Ethics Pedro
  - Membership Roster
    - Elmers highlighted Bob
- **Automatic email from Bank or PayPal when a new member joins.** John to advise
  - To Bob Brodie
  - To Members of the Board
  - Bob Brodie to generate a letter to membership introducing the new member.

Thoughts From the West Reese West KQ6TT

THE MOST MISUNDERSTOOD THEOREM IN ELECTRONICS

For DC circuits, maximum power is delivered to a load when the load impedance and source impedance are equal. For AC circuits, there also needs to be a conjugate match. For purposes here, let's restrict the discussion to a DC voltage source and two resistors, all in series. This all sounds so simple, but whole careers have been destroyed by the misapplication of this theorem. It very seldom applies to any use. It is best just forgotten. There is another overriding consideration of efficiency. The matched value of the resistors yields fifty percent efficiency. People get lost when applying the theorem to transmission line impedance matching and what happens in the final stages of a transmitter. Let's start with the output connection from a transmission line to an antenna.



Consider a transmitter, coax line, and an antenna. When a fifty ohm transmission line from a transmitter is connected to a fifty ohm antenna, the power transfer is a perfect one hundred percent. All the power is transferred from the line to the antenna. There is no loss in the fifty ohm, transmission line source impedance. You can view a transmission line as being mathematically similar to the free space that a transmitted signal travels in; i.e. air. Now consider the connection from the transmitter to the transmission line. This is where reputations can be lost. The output of the transmitter is generally also fifty ohms. It is similar to the other end; the transfer is also loss-less. The power comes from low loss reactive coil and capacitor components, and transformers that have effective fifty ohm impedance just like the transmission line. A resistive impedance by itself does not mean power loss to heat. It merely means that the voltage and current have the same phase angle. It is also a question of viewpoint. When driving an infinitely long fifty ohm loss-less transmission line, the power is lost from the driving circuit. It looks to the driving circuit like the power was lost to a resistor. In fact the power is just still heading down that transmission line.
So, it is possible to have loss-less power transfer from one circuit to another just because there are no real physical resistors just loss-less circuits. (Continued on next page)

Thoughts From the West Reese West KQ6TT (Continued)

THE MOST MISUNDERSTOOD THEOREM IN ELECTRONICS (Continued)

Now, let us take a look at the last transmitter power generation stage. Start with a coil and capacitor tank circuit. Assume that it is a class C transistorized stage. The L-C tank circuit is like a child on a swing. You give pushes and the child swings up and down. The child's energy at the top of the swing is stored as a mass at a height in a gravitational field. This is the same as the voltage on the capacitor. At the bottom of the swing the energy is stored as the mass at a velocity. This is the same as the current through the coil. Lastly, you give a push once each cycle. This is the same as a short current pulse each cycle from the transistor. Because of the short current pulses, the efficiency of class C circuits can be ninety percent or better. The result is that in the whole power transfer from power generation to transmitting there is no 'maximum power transfer theorem' in use. I have never seen it needed anywhere.
In using the theorem you need to match the load resistance to the power supply resistance. Not the other way around. And in most generator cases the power supply has low output impedance, so, the load resistance must be lowered, and the power supply has to supply more power. The limit here is the maximum power output of the power supply.

In the course of several years, I have seen a career lost and inability to publish, when the person had the correct understanding of all the theory. I have also seen designs that were strange due to the misapplication of the theorem. The safest approach to this theorem is to forget that it exists. It is not needed.

Reese West KQ6TT
July 24, 2021

Selected August Contests & Special Events

Please see QST or the ARRL website (www.arrl.org) for any details and QSL information.

Maty Weinberg, KB1EIB, events@arrl.org; www.arrl.org/special-event-stations

Special Event Stations

Working special event stations is an enjoyable way to help commemorate history. Many provide a special QSL card or certificate!

Through Dec. 31, 0000Z – 2359Z, all calls, all areas. VE2GT and VE2NCG. **Quebec Parks on the Air (QCPOTA)**. Certificate. *This is an operating event; see website for details.* **qcpota.ca**

Mar. 15 – Nov. 30, 0000Z – 2300Z, II3VE, Venezia, Italy. ARI Venezia. **1,600 Years of the Foundation of Venice**. All bands. Certificate & QSL. Sezione ARI Venezia, S. Croce 1776/B, Venezia 30135, Italy. *Detailed rules on ARI Venezia website and on* **QRZ.com** *for II3VE call. Both II3VE and club call IQ3VE are valid. QSL via eQSL or bureau.* **www.arivenezia.it**

July 16, 1400Z – 1800Z, K5S, Aberdeen, MS. Shiloh Amateur Radio Club. **Eugene O. Sykes, the First Chairman of the FCC, 125th Birthday**. 14.270 7.170. QSL. Jim Buffington, K5JIM, P.O. Box 52, Aberdeen, MS 39730-0052. **jim@jimbuffington.com**

July 31 – Aug. 1, 1400Z – 1900Z, N3P, Susquehanna, PA. Binghamton Amateur Radio Association. **66th Season at Penn Can Speedway**. 28.350 14.260 7.260 146.865 repeater (146.2 tone). Certificate. Robert Mess, 2505 Oak Hill Rd., Susquehanna, PA 18847. **ws2u.bob@gmail.com** *or* **www.w2ow.org**

Aug. 1 – Aug. 31, 0000Z – 2359Z, 4A2MAX, Diamond, Mexico. Asociacion de Radioexperimentadores de Nuevo Leon. **San Max Special Event**. 28.420 21.220 14.180 7.160. Certificate & QSL. Jose de Jesus Lopez V., 5914 San Bernardo Ave., Suite 4-135, Laredo, TX 78041-2506. **4a2max@xe2n.org** *or* **www.qrz.com/db/4a2max**

Aug. 4, 1400Z – 2300Z, K1CG, Port Angeles, WA. CG CW Operators Association. **US Coast Guard 231st Birthday**. 21.052 14.052 7.052 3.552. QSL. Fred Goodwin, 424 N. Bagley Creek Rd., Port Angeles, WA 98362. **www.qrz.com/db/k1cg**

Aug. 6 – Aug. 8, 0000Z – 2359Z, W7P and W7P/Ø, Flagstaff, AZ. Northern Arizona DX Association. **Pluto: Countdown to the 100th Anniversary of the Discovery of Pluto**. 14.290 14.090 21.290 7.290. Certificate & QSL. Bob Wertz, NF7E, 6315 Townsend/Winona Rd., Flagstaff, AZ 86004. *See website for certificate and QSL information.* **www.nadxa.com**

Aug. 6 – Aug. 8, 1900Z – 2359Z, W8AL, Canton, OH. Canton Amateur Radio Club. **Pro Football Hall of Fame Enshrinement Festival**. 14.280 7.280 3.980. Certificate & QSL*. Canton ARC/W8AL, P.O. Box 8673, Canton, OH 44711-8673. *Watch for FT8 or other digital modes. On-air times subject to operator availability, watch spots/social media.* **www.w8al.org**

Aug. 7, 1500Z – 2259Z, W9B, Sheboygan, WI. Sheboygan County Amateur Radio Club. **Johnsonville Brat Days**. 14.240 7.240. Certificate*. W9VCL Sheboygan County Amateur Radio Club, 4235 N. 29th St., Sheboygan, WI 53083. *See website for instructions on how to receive certificates.* **www.w9vcl.com**

Aug. 7, 1700Z – 2100Z, K9UXZ, Montrose, IL. National Trail Amateur Radio Club. **Montrose Sesquicentennial**. 14.250 7.250. QSL. National Trail Amateur Radio Club, P.O. Box 903, Attn: Montrose Sesquicentennial, Effingham, IL 62401. **www.nationaltrailarc.org**

Aug. 7 – Aug. 15, 0001Z – 2359Z, KØB, Saint Charles, MO. Saint Charles Amateur Radio Club. **Missouri Bicentennial 1821 – 2021, First State Capitol**. 14.215 7.215 7.105; all bands, all modes as conditions permit. Certificate & QSL. Special Event Station KØB/SCARC, P.O. Box 658, Saint Charles, MO 63302. *Club members will be operating as many modes and bands as possible from home stations.* **www.wb0hsi.org**

Aug. 8 – Aug. 14, 1400Z – 0000Z, W8J, Jackson, MI. Cascades Amateur Radio Society. **Jackson County Fair**. 14.235 14.045 7.180 7.045. QSL. Cascades Amateur Radio Society, P.O. Box 512, Jackson, MI 49204. **k8ts@arrl.net** *or* **www.w8jxn.org**

Aug. 8 – Aug. 15, 0000Z – 2359Z, W3KWH, Carnegie, PA. Steel City Amateur Radio Club. **80th Year Anniversary**. 28.495 3.985 146.550. QSL. Steel City ARC, P.O. Box 281, Carnegie, PA 15106. **w3kwh.com/steel-city-arc-80th-year**

Aug. 9 – Aug. 14, 1800Z – 2359Z, NU5DE, McDade, TX. Naturist Amateur Radio Club. **American Association for Nude Recreation National Convention**. 21.365 14.265 7.260. Certificate. Naturist Amateur Radio Club, 166 Eely Rd., #G1, McDade, TX 78650. *Celebrating 90 years.* **www.nu5de.org**

Aug. 9 – Aug. 15, 0000Z – 2359Z, W9IMS, Indianapolis, IN. The Indianapolis Motor Speedway Amateur Radio Club. **The Brickyard 400 — Race Three**. 18.140 14.245 7.245 3.840. Certificate. W9IMS, P.O. Box 30954, Indianapolis, IN 46230. *See the website for complete information!* **www.w9ims.org**

Aug. 10 – Aug. 14, 0000Z – 0000Z, N7C, Chinle, AZ. N7HG. **Navajo Code Talkers**. 21.265 18.133 14.265 7.265. Certificate & QSL. Herbert Goodluck, P.O. Box 06, Lukachukai, AZ 86507. **n7hgster@gmail.com**

Aug. 12 – Aug. 21, 0500Z – 0500Z, K9Y, Rochester, IL. K9ZXO. **Celebrating the Return of the 2021 Illinois State Fair**. 14.070; all modes, all bands. QSL. K9Y/J. Mitch Hopper, 536 E. Mill St., Rochester, IL 62563. **id@brainmist.com** *or* **www.qrz.com/db/k9y**

Aug. 13 – Aug. 27, 1400Z – 1400Z, K4H, Dallas, GA. W4IBM Amateur Radio Club. **Hedy Lamarr, the Inventor**.10, 20, 40, and 80 meters; 28.345 14.245 7.245 3.945; FT8 as conditions permit. Certificate & QSL. Ruth Leber, 598 Trace Rd., Dallas, GA 30157. **w4ibm.club/joomla30/index.php/club-activities/18-special-event-hedy-lamarr-inventor**

Aug. 14, 1600Z – 2200Z, W9UP, La Crosse, WI. Riverland Amateur Radio Club. **Irishfest La Crosse Special Event**. 14.265 14.260. Certificate. Riverland Amateur Radio Club, P.O. Box 621, Onalaska, WI 54650. *Additional operation, Yaesu Fusion WIRES-X, Room 63956 via Riverland Amateur Radio Club's Repeater.* **www.rarc.qth.com**

Selected August Contests & Special Events (Continued.)

Aug. 19 – Aug. 22, 2000Z – 0400Z, W8D, Conneaut, OH. D-Day Ohio Radio Amateur Club. **D-Day Ohio D-Day Reenactment and World War II Living History Special Event Station**. 7.290 3.885 1.885; AM and CW. QSL. Garret Scott/W8D, 10236 Birch Hill Ln., Knoxville, TN 37932. **www.w8d.us**

Aug. 21 – Aug. 22, 1200Z – 2359Z, WB2DHY, Amelia Court House, VA. Amiable Amelia County Radio Club. **Discover Amelia County — Finally!** 14.280 7.280 14.074 7.074. QSL. Phil Lorito, 12371 Deaton Ln., Amelia Court House, VA 23002. *Operating CW, SSB, and FT8. Additional frequencies and times will be posted.* **www.qrz.com/db/wb2dhy**

Aug. 21 – Aug. 22, 1400Z – 0200Z, K2T, Cornwall, NY. Orange County Amateur Radio Club. **First Rail Road Train Dispatch by Telegraph 1851**. 14.250 14.074 14.040 7.255 7.074 7.040 3.920 3.573 3.540. Certificate. OCARC, P.O. Box 624, Cornwall, NY 12518. *Certificate downloadable from website.* **w2ho@ocarcny.org** *or* **www.ocarcny.org**

Aug. 27 – Sep. 5, 0500Z – 0459Z, K2A/K2R/K2S, Ames, IA. Amateur Radio Software Award. **Amateur Radio Software Awards**. 14.250 7.185 3.950 7.078. QSL. Amateur Radio Software Awards, Special Event Station, P.O. Box 126, Ames, IA 50010-0126. **www.arsaward.com**

Aug. 28 – Aug. 29, 1400Z – 2350Z, WØJH, White Rock, SD. Stillwater Amateur Radio Association. **Tri-States Portable Special Event: ND, MN, and SD**. 21.360 14.260 7.260 3.860. Certificate. By email only to Shel Mann, NØDRX, **WhiteRock2021@radioham.org**. *Certificates will* only *be sent via email in PDF.* **www.radioham.org**

Aug. 28 – Sep. 7, 0800Z – 2200Z, W3B, Sharon, PA. Mercer County Amateur Radio Club. **Buhl Day Celebration**. 7.185 14.240 145.350. QSL. Mercer County Amateur Radio Club, P.O. Box 996, Sharon, PA 16146. **www.w3lif.org**

Aug. 28 – Sep 8, 0000Z – 2359Z, K9A, Auburn, IN. Northeastern Indiana Amateur Radio Association (W9OU). **65th Annual Auburn, Cord, Duesenberg Festival**. 14.074 7.225 7.074 7.030. Certificate & QSL. K9A c/o Northeastern Indiana ARA, P.O. Box 145, Auburn, IN 46706. **www.w9ou.org**

Contest Corral

Bruce Draper, AA5B, aa5b.corral@gmail.com

Contest Corral — August 2021

Check for updates and a downloadable PDF version online at **www.arrl.org/contest-calendar**.
Refer to the contest websites for full rules, scoring information, operating periods or time limits, and log submission information.

Start - Finish Date	Time	Date	Time	Bands	Contest Name	Mode	Exchange	Sponsor's Website
1	1400	1	1700	3.5-14	SARL HF Phone Contest	Ph	RS, serial	www.sarl.org.za
2	0000	2	0100	1.8-14	K1USN Slow Speed Test	CW	Max 20 WPM. Name, SPC	k1usn.com/sst.html
3	0100	3	0159	1.8-50	Worldwide Sideband Activity Contest	Ph	RS, age group (OM, YL, or Youth)	wwsac.com/rules.html
3	0100	3	0300	3.5-28	ARS Spartan Sprint	CW	RST, SPC, power	arsqrp.blogspot.com
3	1700	3	1900	3.5-14	RTTYops Weeksprint	Dig	Other's call, your call, serial, name	rttyops.com
4	0230	4	0300	1.8-21	Phone Weekly Test — Fray	Ph	Name, SPC	perluma.com/Phone_Fray_Contest_Rules.pdf
4	1300	4	1400	1.8-28	CWops Mini-CWT Test	CW	Name, mbr or SPC	cwops.org/cwops-tests
4	1700	4	2000	144	VHF-UHF FT8 Activity Contest	Dig	4-char grid square	ft8activity.eu/index.php/en
4	1900	4	2000	1.8-28	CWops Mini-CWT Test	CW	Name, mbr or SPC	cwops.org/cwops-tests
5	0300	5	0400	1.8-28	CWops Mini-CWT Test	CW	Name, mbr or SPC	cwops.org/cwops-tests
5	1700	5	1900	3.5-14	RTTYops Weeksprint	Dig	Other's call, your call, serial, name	rttyops.com
5	1700	5	2100	28	NRAU 10-Meter Activity Contest	CW Ph Dig	RS(T), 6-character grid square	nrrlcontest.no/index.php
5	1900	5	2000	3.5, 7	EACW Meeting	CW	RST, name, mbr or EA province or country	www.eacwspain.es
5	1900	5	2100	1.8-50	SKCC Sprint Europe	CW	RST, SPC, name, mbr or "none"	www.skccgroup.com
6	0100	6	0230	14	QRP Fox Hunt	CW	RST, SPC, name, power	www.qrpfoxhunt.org
6	0145	6	0215	1.8-21	NCCC RTTY Sprint	Dig	Serial, name, QTH	www.ncccsprint.com
6	0230	6	0300	1.8-21	NCCC Sprint	CW	Serial, name, QTH	www.ncccsprint.com
6	2000	6	2100	1.8-14	K1USN Slow Speed Test	CW	Max 20 WPM. Name, SPC	k1usn.com/sst.html
7	0000	8	2359	3.5-28	Batavia FT8 Contest	Dig	4-char grid square	batavia-ft8.com
7	0001	8	2359	28	10-10 International Summer Contest, SSB	Ph	Name, mbr or "0," SPC	www.ten-ten.org
7	1200	7	2359	1.8-28	European HF Championship	CW Ph	RS(T), 2-digit year first licensed	lea.hamradio.si/~scc/euhf
7	1200	8	2359	1.8-50	SKCC Weekend Sprintathon	CW	RST, SPC, name, mbr or "none"	www.skccgroup.com
7	1300	7	1330	144	Two-Meter Classic Sprint	CW Ph	Serial, 4-char grid square	fwrc.info
7	1600	7	1800	3.5-28	FISTS Saturday Sprint	CW	RST, SPC, name, mbr or "0"	fistsna.org
7	1800	8	0559	1.8-28	North American QSO Party, CW	CW	Name, state/DC/province/country	www.ncjweb.com
7	1800	8	1800	222 and up	ARRL 222 MHz and Up Distance Contest	CW Ph Dig	6-char grid square	arrl.org/222-mhz-and-up-distance-contest
9	0000	9	0200	1.8-28	4 States QRP Group Second Sunday Sprint	CW Ph	RS(T), SPC, mbr or power	www.4sqrp.com
11	0030	11	0230	3.5-14	NAQCC CW Sprint	CW	RST, SPC, mbr or power	naqcc.info
11	1500	13	1459	144	MMMonVHF 144 MHz Meteorscatter Sprint	CW Ph Dig	Signal report	mmmonvhf.de/ctestinfo.php
11	1700	11	2000	432	VHF-UHF FT8 Activity Contest	Dig	4-char grid square	ft8activity.eu/index.php/en
14	0000	15	2359	3.5-28	WAE DX Contest, CW	CW	RST, serial	darc.de/der-club/referate/referat-conteste/worked-all-europe-dx-contest/en
14	0800	14	1100	1.8-28	QRP ARCI European Sprint	CW	RST, SPC, mbr or power	qrparci.org/contest
14	1200	14	1300	7	SARL Youth Sprint	Ph	RS, age	www.sarl.org.za
14	1400	14	2200	3.5-28	Kentucky State Parks on the Air	CW Ph Dig	KY park abbreviation or SPC	k4msu.com/kypota
14	1400	15	0400	1.8-432	Maryland-DC QSO Party	CW Ph Dig	Entry class, county or SPC	w3vpr.org/mdcqsop
14	2300	15	0300	50	50 MHz Fall Sprint	CW Ph Dig	4-char grid square	svhfs.org
15	1400	15	1700	3.5-14	SARL HF Digital Contest	Dig	RST, serial	www.sarl.org.za
15	1700	15	2100	3.5-28	NJQRP Skeeter Hunt	CW Ph	RS(T), SPC, skeeeter # or power	www.qsl.net/w2lj
15	2100	15	2300	3.5-28	FISTS Sunday Sprint	CW	RST, SPC, name, mbr or "0"	fistsna.org
15	2300	16	0100	1.8-28	Run for the Bacon QRP Contest	CW	RST, SPC, mbr or power	qrpcontest.com/pigrun
21	0000	22	1600	3.5-28	SARTG WW RTTY Contest	Dig	RST, serial	www.sartg.com
21	0600	22	2359	10 GHz to light	ARRL 10 GHz and Up Contest	CW Ph Dig	6-char grid locator	www.arrl.org/10-ghz-up
21	0800	22	0800	1.8-28	Russian District Award Contest	CW Ph	RS(T), RU district code or serial	rdaward.org/rdac1.htm
21	1200	22	1200	1.8-50	Keyman's Club of Japan Contest	CW	RST, JA prefecture code or CQ zone	kcj-cw.com/e_index.htm
21	1600	21	1759	1.8-50	Feld Hell Sprint	Dig	RST, mbr, SPC, grid	sites.google.com/site/feldhellclub
21	1600	22	0400	1.8-28	Ohio QSO Party	CW Ph	RS(T), OH county or SPC	www.ohqp.org
21	1800	22	0559	1.8-28	North American QSO Party, SSB	Ph	Name, state/DC/province/country	www.ncjweb.com
22	1800	22	2359	3.5-28	ARRL Rookie Roundup, RTTY	Dig	Name, 2-digit year first licensed, SPC or XE province	arrl.org/rookie-roundup
25	0000	25	0200	1.8-50	SKCC Sprint	CW	RST, SPC, name, mbr or "none"	www.skccgroup.com
28	0400	30	0400	1.8-28	Hawaii QSO Party	CW Ph Dig	RS(T) HI district or SPC	hawaiiqsoparty.org
28	0600	29	0559	3.5-28	ALARA Contest	CW Ph	RS(T), serial, mbr, name, YL or OM	alara.org.au/contests
28	1200	29	0300	1.8-50	W/VE Islands QSO Party	CW Ph Dig	RS(T), USI/CISA Island Designation or SPC	usislands.org/qso-party-rules
28	1200	29	1200	1.8-28	YO DX HF Contest	CW Ph	RS(T), YO county or serial	www.yodx.ro/en
28	1200	29	1200	1.8-28	World Wide Digi DX Contest	Dig	4-char grid square	ww-digi.com
28	1400	29	2000	3.5-50	Kansas QSO Party	CW Ph Dig	RS(T), KS county or SPC	ksqsoparty.org
29	1400	29	1700	3.5-14	SARL HF CW Contest	CW	RST, serial	www.sarl.org.za

