



Meeting News:

The July 8th general membership meeting was held at the Dudley House and on Zoom. We had twenty nine at the meeting with three new members (Joanne KN6TUM, Kim and Wayne Winch) as well as two attending via Zoom (Stewart KG6BOV and Pedro K6MIL) for a total of thirty one. Denney N6HV did a double header; "K6MEP Field Day Highlights" and "My Old Key", both included photos and Denney passed around his old Morse code keys. The presentations have been placed on the K6MEP website.

Our next club meeting is scheduled for August 12th at the Dudley House. Scheduled is Mark Swaney KD6ASL who will present "My Experiences with DMR". Visitors are always welcome to attend our meetings. We will continue to update our members on any new Ventura County Health Department requirements.

Our meetings start promptly at 19:00. After the call to order, welcoming members and guests, the announcements are made. Then our committee members are asked to present their status. Following the status report is a request for any new business. A break is taken to get the presentation set up, serve refreshments and have some social time. After the presentation is complete and everyone has asked and received answers to their questions, the meeting is adjourned. Visitors are always welcome to attend our club meeting; afterwards, many of us go to Toppers for a slice of pizza and a great deal of ham radio discussions.

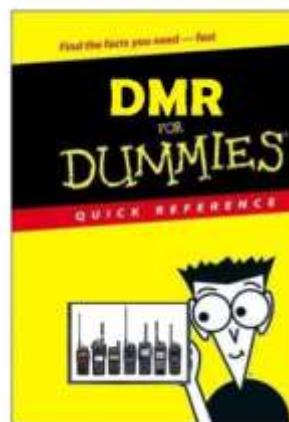
The Inside Story

Meeting News:	1
Message from the President.....	3
Minutes of the July 3rd, 2022, VCARC Board Meeting.....	11
Minutes of the July 8th, 2022 General Membership Meeting of VCARC.....	13
K6MEP Monday Night Net Update Robert KM6RSS.....	15
Field Day 2022 Submission Report by Robert KM6RSS	16
Thoughts from the West - Reese West KQ6TT	17
An Old Man's Hobby? By Steve Noll WA6EJO	18
Trivia by Dana KG6WXE	19
K6MEP Monday Night Net Script.....	20
Will the Sun Soon Power First Responders?.....	22
Selected Contests & Special Events	26
Contest Corral	27
Upcoming FCC Exam Session Preparation Sites.....	28
Upcoming FCC Exam Test.....	29
On Exam Day Bring the Following Items:.....	30
Convention and Hamfest Calendar.....	31
ARRL News	33
Measuring RF Antenna Gain in dB-MEG.....	41
US Amateur Radio Bands	45
W1AW Schedule	46

The DMR Basics & No Frills

KD6ASL's

- What is DMR? 8/12/22 Talk
- Digital vs. Analog
- Time Slots [TDMA] & Talk Groups
- Zones
- Color Codes
- Code Plugs
- Scanning and Roaming
- Simplex
- Admit Criteria
- Repeater Access
- Basic Programming



Message from the President

The Prez Sez,

ARRL Field Day Submission Process is my theme for the August Keyer



Now that the 2022 Field Day is over, it's time to submit the logs and bonus points to the ARRL website. Denney N6HV and Clement KM6OKZ were this year's Field Day committee chairmen. One of their duties is to manage the operator's list and contact each one to determine if any contacts and/or bonus points were made. Emails were sent out, phone calls made and paper and/or N3FJP files were collected. The three of us got together at Clements's house and opened up my copy of N3FJP on my laptop. I had been the 1.25m "Band Captain" and had brought my tablet computer with me to Field Day so anyone could log their contacts if they used my rig and computer. Many of the operators used N3FJP and expected that the server linked to their computer would remain up from 11AM on Saturday to 11AM on Sunday. However, after Jeremy left on Saturday night, the communications system (Wi-Fi) suffered a power supply failure and the operators who came back early Sunday morning weren't able to share the data and avoid duplicate contacts on the same band and mode.

(Continued on Next Page)

Club Offices	And Keyer	Contributors
President	Robert Shank	KM6RSS
Vice-President	Clement Alberts	KM6OKZ
Secretary	Phil Cohen	WA6BUZ
Treasurer	John Gartman	W