There are a number of weekly contests not included in the table above. For more info, visit: **www.qrpfoxhunt.org**, **www.ncccsprint.com**, and **www.cwops.org**.
All dates refer to UTC and may be different from calendar dates in North America. Contests are not conducted on the 60-, 30-, 17-, or 12-meter bands.
Mbr = Membership number. Serial = Sequential number of the contact. SPC = State, Province, DXCC Entity. XE = Mexican state. Listings in blue indicate contests sponsored by ARRL or *NCJ*. The latest time to make a valid contest QSO is the minute listed in the "Finish Time" column. *Data for Contest Corral is maintained on the WA7BNM Contest Calendar at* **www.contestcalendar.com** *and is extracted for publication in* QST *2 months prior to the month of the contest. ARRL gratefully acknowledges the support of Bruce Horn, WA7BNM, in providing this service.*

Upcoming FCC Exam Session Preparation Sites

(Virtual only; physical classes are unavailable this month within 250 miles of Ventura)

Upcoming FCC Exam Test

GLAARG is offering remote testing; see https://glaarg.org/remote-sessions/ for details)

Calabasas CA 91302
08/01/2021
Sponsor: Goodkin Family
Date: Aug 01 2021
Time: 9:30 AM (No Walk-ins / Register or Call ahead)
Contact: Norm Goodkin
(818) 613-2257
Email: hamclass@goodkin.net
VEC: Greater LA VEC
Location: On-Line
ONLINE ONLY - visit website to register
Calabasas CA 91302
Website: https://hamstudy.org/sessions/glaarg/wb6ohw

Ridgecrest CA 93555
08/14/2021
Sponsor: Sierra ARC
Date: Aug 14 2021
Time: 9:00 AM (No Walk-ins / Register or Call ahead)
Contact: Michael D. Herr
Email: wa6ara@gmail.com
VEC: ARRL/VEC
Location: Due to COVID TBD
Pre-Register Required
Ridgecrest CA 93555

Huntington Beach CA 92647-4359
08/19/2021
Sponsor: West Coast ARC
Date: Aug 19 2021
Time: 5:30 PM (No Walk-ins / Register or Call ahead)
Contact: Kenneth O. Simpson
(714) 651-6535
Email: w6kos@arrl.net
VEC: ARRL/VEC
Location: Community United Methodist Church
6652 Heil Ave
Huntington Beach CA 92647-4359

La Habra CA 90631-5401
08/19/2021
Sponsor: Western ARA
Date: Aug 19 2021
Time: 6:00 PM (No Walk-ins / Register or Call ahead)
Contact: George T. Jacob
(562) 544-7373
Email: jac2247@gmail.com
VEC: ARRL/VEC
Location: La Habra Community Center
101 W La Habra Blvd
Pre-registration preferred.
La Habra CA 90631-5401

Downey CA 90242
08/21/2021
Sponsor: Downey Amt Radio Cub
Date: Aug 21 2021
Time: 8:30 AM (Walk-ins allowed)
Contact: Robert P. Reeder
(562) 553-2811
Email: paisley.reeder@gmail.com
VEC: ARRL/VEC
Location: Downey Fire Station 1
12222 Paramount Blvd
Downey CA 90242

Upcoming FCC Exam Test (Continued)

Redondo Beach CA 90278-1001
08/28/2021
Sponsor: Crescent Bay VE Grp/W6TRW ARC
Date: Aug 28 2021
Time: 10:00 AM (Walk-ins allowed)
Contact: Scott Swanson
(310) 459-0337
Email: k6pyp@arrl.net
VEC: ARRL/VEC
Location: Space Park Business Park
1 Space Park Blvd
https://w6trw.com/ for updates
Redondo Beach CA 90278-1001

On Exam Day Bring the Following Items:

1. One legal photo ID (identification):
   a. State Driver's License, b. Government issued Passport, c. Military or Law Enforcement Officer Photo ID card, d. Student School Photo ID card, e. State Photo ID card.
2. If no photo ID is available, two forms of identification:
   a. Non-photo State ID card (some states still have them), b. Birth certificate (must have the appropriate seal), c. Social security card, d. Employer's wage statement or Minor's work permit, e. School ID card, f. School or Public Library card, g. Utility bill, bank statement or other business correspondence that specifically names the person; or a postmarked envelope addressed to the person at his or her current mailing address as it appears on the Form 605.
3. Students/minors without a photo ID need to bring only one of the above items if a legal guardian presents their photo ID; otherwise two non-photo IDs are required. Minor children (under the age of 18) may be accompanied in the room by an adult during the test.
4. FCC Registration Number (FRN): VECs are required by the FCC to submit your FRN with your license application form. New license applicants must create an FCC user account and register their Social Security Number (SSN) in the FCC Commission Registration System (CORES) before attending exam sessions. Registrants will be assigned an FRN which will be used in all license transactions with the FCC. For instructions on how to register your SSN and receive an FRN from the FCC, visit the FCC's Registration page and the FCC's Registration instructions page. Per FCC rules, a valid email address is also mandatory on the application form.
5. If applicable, bring a printed copy of your Amateur Radio license. Acceptable copies or printouts of licenses are available from the following sources: the official license or reference license printed from the FCC website or license data printed from the ARRL website or QRZ website. The original(s) and photocopy(s) of any Certificates of Successful Completion of Examination (CSCE) you may hold from previous exam sessions. If your license has already been issued by the FCC, the CSCE showing license credit is not needed. The candidate is required to show proof of the current license to the team but the team is no longer required to submit the proof to the VEC. Expired license proof must be submitted to the team and to the VEC for processing to FCC. These photocopies will not be returned. Instructions on how to obtain an official FCC license copy are on our Obtain License Copy web page.
6. Two number two pencils with erasers and a pen for in-person sessions.
7. A calculator with the memory erased and formulas cleared is allowed. You may not bring any written notes or calculations into the exam session. Slide rules and logarithmic tables are acceptable, as long as they're free of notes and formulas. Cell phone must be silenced or turned off during the exam session and the phones' calculator function may not be used. In addition, iPhones, iPads, Androids, smartphones, Blackberry devices and all similar electronic devices with a calculator capability, may NOT be used.
8. Bring a check, a money order or cash to cover the exam session fee(s). Check the ARRL VEC's current exam fees. The FCC hasn't started to accept the $35 fee, which will be paid directly to the FCC.
9. Be aware that some information about you will be made publicly available on the FCC's website.

Trivia for August 2021

1. Did you know???

Construction of the White House began October 13, 1792.

2. The White House was burn almost to the ground at the start of the 1812 war.
3. The Oval office was built in 1909.
4. Again a major fire burn out the oval office in 1924. A total remodeling began in 1933 with a modern oval office completed by 1934.

Peace,
Dana
KG6WXE US

Calendar August 2021

1: Newbie Net
2: K6MEP Monday Night Net and Zoom Meeting
3: ACS/ARES Tuesday Night Net and Simplex
7: CVARC Radio School
8: Newbie Net
9: K6MEP Monday Night Net and Zoom Meeting
10: ACS/ARES Tuesday Night Net
13: K6MEP Monthly Club Meeting and AREDN by Orv W6BI
14: CVARC Radio School
15: Newbie Net
16: K6MEP Monday Night Net and Zoom Meeting
17: ACS/ARES Tuesday Night Net
21: Wings over Camarillo; CVARC Radio School
22: Wings over Camarillo; Newbie Net
23: K6MEP Monday Night Net and Zoom Meeting
24: ACS/ARES Tuesday Night Net
28: CVARC Radio School
29: Newbie Net
30: K6MEP Monday Night Net and Zoom Meeting
31: ACS/ARES Tuesday Night Net

(Repeated from the CVARC website). The wildly successful “Auxiliary Bored Meetings” will continue on a new schedule beginning Monday, June 29, 2020. The informal nets have been running four times daily on the Bozo repeater. Over 7,500 calls from 275 unique hams have been logged on the nets. Under the new schedule, the net will be called to order at 9 A.M. Monday through Saturday. The Saturday morning net will run 9 A.M. to noon with a swap and the repeater will linked with Paul Strauss’ (WD6EBY) repeater network for full Ventura County coverage. Starting July 11, 2020, there will be a second Saturday net at 9 P.M.

The Bozo Repeater operates with the following settings:

Frequency: 147.885 MHz
Offset: –
PL: 127.3

Stu AG6AG
http://www.cvarc.org/event/auxiliary-bored-meetings-on-bozo-3/2023-02-11/

K6MEP Monday Night Net Script

QST- QST- QST. This is _____(Name)_____(Call Sign), with the Ventura County Amateur Radio Club Net. If there is any station with EMERGENCY or PRIORITY Traffic that needs the immediate use of this frequency, please come now.

Hearing none, the following is a QST. This is _____(Name) _____ (Call Sign), tonight's net control station for the Ventura County Amateur Radio Club Net. If, at any time, during tonight's net, anyone needs this frequency for emergency or priority traffic, please call net control, and we will respond appropriately.

This is a directed net, open to all amateur radio operators and is sponsored by K6MEP, the call sign for VCARC. This net begins each Monday evening at 20:00 local time on the WD6EBY linked repeater system.

The primary frequency of this net is 145.200 MHz with a minus offset and a PL of 127.3 Hz. If the repeater should fail for any reason, we can use South Mtn. repeater on 146.385 MHz with a positive offset and a PL of 127.3 Hz as backup.
All amateurs are welcome to check in after the following announcements.
A roundtable will follow the check-ins. A rag chew session may follow the formal net. We will have a Zoom meeting following the net.

K6MEP, the Ventura County Amateur Radio Club, meets at 19:30 hours on the second Friday of each month at The Dudley House, 197 N Ashwood Ave, Ventura, CA. The club meeting will also be on Zoom. Our next meeting will be on Friday _____ (insert date). We urge any non-members interested in the VCARC to contact us at K6MEP@qsl.net. Non-members interested in amateur radio are welcome to attend our meetings.
When you check-in, please give your call sign, name and if you are a VCARC member. If you are not a member of the club, please include your QTH or location.

(Check-ins completed): Hearing no other check-ins, we will now begin with our Roundtable
****

Any last comments? ******** Any late, missed, or visitor check-ins?
Please check-in now.

Hearing no new check-ins does anyone have anything else they would like to add to tonight's net?
Hearing none;
(Closing): This concludes the VCARC weekly net at _____hours. Thank you for your interest and participation. Also thanks to Paul Strauss, WD6EBY, for the use of the repeater for our K6MEP net.
73, this is _____(Name) _____ call sign), tonight's VCARC net control, signing off and returning the repeater to its normal use.

Convention and Hamfest Calendar

Convention and Hamfest Calendar

Steve Ewald, WV1X, sewald@arrl.org; www.arrl.org/hamfests-and-conventions-calendar

A = AUCTION
D = DEALERS / VENDORS
F = FLEA MARKET
H = HANDICAP ACCESS
Q = FIELD CHECKING OF QSL CARDS
R = REFRESHMENTS
S = SEMINARS / PRESENTATIONS
T = TAILGATING
V = VE SESSIONS

Abbreviations
Spr = Sponsor
Tl = Talk-in frequency
Adm = Admission

ARRL SOUTHEASTERN DIVISION CONVENTION
August 21 – 22, Huntsville, Alabama
D F H Q R S V
Sat. 9 AM – 4:30 PM, Sun. 9 AM – 3 PM. *Spr:* Huntsville Hamfest, Inc. Von Braun Center, 700 Monroe St. SW. *Tl:* 146.94 (100 Hz). *Adm:* $10; children aged 12 and under, free. **www.hamfest.org**

Connecticut (Newtown) — Aug. 29 D F H R S T V
8 AM – 1 PM. *Spr:* Candlewood Radio Association. Edmond Town Hall, 45 Main St. *Tl:* 147.300 (100 Hz). *Adm:* $7, $1 discount with flyer. **www.cararadioclub.org**

Florida (Fort Pierce) — Aug. 14 D F H Q R S V
8 AM – 2 PM. *Spr:* Fort Pierce ARC. Indian River State College, 3209 Virginia Ave. *Tl:* 147.345 (107.2 Hz). *Adm:* $5 advance, $7 at-door. **www.fparc.org**

Florida (Tampa) — Aug. 21 F H Q R T V
8 AM – 1 PM. *Spr:* Tampa ARC. Tampa ARC Clubhouse, 7801 N. 22nd St. *Tl:* 147.105 (146.2 Hz). *Adm:* $5. **www.hamclub.org**

ARRL GEORGIA STATE ARES MEETING & CONVENTION
August 14, Forsyth, Georgia
H S
7:30 AM – 4:30 PM. *Spr:* Georgia ARES. Georgia Public Safety Training Center, 1000 Indian Springs Dr. *Tl:* none. *Adm:* none. Email: **kn4yz@arrl.net**

ARRL ILLINOIS SECTION CONVENTION
September 10 – 11, Naperville, Illinois
D H Q R S
8 AM – 5 PM. *Spr:* Northern Illinois DX Association. Chicago Marriott Naperville, 1801 Naper Blvd. *Tl:* none. *Adm:* $55 advance, $60 at-door. **www.w9dxcc.com**

Indiana (Avon) — Aug. 14 T
9 AM – 1 PM. *Spr:* Ham Emergency Radio Operations. Avon United Methodist Church, 6850 E. Hwy. 36. *Tl:* 147.015 (88.5 Hz). *Adm:* $5. Email: **kc9sqd425@gmail.com**

Indiana (Peru) — Aug. 28 D H R S V
9 AM – 2 PM. *Sprs:* Cass Co., Grant Co., Kokomo, and Miami Co. ARCs. Miami Co. 4-H Fairgrounds, 1029 W. 200 N. *Tl:* 147.345 (131.8 Hz). *Adm:* $5. **www.nci-hamfest.net**

Kansas (Hutchinson) — Aug. 14 F H R V
8 AM – 2 PM. *Spr:* Reno County Kansas ARA. Kansas National Guard Armory, 1111 N. Severance. *Tl:* 147.120 (103.5 Hz). *Adm:* donations requested. **www.rckara.org**

Louisiana (Shreveport) — Aug. 14 D F H Q R S V
8 AM – 2 PM. *Spr:* Shreveport ARA. Louisiana State Fair Agriculture Bldg, 3206 Pershing Ave. *Tl:* 146.820 (186.2 Hz). *Adm:* $5. **www.shreveporthamfest.com**

Massachusetts (Adams) — Aug. 22 D F H R T V
7 AM – noon. *Spr:* Northern Berkshire ARC. Bowe Field (Adams Agricultural Fairgrounds), 371 Old Columbia St. *Tl:* 146.91 (162.2 Hz). *Adm:* $5. **www.nobarc.org**

ARRL NEW ENGLAND DIVISION CONVENTION
September 10 – 12, Marlborough, Massachusetts
D F H Q R S T V
8 AM – 10 PM. *Spr:* Federation of Eastern Massachusetts ARA. Best Western Royal Plaza, 181 Boston Post Rd. *Tl:* 147.270 (146.2 Hz), 449.925 (88.5 Hz). *Adm:* $18. **www.hamxposition.org**

Michigan (Port Huron) — Aug. 29 F H Q R T
8 AM – noon. *Spr:* Eastern Michigan ARC. Great Lakes Maritime Center at Vantage Point, 5 Water St. *Tl:* 146.800 (100 Hz). *Adm:* free. Email: **ac8w@arrl.net**

Michigan (Shelby Township) — Aug. 21 D F
8 AM – noon. *Spr:* General Motors ARC. Packard Proving Grounds, 49965 Van Dyke Ave. *Tl:* 443.075 (123 Hz). *Adm:* $5 per carload buying or selling. **www.gmarc.org**

Minnesota (Brewster) — Aug. 28 F H R S V
9 AM – 1 PM. *Spr:* Northern Plains Regional Radio Council. Brewster American Legion Post, 825 3rd Ave. *Tl:* 146.67 (141.3 Hz). *Adm:* $5. **www.facebook.com/groups/NPRRC**

New York (Avoca) — Aug. 21 F H R T V
8 AM. *Spr:* Keuka Lake ARA. Howard Community Center, 7481 Hopkins Rd. *Tl:* 145.190 (110.9). *Adm:* $5. **www.klara.us**

New York (Rensselaer) — Aug. 21 D F R T
8 AM – 1 PM. *Spr:* East Greenbush ARA. East Greenbush Volunteer Fire Department Pavilion, 68 Phillips Rd. *Tl:* 147.270 (94.8 Hz). *Adm:* $6. **www.egara.club**

New York (Macedon) — Aug. 28 D F H R T V
7 AM – 2 PM. *Spr:* ROC City Net. The Log Cabin Family Restaurant, 2445 W. Walworth Rd. *Tl:* 145.110 (110.9). *Adm:* none. **www.facebook.com/groups/roccitynet**

North Carolina (Fayetteville) — Aug. 14 D F H R T V
8 AM – noon. *Spr:* Cape Fear ARS. Cumberland County Shrine Club, 7040 Ramsey St. *Tl:* 146.910 (100 Hz). *Adm:* none. **www.cfarsnc.org**

ARRL NORTH CAROLINA SECTION CONVENTION
September 3 – 5, Shelby, North Carolina
D F H Q R S T V
7 AM – 5 PM. *Spr:* Shelby ARC. Cleveland Co. Fairgrounds, 1751 E. Marion St. *Tl:* 146.880. *Adm:* $8 advance, $10 at-door. **www.shelbyhamfest.org**

Ohio (Owensville) — Aug. 28 D F H Q R T V
8 AM – 1:30 PM. *Spr:* Milford ARC. Clermont County Fairgrounds, 1000 Locust St. *Tl:* 147.345 (123.0 Hz). *Adm:* $5. **www.cincinnatihamfest.org**

Pennsylvania (New Kensington) — Aug. 29 F Q R T
8 AM – 2 PM. *Spr:* Skyview Radio Society. Skyview Radio Society Clubhouse, 2335 Turkey Ridge Rd. *Tl:* 146.640 (131.8). *Adm:* $5. **www.skyviewradio.net**

Pennsylvania (Uniontown) — Aug. 14 D F H R T V
7 AM, tailgaters; 8 AM, attendees. *Spr:* Uniontown ARC. Uniontown ARC Clubhouse, 433 Old Pittsburgh Rd. *Tl:* 147.045 MHz (131.8 Hz). *Adm:* free. **www.w3pie.org**

Emergency and Volunteer Training

Some excellent emergency and volunteer training is available through the American Red Cross of Ventura County, FEMA and the American Radio Relay League.

Red Cross Courses

The following is a list of locally available Red Cross courses and a current schedule of classes over the next two months. Enroll by calling the Red Cross Chapter House at 805-987-1514 Ext 320 leaving your name, course code and telephone number. If you are interested in a class not currently scheduled call to be placed on a waiting list for the next scheduled date.

Note: The classes **Fulfilling Our Mission** and **Introduction to Disaster Services** are required for all Red Cross classes if you are not currently registered as a Red Cross Volunteer.

For training class registration, call: 805-987-1514 Ext 320.

Course schedule and descriptions:

http://www.arcventura.org/DSCourseDescriptions.html

http://www.arcventura.org/contact_us.html

COLLABORATING TO ENSURE EFFECTIVE SERVICE DELIVERY(ARC3089-4)
COMMUNITY SERVICES OVERVIEW (ARC 3068-1)
DISASTER ASSESSMENT (ARC 3067-1)
DISASTER HEALTH SERVICES: OVERVIEW (3076-1F)
DISASTER HEALTH SERVICES SIMULATION (ARC 3076-2F)
DISASTER MENTAL HEALTH SERVICES (ARC 3077-1F)
DISASTER MENTAL HEALTH: AN OVERVIEW (ARC 3077-2)
DISASTER WELFARE INQ.:CONNECTING YOUR COMMUNITY(ARC 3085-1)
DISASTER WELFARE INQUIRY SIMULATION (ARC 3085-2)
EMERGENCY OPS CENTER/INCIDENT COMMAND LIAISON (ARC 3089-5)
ERVs: READY, SET, ROLL (ARC 3068-4)
FAMILY SERVICES: PROVIDING EMERGENCY ASSISTANCE (ARC 3072-1)
FINANCIAL STATISTICAL INFORMATION MANAGEMENT (ARC 3078-2)
HUMAN RESOURCES IN DISASTER (ARC 3087-3F)
LOGISTICS: AN OVERVIEW (ARC 3087-1)
LOGISTICS SIMULATION (ARC 3071-2)
MANAGING TOTAL DIVERSITY
MASS CASUALTY DISASTER (ARC 3079 1F)
PUBLIC AFFAIRS IN DISASTER 1 (ARC 3080 1F)
SAFE FOOD HANDLING WORKSHOP
SHELTER OPERATIONS (ARC 3068-11)
SHELTER SIMULATIONS (ARC 3068-12)
WORKING WITH TOTAL DIVERSITY

Scheduled Red Cross Classes

For training class registration, call: 805-987-1514
Please try to register for classes a week before the class is being offered

FEMA Courses

The following free **FEMA Independent Study Courses** are recommended. There are several other FEMA courses available; see the other courses at http://training.fema.gov/is

IS-5.a An Introduction to Hazardous Materials - (10/31/2013)
IS-10.a Animals in Disasters: Awareness and Preparedness - (10/2/2015)
IS-11.a Animals in Disasters: Community Planning - (10/2/2015)
IS-15.b Special Events Contingency Planning for Public Safety Agencies - (10/31/2013)
IS-20.19 Diversity Awareness Course 2019 - (1/30/2019)
IS-21.17 Civil Rights and FEMA Disaster Assistance - (1/25/2017))
IS-26 Guide to Points of Distribution - (8/11/2010)
IS-27 Orientation to FEMA Logistics - (10/31/2013)
IS-29 Public Information Officer Awareness - (10/31/2013)
IS-33.19 FEMA Initial Ethics Orientation 2019 - (1/30/2019)
IS-35.19 FEMA Safety Orientation 2019 - (1/30/2019)IS-36 Multi-hazard Planning for Childcare - (10/31/2013)
IS-42 Social Media in Emergency Management - (10/31/2013)
IS-75 Military Resources in Emergency Management - (2/25/2011)
IS-100.b Introduction to Incident Command System, ICS-100 - (10/31/2013)
IS-111.a Livestock in Disasters - (10/31/2013)
IS-144 Telecommunicators Emergency Response Taskforce (TERT) Basic Course - (10/31/2013)
IS-162 Hazard Mitigation Floodplain Management in Disaster Operations - (11/16/2016)
IS-200.b ICS for Single Resources and Initial Action Incidents - (10/31/2013)
IS-230.d Fundamentals of Emergency Management - (12/16/2013)
IS-235.c Emergency Planning - (12/15/2015)
IS-240.b Leadership and Influence - (6/16/2014)
IS-241.b Decision Making and Problem Solving - (3/31/2014)
IS-242.b Effective Communication - (3/31/2014)
IS-244.b Developing and Managing Volunteers - (3/29/2013)
IS-250.a Emergency Support Function 15 (ESF15) External Affairs: A New Approach to Emergency Communication and Information Distribution - (5/7/2012)
IS-271.a Anticipating Hazardous Weather & Community Risk, 2nd Edition - (10/31/2013)
IS-288.a The Role of Voluntary Organizations in Emergency Management - (2/12/2015)
IS-315 CERT Supplemental Training: The Incident Command System - (8/13/2013)
IS-317 Introduction to Community Emergency Response Teams - (6/26/2014)
IS-320 Wildfire Mitigation Basics for Mitigation Staff - (10/31/2013)
IS-322 Flood Mitigation Basics for Mitigation Staff - (10/31/2013)
IS-323 Earthquake Mitigation Basics for Mitigation Staff - (10/31/2013)
IS-325 Earthquake Basics: Science, Risk, and Mitigation - (10/31/2013)
IS-326 Community Tsunami Preparedness - (10/31/2013)
IS-366.a Planning for the Needs of Children in Disasters - (12/9/2015)
IS-368 Including People With Disabilities & Others With Access & Functional Needs in Disaster Operations - (2/20/2014)
IS-393.a Introduction to Hazard Mitigation - (10/31/2013)
IS-405 Overview of Mass Care/Emergency Assistance - (12/10/2013)
IS-454 Fundamentals of Risk Management - (10/31/2013)
IS-546.a Continuity of Operations Awareness Course - (10/31/2013)
IS-547.a Introduction to Continuity of Operations - (10/31/2013)
IS-559 Local Damage Assessment - (10/31/2013)
IS-700.b An Introduction to the National Incident Management System - (6/25/2018)
IS-775 EOC Management and Operations - (8/6/2008)
IS-800.b National Response Framework, An Introduction - (1/20/2017)
IS-815 ABCs of Temporary Emergency Power - (12/27/2016)
IS-906 Workplace Security Awareness - (10/31/2013)
IS-907 Active Shooter: What You Can Do - (12/28/2015)
IS-909 Community Preparedness: Implementing Simple Activities for Everyone - (10/31/2013)
IS-910.a Emergency Management Preparedness Fundamentals - (10/19/2012)
IS-915 Protecting Critical Infrastructure Against Insider Threats - (7/10/2013)
IS-916 Critical Infrastructure Security: Theft and Diversion – What You Can Do - (10/31/2013)
IS-922 Applications of GIS for Emergency Management - (10/31/2013)
IS-951 DHS Radio Interoperability - (9/22/2016)
IS-2200: Basic Emergency Operations Center Functions - (5/17/2019)
IS-2500 National Prevention Framework, an Introduction - (3/27/2018)
IS-2600 National Protection Framework, An Introduction - (3/27/2018)
IS-2700 National Mitigation Framework, an Introduction - (3/27/2018)
IS-2900.a National Disaster Recovery Framework (NDRF) Overview - (7/11/2018)

The **ARRL** offers several on-line courses. The courses listed here are recommended for those involved in disaster and emergency service. See these and other courses at the ARRL web site.

Introduction to Emergency Communication EC-001
HF Digital Communications EC-005
PR-101: ARRL Public Relations (EC-015)
Public Service and Emergency Communications Management for Radio Amateurs- EC-016

There are some costs with the ARRL courses but discounts and occasional scholarships are available to ARRL members. See ***www.ARRL.org*** for details and enrollment.

ACS/ARES Frequency Updates

The Tuesday night Ventura County ARES/ACS Net is held on the WD6EBY Sulphur Mt. Repeater. Local nets are 7:00 to 7:30 PM; County Net starts at 7:30 on WD6EBY Sulphur Mt. Repeater 145.200 (-) PL 127.3 / 445.560 Mhz(-) PL 141.3

Good Frequencies to have pre-programmed into your radios...

Area 1 Simi Valley – K6ERN 146.805 Mhz (-) PL 100.0
Area 2 Conejo Valley, T. Oaks, Newbury Park – N6JMI 147.885 Mhz (-) PL127.3 BOZO
Area 3 Camarillo, Somis,– K6ERN 147.915 Mhz (-) PL 127.3
Area 4 Oxnard, Port Hueneme, NBVC – WB6YQN 146.970 Mhz (-) PL 127.3
Area 5 Ojai Valley – N6FL 145.400 Mhz (-) PL 114.8
Area 6 Ventura City – WA6ZSN 146.385 Mhz (+) PL 127.3
Area 7 Santa Paula, Fillmore, Piru – WA6ZSN 146.385 Mhz (+) PL 127.3
Area 8 Moorpark, Santa Rosa Valley – K6ERN 145.460 Mhz (-) PL 127.3
County-Wide – WD6EBY 145.200 (-) PL 127.3
ACS Portable – VCACS/p 144.930/147.585 Mhz PL 127.3

WD6EBY SP 145.420 Mhz (-) PL 127.3
WD6EBY 447.480 (-) PL 156.7 Hz South Mtn.
K4NGL 145.360 Mnz (-) PL 156.7 Kimberly Peak

Other Good Area Frequencies ...

AA6DP 147.090 Mhz (+) No PL Catalina
K0AKS 147.150 Mhz(-) PL127.3 TOaks
K6CPT DCS 145.300 Mhz (-) PL100.0 LA DCS
K6CPT DCS 147.270 Mhz (-) PL100.0 LA DCS
K6DCS DCS22 147.225 Mhz (+) PL 94.8 LA DCS
K6ERN 146.880 Mhz (-) PL 127.3 SMRA Red Mt.
K6ERN 147.765 Mhz (-) PL 127.3 Olivas Park / SMRA
K6TZ 146.790 Mhz (-)PL131.8 SBARC
KB6C 147.735 Mhz (-) PL 100.0 Oat Mt / MMRA
N6EVC 146.850 Mhz (-) PL 94.8 Rasnow
N6FDR 145.260 Mhz (-) PL 100.0 Malibu
W6AAX 147.180 Mhz (+) PL 186.2 Verdugo Peak
W6GRG 146.940 Mhz (-) PL 127.3 Simi DSW Repeater
W6YJO 145.180 Mhz (-) PL 131.8 Sta Ynez
WA6FGK 146.640 Mhz (-) PL 127.3 Simi Valley
WA6PPS 147.300 Mhz (-) PL 110.9 L.A.City ACS
WB6OBB 147.000 Mhz (+) PL 131.8 Sta Barbara
WD6EBY 145.240 MHz (-) PL 127.3 Chatsworth Pk

Due to assignment and coordination of several D-Star Repeaters, TASMA, the southern California Two meter amateur frequency coordination body, has had to re-align several frequencies. Among these changes are the channelization (15 KHz spacing) of the 145.5 - 145.6 simplex allocation and reassignment of several frequencies from simplex to other uses.

None of the local Ventura County repeaters are directly affected; however several previous simplex frequencies are now in use either as repeater inputs or outputs. **New County ARES Packet frequency is 145.050 Mhz**;

Ventura County ARES-ACS simplex frequencies have been re-assigned as follows:

Area 1 Simi Valley – 145.510 Mhz (S)
Area 2 Conejo Valley, T.O., Newbury Pk – 146.445 Mhz (S)
Area 3 Camarillo, Somis – 146.550Mhz (S)
Area 4 Oxnard, Port Hueneme, NBVC – 146.595Mhz (S)
Area 5 Ojai Valley – 145.555Mhz (S)
Area 6 Ventura City – 147.510Mhz (S)
Area 7 Santa Paula, Fillmore, Piru – 145.540 Mhz (S)
Area 8 Moorpark – 146.535Mhz (S)
County ARES Simplex – 145.615 Mhz (S)
National Simplex – 146.520Mhz(S)

Ventura County ARES / ACS Emergency Coordinators

ACS RO/ARES DEC: Rob Hanson, W6RH, Email: w6rh@arrl.net
Assist ACS RO/Deputy DEC: Rick Tate, KQ6NO Email: kq6no@arrl.net

Area 1 Simi Valley EC: Steve King, KE6WEZ Email: ke6wez@gmail.com
Area 2 TO, Conejo Valley EC: Zack Cohen, N6PK , Email: n6pk@arrl.net
Area 3 Camarillo, Somis EC: Avi Carmi, K6AVI Email: avi@carmi.us
Area 4 Oxnard, Hueneme, Mugu EC:Hovan Salibian, KI6BQL Email: ki6bql@arrl.net
Area 5 Ojai EC: Wayne Francis, W6OEU Email: w6oeu@arrl.net
Area 6 City of Ventura EC (acting): James (Jim) Aguirre KM6GUE Email: KM6GUE@gmail.com
Area 7 Santa Paula, Fillmore, Piru EC: James (Jim) Aguirre KM6GUE Email: KM6GUE@gmail.com
Area 8 Moorpark, Santa Rosa Valley EC: Marc Hanley KM6B, Email: km6b@arrl.net

ACS/ARES Training and News Rob Hanson W6RH

Rob Hanson W6RH Ventura County ACS Radio Officer, Ventura County ARES District Emergency Coordinator

FCC and FEMA: How to Communicate Before, During and After a Major Disaster

By Craig Fugate, Administrator of the Federal Emergency Management Agency and Julius Genachowski, Chairman of the Federal Communications Commission.

Ask anyone who has lived through a significant disaster what that experience was like and – without a doubt – one of the things some people are likely to recall is how difficult it was to communicate from their mobile phones with friends, family and emergency services like 911 in the immediate aftermath.

Many of us were reminded of this last month, when both a 5.8 magnitude earthquake and Hurricane Irene struck parts of the East Coast. People immediately reached for their phones to call loved ones or 911. Unfortunately, in some cases, loss of power made communication difficult.

The FCC and FEMA are doing everything we can to empower the public to be prepared for all emergencies (you can visit Ready.gov or Listo.gov to learn more). But one of the lessons learned from that August earthquake was that we can do more to educate the public about the most effective ways to communicate before, during and after a disaster.

Today, we are pleased to release a set of new, easy-to-follow tips to help all Americans prepare their homes and mobile phones for a disaster. These tips are practical things everyone can do to better preserve the ability to communicate effectively during – and immediately after – a disaster.

While we don't have control over when or where the next disaster will strike, we do have control over what we do to prepare. Check out these tips and please, take one more step and share it with your networks. Use Twitter, Facebook, email or a good old-fashioned phone call to help us spread the word – and help more Americans get ready before the next disaster strikes.

(Continued on next page)

ACS/ARES Training and News Rob Hanson W6RH (Continued)

Before a Disaster: How to Prepare Your Home and Mobile Device

1. Maintain a list of emergency phone numbers in your cell phone and in or near your home phone.

2. Keep charged batteries and car-phone chargers available for back-up power for your cell phone.

3. If you have a traditional landline (non-broadband or VOIP) phone, keep at least one non-cordless phone in your home because it will work even if you lose power.

4. Prepare a family contact sheet. This should include at least one out-of-town contact that may be better able to reach family members in an emergency.

5. Program "In Case of Emergency" (ICE) contacts into your cell phone so emergency personnel can contact those people for you if you are unable to use your phone. Let your ICE contacts know that they are programmed into your phone and inform them of any medical issues or other special needs you may have.

6. If you are evacuated and have call-forwarding on your home phone, forward your home phone number to your cell phone number.

7. If you do not have a cell phone, keep a prepaid phone card to use if needed during or after a disaster.

8. Have a battery-powered radio or television available (with spare batteries).

9. Subscribe to text alert services from local or state governments to receive alerts in the event of a disaster. Parents should sign up for their school district emergency alert system.

During and After a Disaster: How to Reach Friends, Loved Ones & Emergency Services

1. If you have a life-threatening emergency, call 9-1-1. Remember that you cannot currently text 9-1-1. If you are not experiencing an emergency, do not call 9-1-1. If your area offers 3-1-1 service or another information system, call that number for non-emergencies.
(Continued on next page)

ACS/ARES Training and News Rob Hanson W6RH (Continued)

During and After a Disaster: How to Reach Friends, Loved Ones & Emergency Services (Continued)

2. For non-emergency communications, use text messaging, e-mail, or social media instead of making voice calls on your cell phone to avoid tying up voice networks. Data-based services like texts and emails are less likely to experience network congestion. You can also use social media to post your status to let family and friends know you are okay. In addition to Facebook and Twitter, you can use resources such as the American Red Cross's Safe and Well program.

3. Keep all phone calls brief. If you need to use a phone, try to convey only vital information to emergency personnel and/or family.

4. If you are unsuccessful in completing a call using your cell phone, wait ten seconds before redialing to help reduce network congestion.

5. Conserve your cell phone battery by reducing the brightness of your screen, placing your phone in airplane mode, and closing apps you are not using that draw power, unless you need to use the phone.

6. If you lose power, you can charge your cell phone in your car. Just be sure your car is in a well-ventilated place (remove it from the garage) and do not go to your car until any danger has passed. You can also listen to your car radio for important news alerts.

7. Tune into broadcast television and radio for important news alerts. If applicable, be sure that you know how to activate the closed captioning or video description on your television.

8. If you do not have a hands-free device in your car, stop driving or pull over to the side of the road before making a call. Do not text on a cell phone, talk, or "tweet" without a hands free device while driving.

9. Immediately following a disaster, resist using your mobile device to watch streaming videos, download music or videos, or play video games, all of which can add to network congestion. Limiting use of these services can help potentially life-saving emergency calls get through to 9-1-1.

10. Check Ready.gov regularly to find other helpful tips for preparing for disasters and other emergencies. (Continued on next page)

ACS/ARES Training and News Rob Hanson W6RH (Continued)

Winlink Express version 1.5.38.0 has been released. You can get the update using the normal autoupdate procedure.

Changes since version 1.5.37.0:
* Encrypt the callsign and tactical address passwords.
* Enable or disable the Show Password checkbox depending on whether a new password is being entered or an old password is being used.
* Reduce the number of times COM port open tries are done before deciding the port can't be opened.
* Fix some problems with enabling/disabling channel selection and map options on Winlink vs P2P sessions.
* Fix a bug that didn't retain Radio-only or P2P message type when a message was edited.
* Change the Vara FM channel selection list to show "Narrow" and "Wide" rather than "1200" and "9600" baud.
* Allow channel frequencies up to 71 MHz to cover the 4m band for European users (Not legal for USA hams)
* Allow message priority indicators like P/ to be specified without requiring //WL2K in front of them.
* Enable Autoconnect option for Vara FM sessions.
* Add Autoconnect option to Vara FM and Packet sessions to call when an outgoing message is posted for the selected station.
* Add a new template option "Type:RO" to designate that a message is to be sent Radio-only.
Phil
W4PHS

Wings Over Camarillo Air Show is on!

By Avi Carmi K6AVI
Free entrance to the show, parking, hat, pancake breakfast, lunch, and all the water and soft drinks you can drink
Stroll through the show and provide eyes/ears/comms
Plan on lots of walking for four hours in the hot August sun.
Bring your HT, headset/earpiece, yellow shirt, communications vest (if you have one) hat, sunscreen, water, etc
The Ham Radio assignments are password protected, click on the following link which includes the password:
Click here to sign up for Ham Radio Operations at Wings Over Camarillo
(Continued on next page)

ACS/ARES Training and News Rob Hanson W6RH (Continued)

Wings Over Camarillo Air Show is on! (Continued)

If you somehow end up at the top-level public landing page https://woc.volunteerlocal.com click on the "Sign up now" link, which will take you to the signup form, then enter ham73 in the password field and click Submit
Please do not share the password publicly as there are lots of nasty disruptive people out there :-(
But do feel free to forward this to any ham operator club or group
The instructions on the signup site are "generic", most do not apply to us, so please follow these instructions to sign up:
1- MAKE SURE to click on the "view description" as there are important assignment notes in there!
2- Check off your desired assignment (or assignments, as long as they are not both AM or PM shifts, note that I disabled "overlap check" since schedules do overlap by an hour, you may still sign up for both AM and PM shifts)
NOTE: only the currently AVAILABLE assignments are shown by the system, if you do not see a desired assignment, it means that it is taken
If you cannot sign up for any other time slot/assignment, please contact me, and I'll see if I can arrange a swap.
NOTE: the "gate" position can be an "add on" assignment for a color or a rover, it entails coming in early and sitting at Gate 7 for about two hours to check-in ham volunteers, then over to the comm trailer for the briefing and to your primary assignment, or as another rover/floater/standby
NOTE: new to this year is a show director shadow, which should be a very exciting close-up assignment, you will have two radios: a commercial show radio and your ham radio. The Shadow will follow the show director and provide communication support. you are welcome to sign up for two consecutive Shadow shifts and stay with the show director for the entire day.
3- Scroll down to the bottom or the form
4- Fill in your email, name, phone
5- Select "Avi Carmi K6AVI" for CWA Job Captain and "Ham Radio Operators" for the CWA Group from the respective pulldown lists
6- Skip the CAF/AAF fields, fill in your birthdate if under 18 (don't you wish?)
7- Don't forget your call sign at the bottom
8- Then check the box and fill your name under the waiver
9- And finally, click the "Sign Up To Volunteer" button
you should receive a confirmation email, unfortunately, it will come from Stephen, the show's volunteer coordinator, not me. (also I do not get any notification that anyone signed up, only he does...) a generic map, our sector map, and the parking permit are available on your volunteer profile page, accessible by clicking the "Check your status here" button on https://woc.volunteerlocal.com (Continued on next page)

ACS/ARES Training and News Rob Hanson W6RH (Continued)

Wings Over Camarillo Air Show is on! (Continued)

I will send more detailed directions/instructions prior to the show, but if you have any questions/concerns/comments, please let me know

73,

-avi

73, Rob W6RH

ARES Training and News (Continued)

ARRL offers online training for hams who want to participate in the Amateur Radio Emergency Service.

The time for training is before a disaster...not during one.

The former Amateur Radio Emergency Communications (AREC) series of three training courses has been reconfigured into two courses: An introductory course and a course for leaders and managers.

Introduction to Emergency Communication (#EC-001)

Revised in 2018, this is an update of the former Level 1 course. It is designed to provide basic knowledge and tools for hams who want to serve as a Public Service volunteer. It provides an opportunity for non-hams who rely on communications in emergency situations to learn about Amateur Radio and its unique role in emergencies.

For start dates, registration deadlines and more visit www.arrl.org/online-course-catalog

Public Service and Emergency Communications Management for Radio Amateurs (#EC-016)

Launched in 2010, this course is designed for Amateur Radio operators who will be in leadership and managerial roles, organizing other volunteers to support public service activities and communications emergencies. Participants will learn how radio amateurs prepare to support local community events and, when working in coordination with governmental and emergency response organizations, how to deploy their services. This is a self-study course. For more information and to register visit www.arrl.org/online-course-catalog.

PR-101: ARRL Public Relations (EC-015)

This is a basic training course for PIOs and anyone interacting with the media and promoting Amateur Radio.

This course is designed to give hams a quick overview in public relations activities. It uses the skills of experts in various aspects of public relations to provide volunteer Public Information Officers with the basic skills and expectations that a PIO needs to know to be effective in their home region.

PR-101 covers everything from the basic news release to Web sites and video work.

This course is available--free! – on-line, or can be purchased in CD format from the ARRL store.

Local Area Radio Weekly Nets Wayne Woodhams N6WIX

Monday

Cuckoo Net 146.790 MHz (-) 131.8 Hz PL and 145.180 MHz (-) 131.8 Hz PL MTWThF from 08:00 Hrs

Auxiliary Bored Meeting: MTWThF at 09:00 and on Saturday at 21:00 Hrs : Bozo Repeater Frequency: 147.885 MHz Offset: -PL: 127.3

California Rescue ARES Net 7.25 MHz MTWThF 08:30 Hrs

Santa Barbara South County ARES net 19:30 Hrs on 146.79 MHz (-) PL 131.8.

Southwest ACS Nets Every Monday at 18:30 Hrs, on a local station on the Cactus Intertye Network. Check-in by roll call. 4th Monday "grid test" 20:30 Hrs.

LA DCS-22 Net – 19:30 Hrs - K6DCS - 147.225 MHz (+) then on 7.2353 MHz LSB

K6MEP Net -20:00 Hrs 145.200 MHz (-) 127.3 PL

CESN (California Emergency Services Net) at 20:00 Hrs Primary frequency - 3992 kHz, Backup frequency - 3960 kHz. All free to listen, check-in by membership only.

LA Section ARES Net - HF Every Monday following the VHF/UHF net (21:30 Hrs) 1st. 3rd and 4th Monday - 75 meters 3.995 MHz (± 45 kHz) / 2nd Monday -10 meters 28.495 MHz

Tuesday

Cuckoo Net 146.790 MHz (-) 131.8 Hz PL and 145.180 MHz (-) 131.8 Hz PL MTWThF from 08:00 Hrs

California Rescue ARES Net 7.250 MHz MTWThF 08:30 Hrs

Ventura County ARES-ACS 6 Meter Net - between 18:45 Hrs to 19:00 Hrs K6SMR 52.980 MHz (-) PL 82.5 SMRA Red Mt

Ventura County ARES-ACS Simplex Net - 18:30 Hrs on 147.510 MHz Simplex ORT schedule only!

Ventura County ARES-ACS HF Net - between 18:30 Hrs to 19:00 Hrs 40M on 7.235 MHz LSB +/-

Ventura County ARES/ACS Nets between 19:00 and 20:00 Hrs. The County-wide net starts at 19:30 Hrs and normally finishes by 20:00 Hrs on WD6EBY 145.200 MHz (-) /127.3 PL

SBARC Swap Net 146.790 MHz (-) / 131.8 Hz PL and 145.180 MHz (-) / 131.8 Hz PL 19:30-20:00 Hrs

West SB ARES HF Net (1" Tuesday, Monthly) 3822 kHz LSB 20:30 Hrs

6-Meter Roundtable - 50.125 MHz USB First Tuesday of each month 20:00 Hrs

ATV Net 20:30 Hrs 148.790 MHz (-) / 131.8 Hz PL RITZ repeater

SBARC Digital Communications Net 146.790 MHz (-) / 131.8 Hz PL and 145.180 MHz (-) / 131.8 Hz PI 8:00 - 10:00 PM

Wednesday

Cuckoo Net 146.790 MHz (-) 131.8 Hz PL and 145.180 MHz (-) 131.8 Hz PL MTWThF from 08:00 Hrs

California Rescue ARES Net 7.25 MHz MTWThF 08:30 Hrs

CESN (California Emergency Services Net 10:00 Hours, Primary frequency 7192 kHz, Backup frequency - 7230 kHz All free to listen, check-in by membership only.

SMRA Tech Net 146.880 MHz (-) / 127.3 PL (SMRA Red Mt) 20:00 Hrs

SBARC Swap Net 146.790 MHz (-) / 131.8 Hz PL K872 20:00 Hrs

Teamtalk Voice Net.20:00 Hrs k6pvr-svr.local.mesh server http://www.pvarc.club/mesh/mesh-applications/

Thursday

Cuckoo Net 146.790 MHz (-) 131.8 Hz PL and 145.180 MHz (-) 131.8 Hz PL MTWThF from 08:00 Hrs

California Rescue ARES Net 7.25 MHz MTWThF 08:30 Hrs

So Cal 6 meter net. 51.940 MHz - pl 82.5. 19:00-20:00 Hrs

Southern Calif 6M SSB Technical Roundtable Net 20:00 Hrs on 50.2 MHz USB SSB

SBARC / K6TZ Technical Mentoring Net 20:00-21:00 Hrs 146.790 MHz (-) / 131.8 Hz PL and 224.08 MHz (-) 131.8 PL (linked)

Friday

Cuckoo Net 146.790 MHz (-) 131.8 Hz PL and 145.180 MHz (-) 131.8 Hz PL MTWThF from 08:00 Hrs

California Rescue ARES Net 7.250 MHz MTWThF 08:30 Hrs

Saturday

Military Radio Collector Net 18:00 Hrs 3985 kHz AM vavw.mrcuwestord/mrca-radio-nets/

Sunday

ARRL Southwestern Division Net 08:00 Hrs 3965 MHz. ARRL Officers check in first. All visitors welcome at end of that net

Newbie Net 19:00-19:30 Hrs Bozo Repeater 147.885 MHz (-) PL127.3

Rabbit Net 19:00 Hrs Linked Rabbit repeater.

News from the Pleasant Valley Amateur Radio Club

Hello All!

We have had some great system updates I would like to share with you.

Sulphur Mountain

The new battery backup was installed earlier this year and is performing very well. We have had a few Edison outages since the new batteries were installed and the system has maintained uninterrupted operations. The only indication I had of these outages was the status emails I received from the radio site monitor.

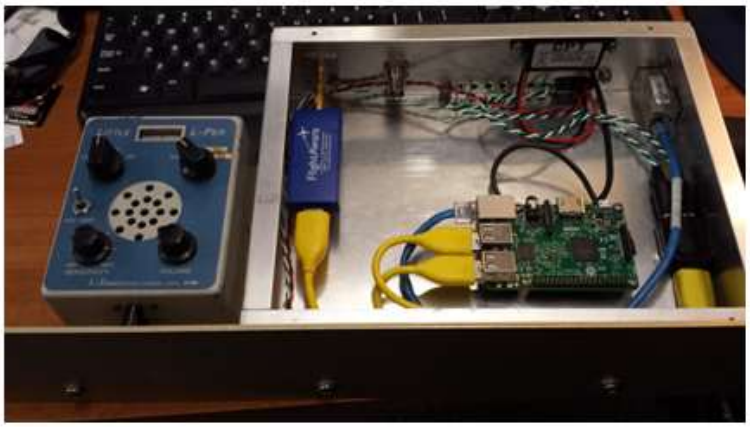
The battery bank is maintained from two independent charge systems, a 1 KW solar system and a 1 KW AC power system. I spoke with the engineers from Morning Star Solar and IOTA Engineering, they both agreed that having these two parallel charging sources would not present a problem.

After monitoring the voltage rates for some time I found a slight charge variation that I could not account for. I have came to understand each of these 3-stage charging systems have slightly different charging set points and at times would not charge in unison. To correct this slight charge differential, I isolated the two charging systems using two poles of an industrial 100 amp Alan Bradley relay. During an Edison outage the battery bank will remain charged from the 1KW Solar system. This site monitor will alert me should both charging systems fail. Monitoring the battery terminal voltage these past weeks shows a more stable battery stable float voltage. The battery system will maintain system operations in excess of 36 hours without a charge.

The Sulphur Mtn. ADS-B Aircraft transponder tracking system is down. The SD memory card of the Raspberry Pi used for this receiver has again failed. This is the third such failure of the memory in 3 years. We believe it's the constant writing to the SD card that causes these failures. It's like walking on the same piece of carpet all the time and that spot wears out. Even though the newer SD card technology provides a longer life to the card they are still not infallible. In this rebuild we be installing a Solid State USB drive to take on the task of the constant data writing and leaving the SD card to the task of the initial program load only. Hopefully we will not have to address this issue again.

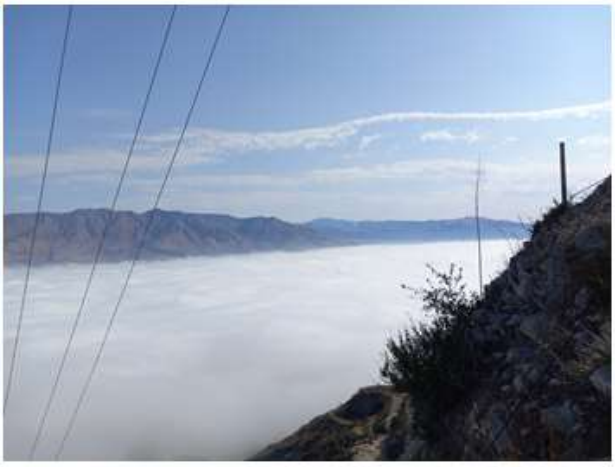
(Continued on next page)

News from the Pleasant Valley Amateur Radio Club (Continued)



South Mountain

On Friday July 16th the team made a visit to South Mountain to install new mesh network hardware and make a frequency change for the PVARC VHF repeater. As we were going through Santa Paula and going up the mountain we were in scattered rain and heavy clouds until we reached the mountain top. From the top you could imagine you were on an island overlooking a vast sea.



The mesh network portion of the project was not just an upgrade but rather an addition to the network. Two new access points were installed plus two backbone links to fully integrate these network nodes into the system. The new north mesh access point provides coverage into Santa Paula, Fillmore and parts of Piru while the new southeast access point provides improved coverage into Moorpark and Thousand Oaks.

The team laid, trimmed and glued over 150 ft of PVC conduit to the network node location literally over a goat trail. Laying this PVC conduit was a major task. With the PVC conduit laid the pull string was vacuumed through and four 200 foot lengths of network cable were spooled out and prepped to be pulled through. It took some time and a lot of coordination and a lot of cable lube but the team got the cables through the PVC conduit leaving about 25 feet at each end for terminations.

(Continued on next page)

News from the Pleasant Valley Amateur Radio Club (Continued)

(Continued on next page)

News from the Pleasant Valley Amateur Radio Club (Continued)

The network connectors were installed at the remote network location and plugged into the network lightning protection panel. Once completed the remote team members departed the hilltop. Excellent work by all!

Eric and I stayed to install the network connectors at the main building and power up the new instillation. With the connectors installed, the switch was turned on and, but 'nothing'; the remote network equipment was not powering up. Eric trudged back and forth a few times to confirm the connectors were crimped properly at both ends. We had no idea what was wrong or what to try next.

Feeling defeated we decided to finish up, try to understand what happened and come back another day.
That evening I was speaking with Orv W6BI and he told me of a similar issue with a network installation he had done in Santa Clarita. That installation used a network lightning protection similar to what I was using and Orv had found these units had no network pass-thru connection for the POE power. I had some spare protection units so I installed on in a bench setup and, and, and, 'nothing'. So out came the ohmmeter. I also found that these units did NOT pass the required POE voltage to the radios. That was my aha moment. After some discussion with Orv, we decided the best course would be to temporally install simple Cat5 female to female adapters in place of the lightning suppressor units to get the equipment operational.

Sunday July 18th Eric and I made a return trip to South Mountain. We started at the remote Mesh location and with battery and laptop in hand aligned the backbone dish antennas and confirmed the network nodes were locally operational. With alignment completed we installed the Cat5 female to female adapters, packed up and headed for the Main building. This time when we powered up the switch all of the remote network units came up. The backbone link to Camarillo and Chatsworth Peak were up and passing traffic. With all items powered up and remotely accessible we packed up and came home. The nodes will be fully configured the first week of August. Once configured, Orv W6BI will send out an update as to the coverage pattern and frequencies of the two new Mesh access points.

VHF South Mountain Repeater Status

Finding a viable VHF frequency for the PVARC South Mountain VHF Repeater is proving to be a challenge. South Mountain has a surprisingly larger coverage area than I would have expected. South Mountain is reported as having an S-8 signal in Costa Mesa in Orange County, and the coverage east 110 miles away is so strong in Redlands that it interferes with a local co-channel repeater. It may take some time but I am determined I will find a usable frequency for the PVARC VHF South Mountain Repeater

---

I want to thank everyone for their service to this project. This instillation could have not been possible without the dedication of the Team members that busted their backsides to make this so successful. If you see these folks or talk to them on the radio please also thank them for their time and expertise.

Robert Shank KM6RSS
James Norton KN6MUI
Mark Swaney KD6ASL
Jay Zatz WB6YQN
Eric Satterlee KG6WXC
Mike Lee K6MJU and Son

Please contact me if you have any questions or concerns.
Thank you all for your time

Paul Strauss
WD6EBY / K6PVR
pgstrauss@verizon.net

ARRL Santa Barbara Section John Kitchens NS6X

(Will be repeated until John contacts me that the positions are filled)

Hello all,

I have been trying to fill Section volunteer positions for a while. I am giving another push. I am pleased to let you know that our Section Emergency Coordinator is Richard Tate, KQ6NO from Santa Paula. (Congratulations and thanks to Rick for taking on this position in addition to his ACS/ARES assignment as Assistant ACS Radio Officer/ARES Assistant DEC.

Richard will be contacting you to see how each county operates emergency communications, and to see how the ARES SEC role will be able to assist and coordinate between the 3 counties in the Section. I have been the SEC for about 3 years. I should not be both the Section Manager and SEC. We need to have more focus on each position.

I am looking forward to spending more time on being SM. One of the tasks that I have passed off to Rick, among others, is the EmComm and volunteer hours reporting to ARRL headquarters.

Additionally, Andy Ludlum, K6AGL, member of the Conejo Valley Amateur Radio Club, has been appointed as the first Assistant Section Manager in the Santa Barbara Section. The SM position will be a club liaison for me, the Section Manager, to have a person in the know hopefully at each club. I really have little to no secret ARRL information, but when I am aware of issues, successes, opportunities, we can work together to accomplish our goals.

There are many volunteer positions to fill in the Section. The one that I am focusing on right now is the Section Traffic Manager. The STM will manage the Section's involvement in the National Traffic System. We need to work on and develop the NTS in the Section. There is quite a bit of work to do, but there are several dedicated volunteers in the Section, working within the NTS, who will make the system work.

Let me know if you would like to volunteer for the STM position, or any volunteer position. I'll be talking about specific positions in the coming months.

Santa Barbara Section Volunteers

Right now, we have 2 Section email systems. That is partly why we need volunteers to help rectify (electrical term) this issue. To make sure that everyone is getting the information, I will be sending emails through both systems. This email is for hams registered at the ARRL website as being in the Santa Barbara Section.

So, what do you get for being a volunteer? A special name/callsign badge and a certificate. And the satisfaction of helping ham radio in many aspects. I am still looking for volunteers to fill the remaining Section Leadership positions. The jobs are:

Assistant Section Manager (essentially a club liaison - one from each club, preferably)

Local Government Liaison (a person to be the contact for the local government, could be a city or county - to understand the local issues. Not to be a political operative or community organizer, but to be a positive contact for the local government, answer the government leader’s questions, be aware of whom the players are) (Continued on next page)

ARRL Santa Barbara Section **(Continued)**

Traffic manager - (the traffic system in the Section runs well, but needs a bit of coordination throughout the Section, and most importantly, finding new bodies to join the traffic system. Maybe the various Morse groups could provide people to be trained as traffic messengers).
Public Information Coordinators - (We have an excellent PIO, but each club should have someone who handles public information contacts, such as social media, print media, video (television, cable, YouTube etc.) media and more.)
Section Youth Coordinator (Doesn't need to be a teenager, but it could be. Someone who will focus ham radio toward the youth - schools, makers etc. Someone to help clubs do so, if they are so inclined.)
Club Coordinator (help get clubs active, motivated and working in the general support for ham radio. Some other type of groups will bring in a speaker to talk at all clubs for a reduced cost.
We would like to have a Santa Barbara Section conference again. Need someone to help make it happen - just a small conference/Hamfest - look at the Yuma Arizona Hamfest.
Technical Specialist (working with the Technical Coordinator, maybe have experts "Elmers" for various aspects and specialties. How to get on FT8 (why won't my computer key my KX3; I can decode signals, just not key the radio), contesting, setting up a station, RFI solutions, use of chokes and why, homebrewing, how to solder - or crimping - how to install a coax connector, what is DMR/etc. and how to make my radio work - what is a hotspot, and more. We could use a dozen or more people.
Webmaster (I am not a web guy. Who is, or what groups of people are, who could help us? We need a Section website)
Special Event coordinator (We have a small Section budget that can cover some costs such as website hosting). The following clubs are ARRL affiliated:
Conejo Valley ARC (Andy Ludlum, K6AGL Assistant Section Manager)
Ventura County ARC (K6MEP)
Ventura County ARS
Simi Settlers ARC
Santa Barbara ARC
UC Santa Barbara ARC
Paso Robles ARC
Cal Poly San Luis Obispo ARC
Satellite ARC
And hopefully Pleasant Valley ARC soon. (Continued on next page)

ARRL Santa Barbara Section (Continued)

There are more groups and clubs, which should not be ignored, but these are the "affiliated" clubs. The Section includes the counties of San Luis Obispo, Santa Barbara and Ventura. More schools, middle, high, community college and college/university should have a radio club.

Let me know if you would like to help, or get more information. Get one of those pretty, special color ARRL badges. No membership is required.
SB QST @ ARL $ARLB016
ARLB016 Amateurs' Email Addresses Will Continue to Be Kept Private, FCC Says

ARRL Board of Directors Creates Emergency Communications and Field Services Committee

At its just-concluded July 2021 meeting, the ARRL Board of Directors approved By-Law changes creating a third Standing Committee that joins the existing Administration and Finance Committee and Programs and Services Committee.

The charter of the new Emergency Communications and Field Services Committee (EC-FSC) is to develop and recommend new or modified Board policy and programs for emergency communications through the Amateur Radio Emergency Service® (ARES®) and National Traffic System™ (NTS™) entities.

The committee also will offer enhanced support for its Field Organization leadership volunteers, including Section Managers, and an increased focus on ARRL-Affiliated Clubs.

The EC-FSC will further provide guidance to the CEO in translating Board policy into prioritized tasking, funding, and staffing of programs, services, and training in support of amateur radio emergency communications, field organization volunteers, and recruitment and retention of new and existing members through assistance to Affiliated and Special Service Clubs.

The EC-FSC will have additional responsibility for monitoring and assessing trends in emergency communications technology and participant skills worldwide, and for identifying “best practices” for voluntary emergency communications provided by ARES and NTS, coordinating and cooperating with other amateur radio national societies as appropriate. — Thanks to The ARES Letter72/73

John Kitchens, NS6X
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Somis, CA 93066
805.216.2569 NS6X@ARRL.org

Meeting Location Maps

K6MEP Membership Application/Renewal. Please pay your 2021 Dues. Please mail the completed form (see below) or the one on K6MEP.org. Dues are now $5 (Jul-Sep).

To join the Ventura County Amateur Radio Club, Inc. (also known as VCARC or K6MEP), complete and send form, along with $20 annual dues, to VCARC P.O. Box 2103 Oxnard CA 93034-2103

Checks can be written to either Ventura County Amateur Radio Club, Inc. or VCARC

Pro-rate dues as follows based on our calendar year ending October 31 (Oct-Dec = $20, Jan-Mar = $15, Apr-Jun=$10, Jul-Sep=$5). Existing members should renew every October =$20.

Name (Last, First)_____Call sign_____License Type_____

Address Street_____City, State Zip_____

Email_____Telephone_____Date of Application_____

Y/N for the following: New Member _____ Renewing _____ Member of ARRL?_____

I'd Like To See/Do....

TOPIC	YOUR INTEREST LEVEL			COMMENTS
	Meh	Ok	Yayy!	
All about coax cables				
Amateur Radio Satellites				
Antenna construction project				
Antenna ordinances				
ARES, ACS, CERT, RACES, MARS, SkyWarn				
Assembling a Go-Box				
Assembling a test lab				
Best bands to get on & what to expect				
Construction projects, like_____				
Ferrites, and demonstrations of.				
Field Day – Strategies, Tactics and Techniques				
FRS & GMRS - what are those?				
Ham Radio projects for Arduinos & Raspberry Pi				
VHF Digital Modes: D-Star, Packet, APRS				
HF Digital Modes: RTTY,JT65,WSPR,PSK31,PACTOR,FT8				
How to use an oscilloscope				
Local Repeaters You Can Hit				
MESH				
Moonbounce				
More social events, picnics, etc.				
NVIS for regional HF communications				
QSLs, QSL cards, ARRL LOTW, eQSL				
SDR - Software Defined Radios				
Compact HF antennas				
Soldering				
Sulphur Mountain Repeater Association				
SWR, Meaning and Measurement.				
Troubleshooting				
Vacuum Tubes				
VHF and Above Contesting				
What's DTMF, CTCSS, and PL?				
Power amplifiers and receiver preamplifiers				
Assembling Emergency Supplies				
The Love of Morse Code. Keys, Paddles & Bugs.				
The HF Reverse Beacon Network				
ARRL American Radio Relay League topics				

I can give a presentation on:	

ARRL News

(All photos and icons from ARRL.org or other specified sources).

Stations to Celebrate Fourth Anniversary of FT8 07/23/2021

Many stations will take to the airwaves August 2 – 15, to celebrate the 4th anniversary of FT8. All stations will use call signs with "FTDMC" or "FTDM" in the suffix. The activity also celebrates the 2nd anniversary of the FT8 Digital Mode Club. Logs will be uploaded to LoTW and eQSL. QSL cards will be available.

Stations planning to participate include: 4J8FTDM, OZ8FTDMC, RO3FTDM, 9K8FTDMC, A60FTDMC, DQ8FTDMC, GB0DMC, HZ8FTDMC, and many others. A certificate will be available with bronze, silver, gold, and platinum levels for working them. — Thanks to The Daily DX

Massachusetts Court Okays Amateur Radio Tower, Citing Board of Appeals' Error

A judge in the Massachusetts Land Court has ruled that the Zoning Board of Appeals in the City of Framingham "erred" in revoking a building permit for an 80-foot ham radio tower as an accessory use. The Building Commissioner in Framingham had granted ARRL member Mikhail "Misha" Filippov, KD1MF, a building permit for the tower, and Filippov had begun pouring concrete for the tower footings. Neighbors complained, however, and the Zoning Board of Appeals revoked the permit, citing the setback requirements of the city's wireless communications facilities (WCF) special permit bylaw. Land Court Judge Howard Speicher reversed the Zoning Board of Appeals' decision and ordered the town building commissioner to reinstate the permit.

"The City of Framingham has provided, for the benefit of amateur radio operators, exemptions from its zoning requirements from the construction of radio antenna towers for amateur radio operators," the court noted. This case was not settled on the basis of PRB-1 considerations, but strictly on which setback requirements should apply. PRB-1 requires local governments to reasonably accommodate amateur radio installations.

The Zoning Board of Appeals had argued that Filippov's project plans failed to meet setback zoning requirements, but the Land Court determined that the board could not enforce this, because of an exception that exempts structures, including amateur radio towers, from these requirements as long as a building permit is issued. (Continued on next page)

ARRL News (Continued)

Massachusetts Court Okays Amateur Radio Tower, Citing Board of Appeals' Error (Continued)

The court ruled the Zoning Board of Appeals "erred in overturning the decision of the Building Commissioner to issue a building permit for the erection of the proposed radio antenna tower."

The WCF bylaw's definition of a tower is very broad, and the ham's tower appeared to fit within that definition, causing the Zoning Board of Appeals to require the WCF setback of structure height plus 20 feet. The next sentence in the same WCF paragraph, however, requires that "any such facility shall be a minimum of 300 feet from a residential zoning district or residential use."

The Zoning Board of Appeals had suggested that Filippov re-apply for a more central location on his lot. The court recognized, however, that amateur radio towers, under the Framingham bylaw, are exempt from special permit requirements.

"By its decision, the Board has taken the position that it may pick and choose which of those requirements will remain applicable to uses that are, by the explicit terms of the bylaw, exempt from the special permit requirement," the Land Court ruled. "No reasonable reading of the bylaw permits this unfettered exercise of discretion."

FCC Investigating Alleged "Jamming" on 40 Meters

Reports suggest that jamming stations have been deployed on the lower portion of 40 meters.

The jamming appears to be coming from Cuba. The signals, spaced at regular intervals, exhibit a squishy, popping noise. The apparent jamming showed up after anti-government protesters took to the streets in Cuba, followed by a government crackdown. So far, there's no proven connection between the jamming and the protests, as evidence has been circumstantial. DX spots suggest that Cuban hams are on the air on SSB but do appear rare on 40 meters. A lot of Cuban spots point to FT8 activity. The jamming issue has drawn the attention of the FCC, which is looking into the matter, according to one tech publication.

"Too many people around the world are fighting uphill battles to be able to use technology to expand economic opportunity, express themselves, and organize without fear of reprisal," an FCC spokesperson told Motherboard. "The FCC is committed to supporting the free flow of information and ensuring that the internet remains open for (Continued on next page)

ARRL News (Continued)

FCC Investigating Alleged "Jamming" on 40 Meters (Continued)

everyone. We are assessing these reports in conjunction with our field agents and communicating with the Department of State as this issue develops."

Outside of ham radio, the ability to connect with some social media sites and even with the internet inside Cuba has been reportedly tricky. Connecting to the Federación de Radioaficionados de Cuba (FRC) website (Cuba's IARU member-society) from outside of Cuba has been unreliable. This week, users attempting to do so — at least those in the US — got a shrugging cartoon character and the legend, "Acceso Denagado" — access denied. The FRC Facebook page is accessible, but links to the FRC website are blocked. FRC had warned of "possible outages" a week ago, attributing the problem to maintenance being done in the data center where FRC is housed.

Well-known amateur radio contester and DXer Fred Laun, K3ZO, pointed out in a July 17 post to the Potomac Valley Radio Club reflector that typical ham radio contacts with Cuba "are not normally about politics, though I suppose in the wake of recent events they may have become so." Josh Nass, KI6NAZ, of the YouTube channel, Ham Radio Crash Course (HRCC), is calling the interference "The Cuban Rum Runner," an oblique reference to the "Russian Woodpecker" of yesteryear. And Matthew Kaskavitch, K0LWC, recorded an "emergency broadcast message" on his YouTube channel, to advise viewers of the purported jamming.

International Amateur Radio Union (IARU) Region 2 (the Americas) President Ramón Santoyo, XE1KK, said no complaints had been received by July 20.

AO-109 (RadFxSat-2/AMSAT Fox-1E) Open for Amateur Use

AMSAT's Engineering and Operations Teams have announced that AO-109 (RadFxSat-2/AMSAT Fox-1E) is now open for amateur use. AMSAT advises operators to use efficient modes for making contacts, such as CW or FT4, because issues with the satellite make SSB voice contacts "challenging at best." An article in the May/June 2021 issue (Vol. 44, No. 3) of The AMSAT Journal details the various attempts to characterize AO-109 and its apparent problems. — Thanks to Jerry Buxton, NØJY, and Drew Glasbrenner, KO4MA

ARRL News (Continued)

Amateur Radio Responds to Flooding in Western Europe

International Amateur Radio Union (**IARU**) Region 1 Emergency Communications Coordinator Greg Mossop, G0DUB, reported over the weekend that amateur radio volunteers have responded in the wake of widespread and catastrophic flooding in Germany, Belgium, and the Netherlands. The flooding, resulting from unprecedented heavy rainfall, has claimed more than 120 lives. Hundreds more remain unaccounted for.

The Dutch Amateur Radio Emergency Service (DARES) was on standby since July 14, as the first reports of flooding came in. An initial attempt to establish a point-to-point link from the provincial capital of Maastricht to the north of Limburg province was halted due to heavy traffic, as residents evacuated low-lying areas. DARES volunteers were in contact with members of the Belgian Emergency Amateur Radio Service (B-EARS) to coordinate their efforts.

The European Civil Protection Mechanism was activated, and emergency groups across the region reported their governments were sending extra assistance and supplies to the areas where damage was worst. The flood water surge continued to make its way north, leading to further evacuations, and amateur radio emergency groups focused on requests for assistance. B-EARS asked to provide a backup VHF link between the emergency call center in Brussels and the province of Hainaut through Friday, while DARES had four stations active in the Limburg area ready to respond if needed.

The greatest loss of life and damage has occurred in Germany, where more than 1,000 residents remain unaccounted for. The loss of mobile telecommunication networks has slowed the effort to locate people, while many others are without power or homes. The emergency communications unit of the Deutscher Amateur Radio Club (**DARC**) has been handling inquiries for amateur radio support in the worst-hit areas, but members in the area have been flood victims as well, losing equipment or their homes.

“Amateur radio clubs have been in contact with relevant authorities, but there is currently no need for operational support from radio amateurs,” the DARC reported. A mutual aid arrangement exists among amateur radio organizations in Germany, Belgium, and the Netherlands. Mossop said emergency communications groups in the affected and surrounding regions are ready to respond to requests and have been coordinating their efforts as needed. “This emergency will last for some time as infrastructure is repaired and the threat from damaged dams and more rainfall is reduced,” Mossop said. -- *Thanks to IARU, DARC*

ARRL News (Continued)

Richard (Ric) A. Tell, K5UJU
Richard Tell Associates, Inc., 10037 Long Meadow Rd., Madison, AL 35756; rtell@radhaz.com

Amateur Portable Radios (Handheld Transceivers): Exposure Considerations Based on SAR

New FCC rules related to human exposure that went into effect on May 3, 2021 may now potentially require compliance with limits on specific absorption rate.

Introduction

In what might have been unnoticed by most hams, the FCC has instituted new rules related to human exposure that went into effect on May 3, 2021 that may now potentially require compliance with limits on specific absorption rate (SAR) [1]. This new rule, among others, is a part of what is called the FCC's *ET Docket No. 19-226* that changes the way that parties determine and achieve compliance with the Commission's limits on human exposure [2]. Of special interest to amateur radio licensees, the new rules no longer necessarily exempt handheld transceivers (handhelds) used by hams from certification that their use will comply with an SAR limit, something that historically has always been a requirement for commercial handhelds — those used outside the amateur radio service.

According to the FCC announcement, it appears that the commission intends to grandfather any equipment that was presumed to be compliant prior to the May 3 date. Since amateur radio equipment has never been required to be certified as to performance, except for certain power amplifiers, it seems reasonable to assume that all existing handhelds, the focus of this article, would remain designated as compliant devices. Nonetheless, new handhelds purchased after the effective date would presumably need to become certified,

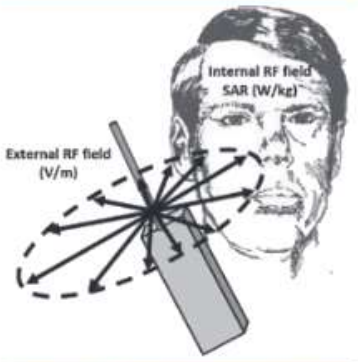

Figure 1 — RF electric and magnetic fields external to the body result in internal electric fields that can produce tissue heating based on the specific absorption rate (SAR).

but any SAR testing, if mandatory by the FCC, might conceptually only become required after some to-be-determined review period. The most likely scenario is that, going forward, manufacturers will be required to evaluate SAR for amateur radio handhelds. In summary, amateurs are no longer relieved from compliance with FCC RF exposure rules by exception. Rather the amateur service will now be treated similar to all of the other services regulated by the FCC.

Aside from the question of exactly when operation of a particular handheld is expected to comply with the new rules, the whole matter of SAR and how it relates to exposure of the user and others nearby is a complex subject and generally not familiar to most hams. Indeed, the assessment of SAR itself is beyond the capability of the vast majority of licensees. This article helps provide a basic understanding of what SAR is all about and how it relates to the safety of operating equipment, whether handheld of not, that produces radio frequency (RF) fields. The following presents 1) a simplified explanation of SAR to help in appreciating the complexity of the new FCC requirements as they may relate to controlling SAR and, 2) insight as to the likely SARs that might result from use of amateur handhelds.

Background

Fundamentally, RF fields interact with objects in an environment, often inducing RF currents to flow in those objects. If the exposed object is composed of a lossy (absorptive) material, such as human tissue, the induced currents largely lead to heating. If the heating effect is sufficiently robust, associated with very intense RF field strengths, there may be an increase in the temperature of the exposed tissues. Hence, tissue heating is directly related to the

Continued on next page

ARRL News (Continued)

strength of the electric field strength within the tissue. The preferred way to quantify this internal heating effect is a quantity called the SAR expressed by the unit watt per kilogram (W/kg) of tissue. SAR expresses the rate at which an electromagnetic field delivers energy to the subject tissue. SAR is an expression of energy absorption rate because power is the time derivative of energy; 1 W is equivalent to 1 J/s. Thus, an SAR of 1 W/kg is equivalent to an energy absorption rate of 1 J/kg-s.

RF electric and magnetic fields external to the body result in internal electric fields that can produce tissue heating based on the SAR, see **Figure 1**.

SAR limits for safe exposure

The FCC RF exposure limits are based on limiting the SAR averaged over the whole body and as averaged over any one gram of tissue. These limits are designed to protect against increases in core temperature of the body and of localized regions of tissue that might result in an adverse health effect. For amateur radio licensees, members of the licensee's household and persons who are occupationally exposed to RF fields, the whole body SAR limit is set at 0.4 W/kg (averaged over the entire body mass) and a local (spatial maximum) SAR limit of 8 W/kg (averaged over any single gram of tissue in the body). For members of the general population (all persons who are not amateur licensees or occupationally exposed), the corresponding SAR values are 0.08 W/kg whole body and a local value of 1.6 W/kg. The FCC RF exposure limits specify maximum permissible exposure (MPE) values of RF fields that exist outside the body that are expressed as values of electric (E) field strength (V/m) and magnetic (H) field strength (A/m) as well as power density (W/m^2 or mW/cm^2). Compliance with the MPEs is intended to ensure that the whole body SAR and local SAR limits within the body are always respected and, clearly, electric and magnetic field strengths in air are much easier to measure (and calculate) than those values inside the body. Because cell phones are used by the general population with no particular expectation they may be exposed to RF fields, the applicable limit is the more stringent SAR value of 1.6 W/kg. Handhelds used in commercial activities must comply with the less restrictive limit of 8 W/kg.

It should be noted that the FCC in the US references the limit for local SAR to an average over a one gram cube of tissue. The recommended local SAR limit developed by the Institute of Electrical and Electronics Engineers (IEEE) in their *IEEE Std™ C95.1-2019* specifies a larger averaging tissue mass of 10 g in the shape of a cube [3]. This greater averaging mass has been found to better correlate local tissue temperature increase with local SAR. This same larger averaging mass is also specified in the International Commission on Non-ionizing Radiation Protection (ICNIRP) guidelines widely applied in Europe [4]. More about this later.

For RF sources that are sufficiently far from the body, MPE values accurately correlate with SAR. A complicating factor, however, is that a measurement of the E or H fields (or power density) outside the body does not necessarily accurately correlate with the local SAR in tissue *when the RF source is extremely close to the body surface*. This is why the FCC requires all commercially used handhelds including cell phones to be evaluated on the basis of local SAR, not MPE, before they are allowed to be sold in the US. As might be suspected, for cell phones as well as handhelds, the greatest SAR in the body is usually at the point where the transmitter is positioned. This might be the ear in the case of a cell phone or the front of the face in the case of a handheld. During SAR measurements, the transmitter is positioned either in direct contact with the head or other part of the body such as when cell phones or handhelds are mounted at the waist. When test laboratories evaluate SAR for common handheld use, the handheld is positioned at typically 2.5 cm in front of the face, similar to when the handheld is held in front of the mouth. A specially shaped phantom is often used for laboratory measurements of SAR, the phantom being similar to a manikin filled with a material that simulates the RF absorption characteristics of human tissue. Cell phone and commercial handheld manufacturers must commit to these detailed laboratory measurements for every model of their RF emitting product, revealing the maximum local SAR that can result when the device is operating normally at its maximum rated power. This has led to a gigantic database of equipment certifications resident in the FCC's equipment authorization database [5]. In each testing case, the product is placed in appropriate positions relative to the phantom while miniature probes are robotically moved throughout the interior of the phantom to measure the E field strength. Based on the measured E field in the phantom and the conductivity of the tissue equivalent material filling the phantom, the SAR is determined. See the **Sidebar: Determining SAR**.

Determining SAR

SAR can also be determined through theoretical analysis but, in practice, cell phones and commercial handhelds are always evaluated for SAR using the described laboratory procedures. The analysis approach makes use of the so-called finite difference time domain (FDTD) method, a complex computer based computation wherein the human body is modeled by breaking it into a very large number of small voxels — typically measuring one or two mm on a side — each with an assigned set of electrical properties to mimic the electrical characteristics of human tissues. The computations can take hours to run on super-fast machines with the output data ultimately processed to display local SAR values in a three dimensional fashion.

A challenge for amateur radio licensees

Fortunately, this SAR evaluation process has never before been required for equipment used in the amateur radio service, which can lead to increased costs of equipment. It remains to be seen how these new FCC rules will impact the certification of amateur radio handhelds for conformance with the local SAR limit. Just as important, though, is the matter of how amateur radio operators would be able to conclude that their use of a ham handheld complies with the relevant SAR limits for the equipment that they currently operate.

Confronted with this challenge, an alternative but practical approach to assessing compliance of amateur radio handhelds against the fundamental exposure criterion of SAR is required. This paper suggests that, at this point in time and supported by the extensive database of equipment certifications available from the FCC, most amateur radio handhelds already can be expected to comply with local SAR values that underlie the FCC RF exposure rules. For example, the FCC's equipment authorization database represents more than two decades worth of detailed, time consuming and expensive SAR test results for cell phones and commercially

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ARRL News (Continued)

used handhelds as well as for all kinds of other RF emitting devices that may be used close to the body. It is proposed that this extensive set of SAR certification data can be used to amateur radio's advantage. Of particular interest are the many reports filed in the database on commercial handhelds that operate in frequency bands that are extremely close to — or, in some cases, actually within — those authorized for the amateur service. Fortunately, there are several bands allocated for commercial communications that are essentially similar to those used by hams in the VHF and UHF spectrum. For example, the US amateur bands at 2 m (144-148 MHz), 1.25 m (219-225 MHz), 70 cm (420-450 MHz) and 33 cm (902-928 MHz) are frequency allocations very close to those used for commercial communications activities and for which SAR evaluations have been conducted.

By examining SAR measurement results for commercial handhelds operated in these close-by frequency bands, significant insight can be gleaned on the likelihood of compliance of similar amateur radio handhelds despite the fact that the amateur versions of these radios have not necessarily been directly measured for SAR. For instance, say that 2 W commercial handhelds that operate just below and just above the two-meter band are found to comply with the SAR limit. It would seemingly be reasonable to conclude that a 2 W amateur handheld that operates in the two-meter band would also be found to be similarly compliant.

A practical example

To help illustrate this concept, an example search of the FCC equipment authorization database was conducted of a limited number of SAR certifications; the sheer size of the database begs the question of how much effort would be required to query every certification to determine its relevance to VHF/UHF handheld compliance. Ideally, some sort of automated process would be very helpful in sorting through the thousands of reports but that remains to be determined, if feasible, by the FCC. The manual approach to searching the database and extracting relevant SAR data, while extremely time consuming, can, nonetheless, result in helpful insights.

Of great utility, virtually all of the SAR certifications of commercial handhelds contained in the FCC database include the results of SAR measurements averaged over both the FCC's 1 g averaging mass as well as a 10 g averaging mass applicable to most markets outside the US. **Figure 2** for 1-gram averaging mass, and **Figure 3** for 10-gram averaging mass illustrate the results of an initial and limited inspection of the FCC's database for SAR certifications of commercially used handhelds across the VHF/UHF spectrum for compliance with the FCC limits. The indicated local SAR values retrieved from SAR reports have been normalized to 1 W and are relative to a duty cycle of 50% based on the push-to-talk (PTT) operation of the handheld. For compliance determination purposes, the FCC applies a presumed duty cycle of 50% for PTT operation of the handheld.

Figure 2 shows the local one-gram averaged SAR produced by commercial handhelds that operate near or within amateur radio bands (based on 50% PTT duty cycle and 1 watt). These data are potentially applicable to US amateurs regulated by the FCC should the FCC require compliance with SAR limits.

Of particular note is the lower normalized local SARs associated with VHF handhelds as opposed to those used in the UHF range; the higher frequencies result in a shorter depth of penetration resulting in higher surface region SARs. Also apparent from the data in **Figure 2** is the relatively wide margin by which the VHF local SARs

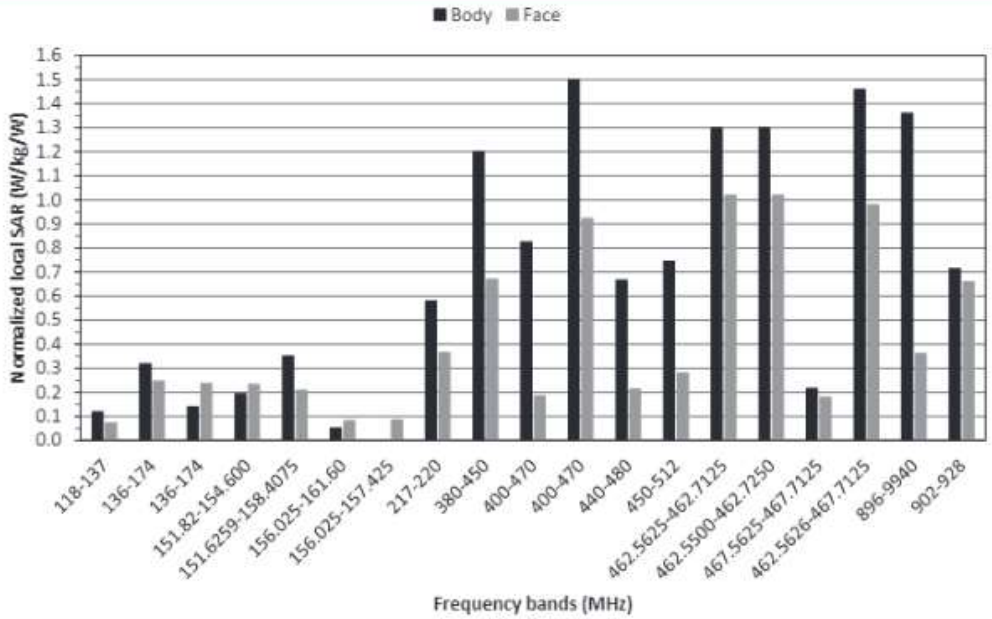

Figure 2 — Local one-gram averaged SAR produced by commercial handhelds that operate near or within amateur radio bands (based on 50% PTT duty cycle and 1 watt).

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ARRL News (Continued)

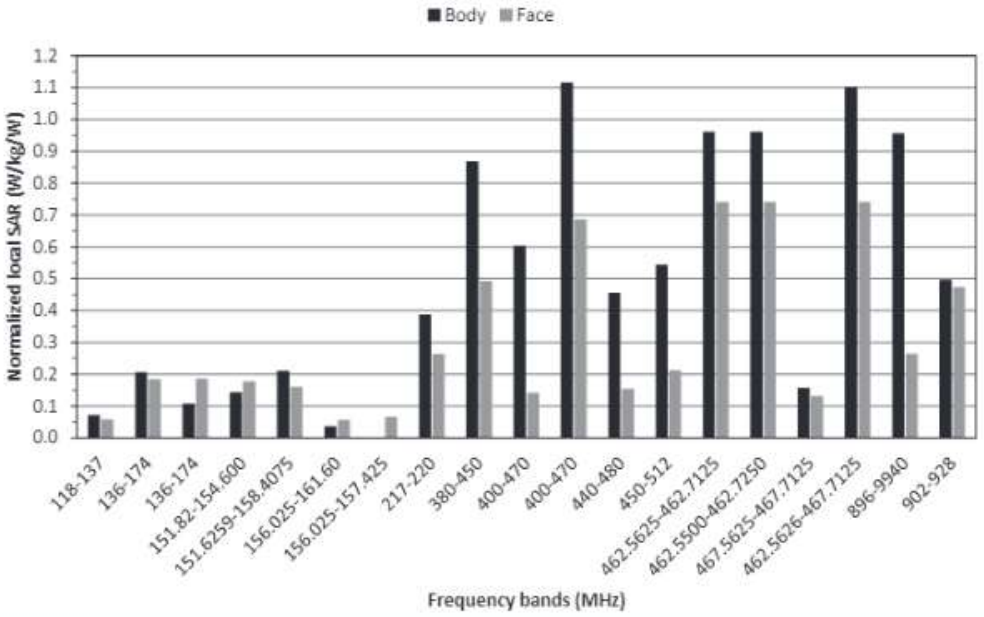

Figure 3 — Local ten-gram averaged SAR produced by commercial handhelds that operate near or within amateur radio bands (based on 50% PTT duty cycle and 1 watt).

comply with the more stringent local SAR required for devices used by the general population, i.e., 1.6 W/kg. The FCC applies the occupational MPEs (and by association, a higher local SAR limit, i.e., 8 W/kg) to amateur radio operators and members of their households. In the US, the application of occupational limits to hams is based on the presumption by the FCC that licensed radio operators have a basic awareness of their potential exposure and are knowledgeable of how to prevent excessive, unsafe exposures.

A practical application of **Figure 2** is the extrapolation of the normalized local SARs to a local SAR of 8 W/kg (the FCC limit for amateurs) to determine the power level that would result in 8 W/kg. For example, in the 2 m band, it might be presumed that an handheld operating with a power of up to 22.9 W (not realistic for an handheld) could be used before exceeding the amateur radio operator SAR limit (8 W/kg divided by 0.35 W/kg/W). For a 70 cm handheld, a power of 5.3 W could be used that would just comply with the local SAR limit (8 W/kg divided by 1.5 W/kg/W).

A similar display of normalized local SAR based on an averaging mass of 10 g, rather than just 1 g, is provided in **Figure 3**. It shows the local ten-gram averaged SAR produced by commercial handhelds that operate near or within amateur radio bands (based on 50% PTT duty cycle and 1 W). These data are potentially applicable to amateurs subject to regulations based on SAR limits as specified by ICNIRP. Whether regulatory agencies in countries other than the US presume a PTT duty cycle of 50% is not certain.

The same attribute of relatively lower local SAR for VHF handhelds is apparent, but the actual normalized values are less than those that would result from the smaller averaging mass of 1 g. This characteristic results from the greater volume of tissue over which highly localized points of SAR within tissue may be averaged. The practical upside of this is, obviously, that 10 g averaging allows for higher handheld operating powers.

It is also noteworthy that there is a variation in the normalized SAR values,

Work in progress

In the US, the American Radio Relay League (ARRL) is working diligently toward development of guidance to amateurs to help in their compliance efforts in view of the new FCC RF rules. In this context, the ARRL RF Safety Committee, chaired by Dr. Gregory Lapin, N9GL, (email: **n9gl@arrl.org**) is monitoring the new regulatory requirements that are applicable to the amateur radio service and working to develop appropriate methods to help hams in their compliance efforts.

Simultaneously, a small group of UK amateurs in the Radio Society of Great Britain (RSGB) and the ARRL in the US have been convening since mid-2020 to collaboratively attack the same issue, i.e., how amateurs can best assert and/or demonstrate compliance with the proposed new RF rules to be administered by Ofcom in the UK and the new changes in how the FCC rules are being applied to hams in the US. For more information on this activity, see articles in *RadCom* from the RSGB or contact John Rogers, MØJAV (email: **m0jav@rsgb.org.uk**).

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ARRL News (Continued)

sometimes among different handhelds that operate in an identical frequency band. This is likely to reflect differences in the antennas or other accessories that may be used with the specific radios.

For hams outside the US who must comply with ICNIRP guidelines, assessing compliance would be based on applying the 10 g averaging mass and on somewhat greater SAR values. For instance, the ICNIRP local SAR limit for occupational exposure is 10 W/kg as compared to the FCC's 8 W/kg while the local limit for the general public is 2 W/kg compared to the FCC's 1.6 W/kg. Hence, the normalized SARs shown in **Figure 3** should be extrapolated to a value of 10 W/kg for estimating the maximum handheld power that would comply with the ICNIRP occupational SAR limits. This results in greater permissible handheld powers than could be permitted with the smaller averaging mass specified by the FCC. Two competing factors are potentially relevant to the handheld compliance issue where exposure limits are based on ICNIRP. First is whether hams are considered as members of the general public or whether they are treated as occupationally exposed workers, the public exposure limits being a factor of five more stringent. Second, the greater local SAR averaging mass would help mitigate against noncompliance.

Irregular ham Handheld configurations and SAR

When reviewing the SAR certification reports in the FCC database, it is evident that the SAR testing procedures can become rather onerous. This is reflected in the multiple configurations of an handheld with different antennas, battery packs and other accessories such as microphones and headsets that are each individually evaluated for many commercial handhelds. From a ham's perspective, however, this extensive testing process for commercial handhelds would seem to help support an argument that common amateur use of third-party accessories such as higher gain antennas, etc., will not materially change the rather clear conclusion that ham handhelds would continue to comply with exposure rules requiring assessment of SAR. Of particular relevance, for the handhelds identified in this limited exercise, a variety of antenna lengths were found to have often been included in the tests. The results plotted in **Figures 2** and **3** encompass the absolute maximum reported local SARs for each handheld, regardless of a particular accessory, in the interest of conservatism. An important principal, relative to local SAR associated with handhelds, is the physical size of the antenna; for a given power, contrary to how gain is generally proportional to antenna size, smaller antennas result in a higher concentration of energy absorption. For hams, replacement of antennas on handhelds to improve potential coverage is most often accomplished with larger, longer antennas. This fundamental relationship between antenna size and local SAR likely means that using third-party antennas on handhelds results in lower SARs.

Conclusions

A careful but limited examination of SAR test results available in the FCC's equipment authorization database suggests that handhelds commonly used in the amateur radio service would not exceed exposure regulations based on the magnitude of local SARs. This tentative conclusion could be used to support an amateur radio operator's contention that their past use of existing handhelds as well as acquisition and use of new handhelds complies and will be expected to comply with possible SAR based exposure regulations. Extension of this initial data analysis is recommended to further clarify this conclusion. Operation of relatively higher power handhelds could result in exceeding local SAR limits for members of the general population and care should be exercised in permitting unlicensed persons to use such handhelds even under the supervision of a licensed control operator. See the **Sidebar: Work in progress**.

Outside the jurisdiction of the FCC, Ofcom in the UK has announced that it will impose new license requirements for UK hams that are based on the ICNIRP guidelines. The RSGB has developed useful information on this upcoming requirement **[6]**. At this time, however, it remains to be seen exactly how such new regulations might impact UK hams. Interestingly, Ofcom is only concerned with radio operations that cause exposure of the general public, not with the potential exposure of hams themselves. However, Public Health England and/or the UK Health and Safety Executive, separate government entities in the UK, could recommend RF exposure limits that might include exposure limits for hams. Whether any of the possible regulatory provisions in the UK would apply the more permissive exposure limits for occupational exposure to amateur radio operators, similar to the FCC, or the more restrictive limits applicable to the general public, is unknown.

Ric Tell, K5UJU, received his Novice ticket in 1959, first operating with a home brew 7.5 W transmitter during the greatest solar cycle of his life. Eventually achieving an Amateur Extra class license in 1970, his predominant activities have included his professional pursuits in the areas of RF safety, RF instrumentation, antenna analysis, hazard assessments and compliance evaluations. After spending 20 years with the Environmental Protection Agency, he has operated his own scientific consulting business since 1987. His ham radio interests are primarily QRP CW operation and experimenting with antennas. He holds a BS degree in physics and an MS degree in radiation sciences and is a member of the ARRL RF Safety Committee and is a Life Fellow of the IEEE. Ric chairs the IEEE Committee on Man and Radiation (COMAR) and Subcommittee 2 on RF safety programs in the IEEE International Committee on Electromagnetic Safety, Technical Committee 95.

References

[1] *FCC Public Notice.* Office of Engineering and Technology announces May 3, 2021 as the effective date for RF exposure rule changes and beginning of the two-year review period for existing parties. Available at: **https://docs.fcc.gov/public/attachments/DA-21-363A1.pdf**.

[2] *Human Exposure to Radiofrequency Electromagnetic Fields and Reassessment of FCC Radiofrequency Exposure Limits and Policies.* Final rule. Federal Register, Vol. 85, No. 63, Wed., April 1, 2020, pp. 18132-18151. Available at: **https://www.govinfo.gov/content/pkg/FR-2020-04-01/pdf/2020-02745.pdf**.

[3] *IEEE (2019). IEEE Standard for Safety Levels with Respect to Human Exposure to Electric, Magnetic, and Electromagnetic Fields, 0 Hz to 300 GHz.* IEEE Std C95.1-2019. Available at: **https://ieeexplore.ieee.org/browse/standards/get-program/page/series?id=82**.

[4] *ICNIRP (2020). Guidelines for limiting exposure to electromagnetic fields (100 kHz to 300 GHz). Health Physics,* Vol. 118, No. 5, pp. 483-524. Available at: **https://www.icnirp.org/en/publications/article/rf-guidelines-2020.html**.

[5] FCC equipment authorization database at: **https://apps.fcc.gov/oetct/eas/reports/GenericSearch.cfm**.

[6] *EM Field Exposure. Radio Society of Great Britain (RSGB).* Available at: **https://rsgb.org/main/technical/emc/emf-exposure/**.

ARRL News (Continued)

Winlink — Amateur Radio's Email Network

Imagine you're a ham who has been tasked with providing communication to an American Red Cross shelter in an area devasted by a hurricane. While traditional voice communication can be important in these situations, critical information today travels more often by email. Agencies such as the American Red Cross and many others have come to depend upon internet email as their primary means of exchanging information with support facilities that may be tens or hundreds of miles away — or even farther.

But there is a problem in our imaginary situation. The hurricane has destroyed the commercial communications infrastructure. Email is useless because a connection to the internet doesn't exist. Now what do you do?

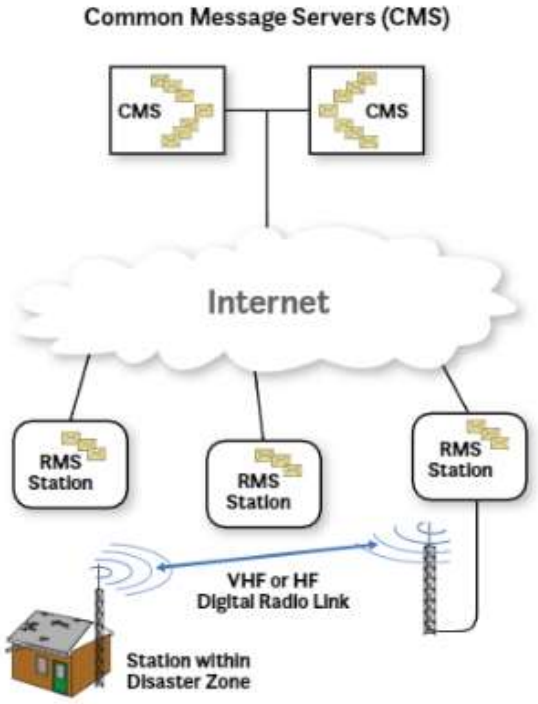

Figure 1: The Winlink network consists of Common Message Servers (CMSs) that are connected via the internet to hundreds of Remote Message Servers (RMSs) at ham stations throughout the world. You can access a Remote Message Server by radio and use it to send emails to and from the internet. [ARRL 1977]

Bridging "the Last Mile"

While the internet may be unavailable inside the disaster zone, if you travel far enough beyond the affected area, you'll discover that the internet is still very much alive. Your challenge will be to bring internet access *into* the disaster zone so that support personnel at the shelter can communicate effectively. In telecommunications this is sometimes called a *last-mile* solution. It means using wireless technology to span whatever gaps may exist between the nearest access point on a commercial network and the area where the network connection is most needed.

Fortunately, hams have a number of last-mile solutions in their public service toolkits. Among the most popular of these is a wireless network known as *Winlink*.

The Winlink Network

Winlink is an amateur radio network that supports wireless email communication to and from the internet. It was designed and built by hams, and it is maintained by hams.

At the core of Winlink are computers known as *Common Message Servers*, or CMSs (see Figure 1). These computers reside in secure, protected facilities, safe from hackers or other disruptions. They connect to the internet through high-speed fiber-optic cables. The CMSs send, receive, and store email messages traveling to and from the internet.

CMSs are also connected via the internet to *Remote Message Servers*, or RMSs, at amateur radio stations around the world (see Figure 2). RMS stations are also referred to as *gateways*.

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ARRL News (Continued)

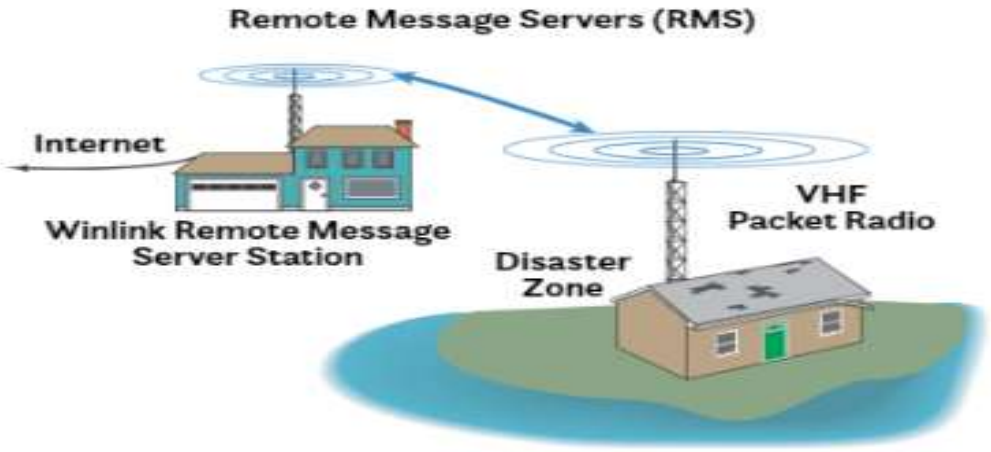

Figure 3: Using VHF packet radio to connect to an RMS station outside a disaster area. [ARRL 1978]

Every RMS, regardless of where it is located, has access to all email traffic stored at the CMSs. This means that if one RMS goes offline for some reason, users can still retrieve their messages by simply connecting to a different RMS. Putting it a different way, what one RMS "knows," all the others know as well.

An RMS station acts as the last-mile connection to the "client" — that's you. It can communicate with you by VHF *packet radio* (a form of digital communications), or it may be able to link to you on HF frequencies using other digital systems, such as PACTOR.

Let's say there is an RMS station just outside the disaster zone, and you can reach it on VHF. By using packet radio and your FM transceiver, you can connect to the RMS and provide internet email access to the staff at your shelter. They can use your amateur radio connection to send vital information to their headquarters and other facilities (see Figure 3). Read "Packet Radio and the Terminal Node Controller" in this issue to learn more about packet radio.

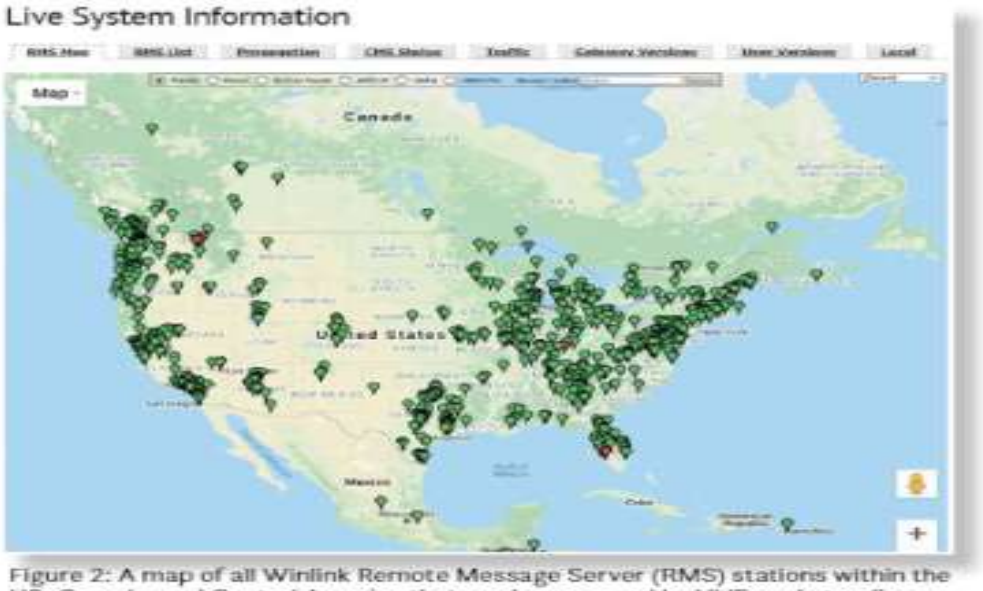

Figure 2: A map of all Winlink Remote Message Server (RMS) stations within the US, Canada, and Central America that can be accessed by VHF packet radio.

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ARRL News (Continued)

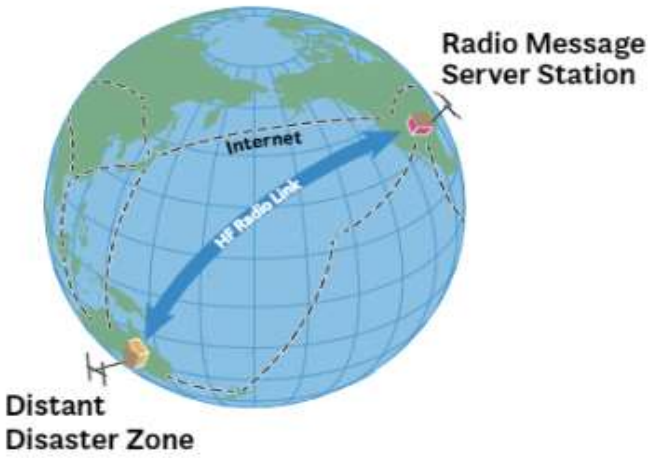


Figure 4: When disasters strike isolated areas, hams use HF frequencies to access Winlink RMS stations over hundreds or even thousands of miles. [ARRL 1979]

But what if the nearest RMS is hundreds or even thousands of miles away? (This could occur if you are providing disaster support on an isolated island, for example.) With an HF transceiver and the appropriate hardware and software, you will be able to exchange emails with one of the many RMS stations that have HF digital capability (see Figure 4).

Because of the limitations of VHF and HF radio, Winlink emails must be limited in size to no more than 12 kilobytes. That's adequate for most text messages, but it cannot support images or other large files.

What You Need to Access Winlink

The first thing you'll need is a copy of the *Winlink Express* software (see Figure 5), which you can download at winlink.org. This is the preferred software for communicating with the Winlink network.

Install the software on a Windows computer that has internet access. When you start *Winlink Express* for the first time, you'll be asked to set up a Winlink account. The account, like the software, is free.

If you plan to access the network through VHF/UHF packet radio, *Winlink Express* can be set up to work with a packet radio *terminal node controller* (TNC) hardware device or software. As you'll discover elsewhere in this issue, a TNC makes it possible to communicate digitally using an ordinary FM transceiver.

By establishing a VHF link to your nearest RMS, you'll be ready to send and receive emails through the Winlink system.

To access an RMS on HF frequencies, you will need to use *Winlink Express* with an HF transceiver that is connected to a PACTOR modem. *PACTOR* is a type of digital communication used at HF frequencies. *Winlink Express* can also use software alternatives to PACTOR that require only an inexpensive interface between your radio and your PC.

Winlink is a sophisticated, complex system, so you'll need to wade through a lot of specialized information and terminology. Fortunately, Winlink offers a wealth of information online in their "Book of Knowledge" at winlink.org/content/winlink_book_knowledge.

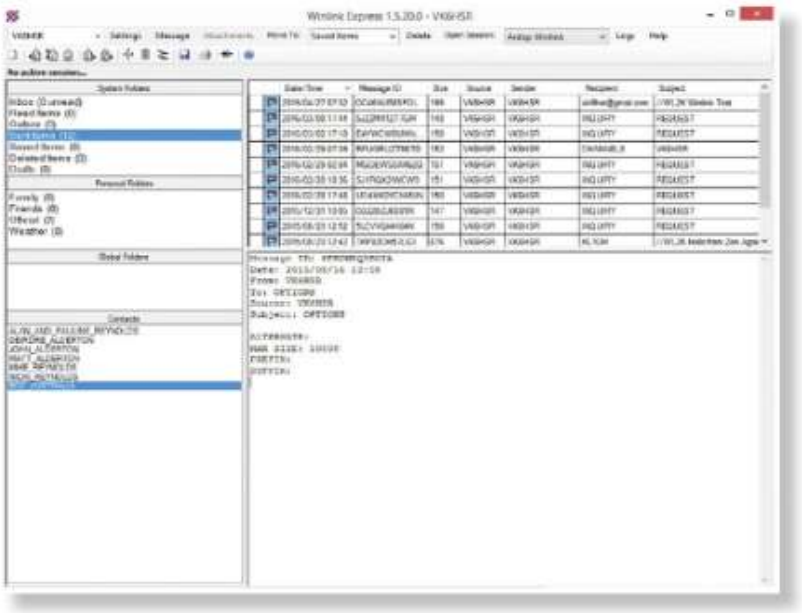
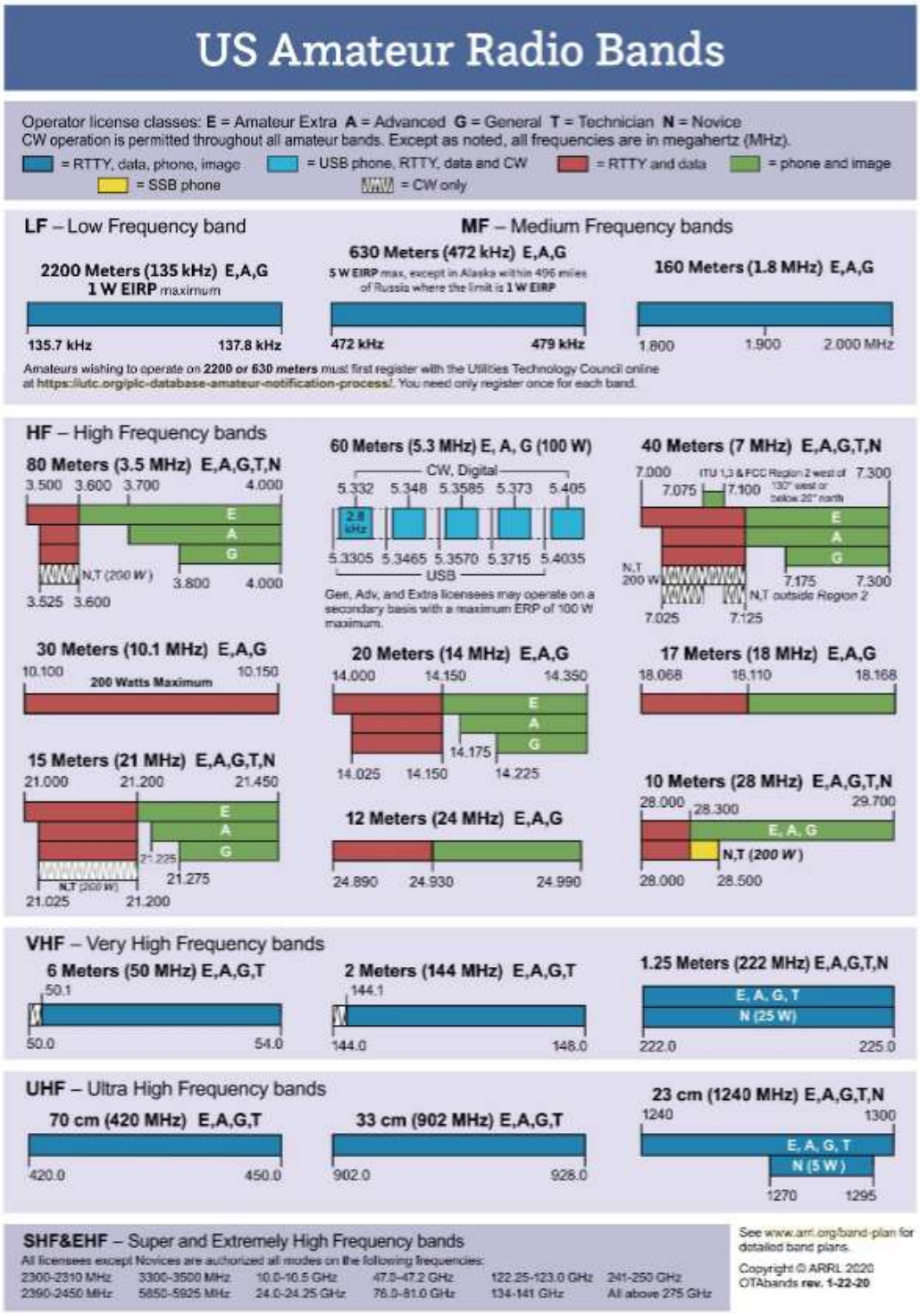


Figure 5: An example of *Winlink Express* software.

US Amateur Radio Bands



W1AW Schedule

W1AW Schedule

PAC	MTN	CENT	EAST	UTC	MON	TUE	WED	THU	FRI
6 AM	7 AM	8 AM	9 AM	1400		FAST CODE	SLOW CODE	FAST CODE	SLOW CODE
7 AM-1 PM	8 AM-2 PM	9 AM-3 PM	10 AM-4 PM	1500-1700 1800-2045	VISITING OPERATOR TIME (12 PM-1 PM CLOSED FOR LUNCH)				
1 PM	2 PM	3 PM	4 PM	2100	FAST CODE	SLOW CODE	FAST CODE	SLOW CODE	FAST CODE
2 PM	3 PM	4 PM	5 PM	2200	CODE BULLETIN				
3 PM	4 PM	5 PM	6 PM	2300	DIGITAL BULLETIN				
4 PM	5 PM	6 PM	7 PM	0000	SLOW CODE	FAST CODE	SLOW CODE	FAST CODE	SLOW CODE
5 PM	6 PM	7 PM	8 PM	0100	CODE BULLETIN				
6 PM	7 PM	8 PM	9 PM	0200	DIGITAL BULLETIN				
6:45 PM	7:45 PM	8:45 PM	9:45 PM	0245	VOICE BULLETIN				
7 PM	8 PM	9 PM	10 PM	0300	FAST CODE	SLOW CODE	FAST CODE	SLOW CODE	FAST CODE
8 PM	9 PM	10 PM	11 PM	0400	CODE BULLETIN				

W1AW's schedule is at the same local time throughout the year. From the second Sunday in March to the first Sunday in November, UTC = Eastern US time + 4 hours. For the rest of the year, UTC = Eastern US time + 5 hours.

♦ Morse code transmissions: Frequencies are 1.8025, 3.5815, 7.0475, 14.0475, 18.0975, 21.0675, 28.0675, 50.350, and 147.555 MHz.

Slow Code = practice sent at 5, 7½, 10, 13, and 15 WPM.

Fast Code = practice sent at 35, 30, 25, 20, 15, 13, and 10 WPM.

Code bulletins are sent at 18 WPM.

For more information, visit us at
www.arrl.org/w1aw

♦ W1AW Qualifying Runs are sent on the same frequencies as the Morse code transmissions. West Coast qualifying runs are transmitted by various West Coast stations on CW frequencies that are normally used by W1AW, in addition to 3590 kHz, at various times. Underline 1 minute of the highest speed you copied, certify that your copy was made without aid, and send it to ARRL for grading. Please include your name, call sign (if any), and complete mailing address. Fees: $10 for a certificate, $7.50 for endorsements.

♦ Digital transmissions: Frequencies are 3.5975, 7.095, 14.095, 18.1025, 21.095, 28.095, 50.350, and 147.555 MHz.

Bulletins are sent using 45.45-baud Baudot, PSK31 in BPSK mode, and MFSK16 on a daily revolving schedule.

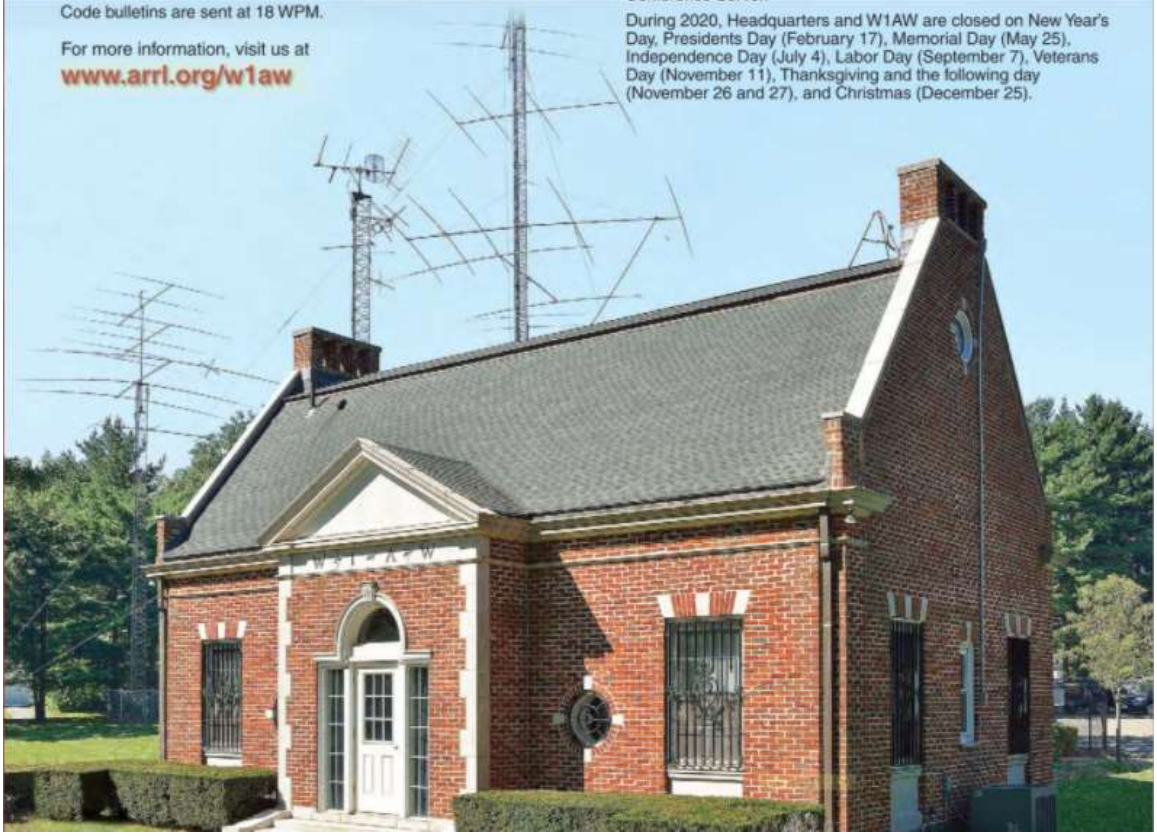
Keplerian elements for many amateur satellites will be sent on the regular digital frequencies on Tuesdays and Fridays at 6:30 PM Eastern time using Baudot and PSK31.

♦ Voice transmissions: Frequencies are 1.855, 3.99, 7.29, 14.29, 18.16, 21.39, 28.59, 50.350, and 147.555 MHz. Voice transmissions on 7.290 MHz are in AM double sideband, full carrier.

♦ Notes: On Fridays, UTC, a DX bulletin replaces the regular bulletins. W1AW is open to visitors 10 AM to noon and 1 PM to 3:45 PM Monday through Friday. FCC-licensed amateurs may operate the station during that time. Be sure to bring your current FCC amateur license or a photocopy. In a communication emergency, monitor W1AW for special bulletins as follows: voice on the hour, teleprinter at 15 minutes past the hour, and CW on the half hour.

W1AW code practice and CW/digital/phone bulletin transmission audio is also available real-time via the *EchoLink Conference Server* W1AWBDCT. The conference server runs concurrently with the regularly scheduled station transmissions. The W1AW Qualifying Run texts can also be copied via the EchoLink Conference Server.

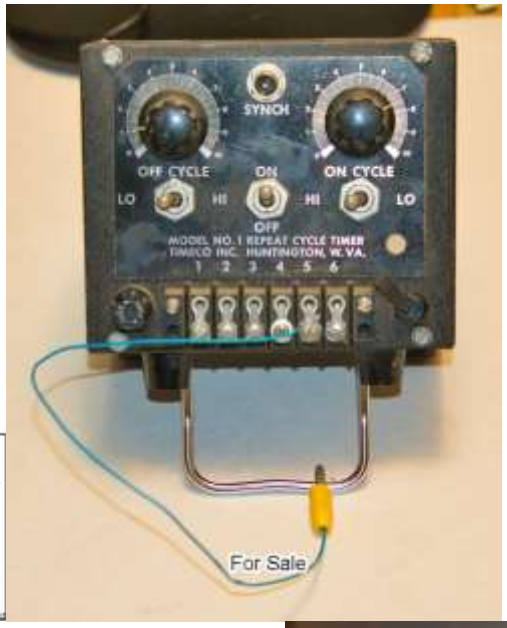
During 2020, Headquarters and W1AW are closed on New Year's Day, Presidents Day (February 17), Memorial Day (May 25), Independence Day (July 4), Labor Day (September 7), Veterans Day (November 11), Thanksgiving and the following day (November 26 and 27), and Christmas (December 25).

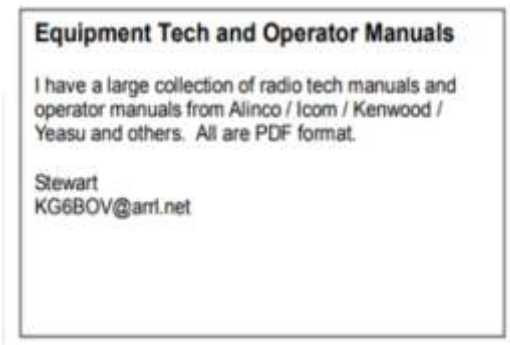


Wanted and For Sale Ads

Denney N6HV: One roll, 250 feet 14/2 clear speaker wire $30.00, [new, still in wrapper, old stock]. Various rolls of wire, big rolls; 8 gauge, shielded single pair and other gauges, good prices. Three-quarter-inch wide, flat, heavy, copper-braid, $1.00/ft.; great for grounding.

Items Given to the Club for Donations: Multimeter, Micronta brand $5.00. HP 1706A oscilloscope, as is, $50. Various lengths of Ethernet cables, $0.25 each. Radio Shack Power Supply, 13.8 volt at 3 amps, $3.00. Swing arm desk lamp includes light bulb and other various items; $5.00 to $25.00. Kenwood TL-922A Linear Amplifier AS IS: All items as shown below: Contact Denney for price.





Wanted and For Sale Ads (Continued)

See Denney N6HV for the following items: (note: all Items have been donated to the club)

Wanted and For Sale Ads (Continued)

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Want and For Sale Ads (Continued)

See Denney N6HV for the following items: (note: all Items except the IC-251A have been donated to the club)

Asking for $75 (It's an all mode 2 meter rig.)

Asking for a $150 donation

Asking for a $100 donation

Want and For Sale Ads (Continued)

See Denney N6HV for the following items: (all the items below have been donated to the club)

Asking for a $10 donation

Asking for a $35 donation

Want and For Sale Ads (Continued)

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Want and For Sale Ads (Continued)

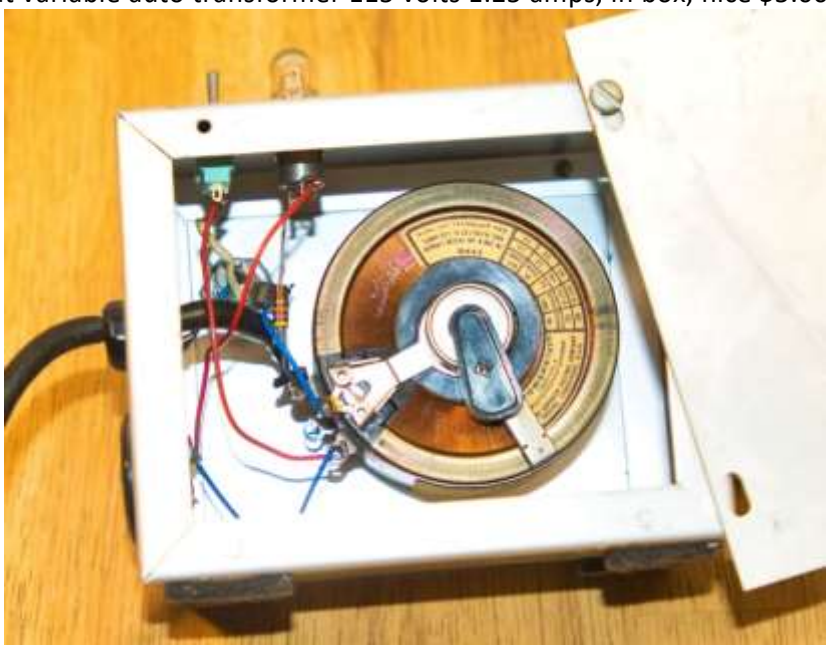
See Denney N6HV for the following items: (all the items below have been donated to the club)

Switching power supply for parts, lots of three terminal regulars, heavy aluminum base $5.00 or offer

Want and For Sale Ads (Continued)

See Denney N6HV for the following items: (all the items below have been donated to the club)

Powerstat variable auto transformer 115 volts 1.25 amps, in box, nice $5.00 or offer;



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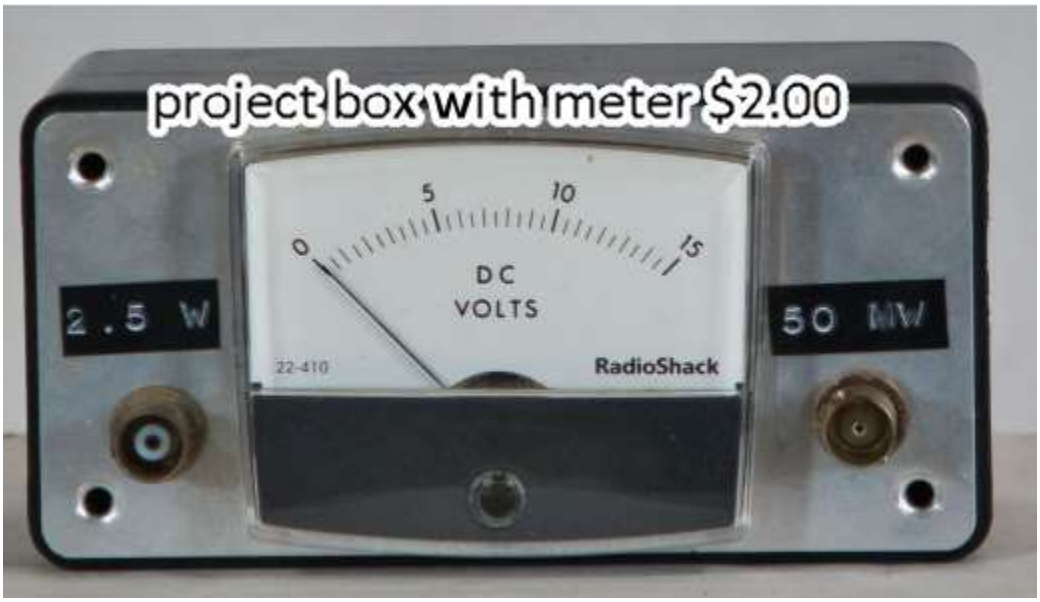


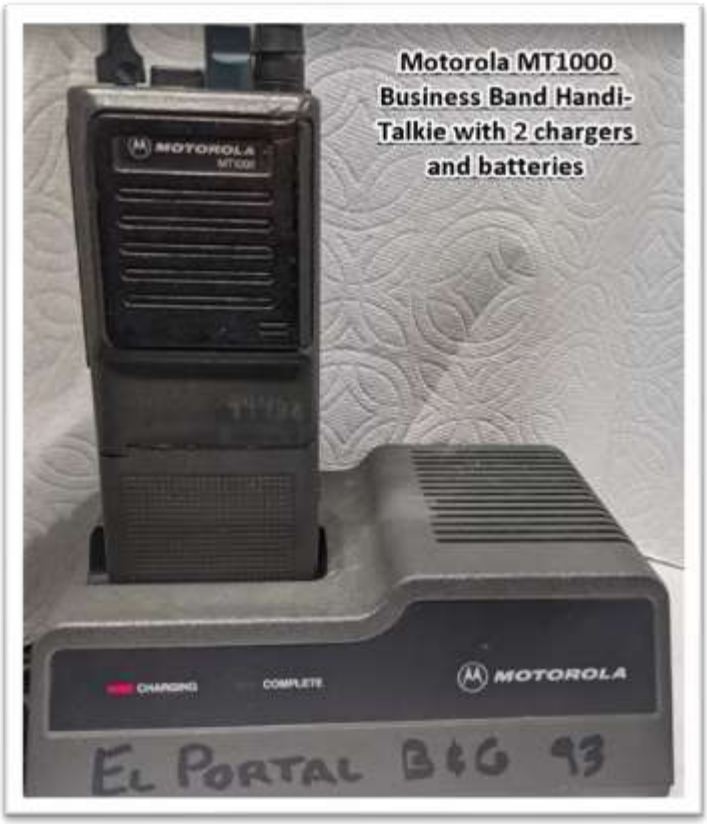
Wanted and For Sale Ads (Continued)

Orv – W6BI – orv.beach@gmail.com

TenTec Omni VI Plus HF Transceiver 160 through 10 with 1.8 kHz, 500 and 250 Hz filters – works fine, receiver recently aligned. With power cable, TenTec microphone and original manual - $450

Wanted and For Sale Ads (Continued)

For Sale Wayne Woodhams (w.wixman@yahoo.com)



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Wanted and For Sale Ads (Continued) Wayne Woodhams (w.wixman@yahoo.com)

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See https://www.youtube.com/watch?v=eE7J4Kpbe6w&t=432s for refurbish

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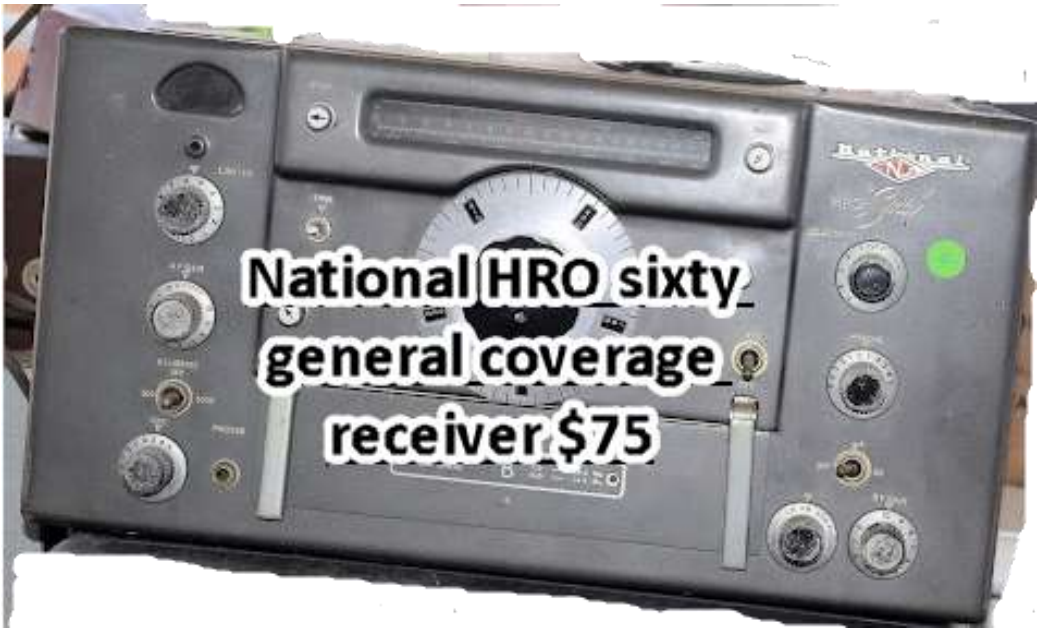

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Wanted and For Sale Ads (Continued) Wayne Woodhams (w.wixman@yahoo.com)

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Wanted and For Sale Ads (Continued)

Five Hammarlund SP-600 Receivers Robert KM6RSS@gmail.com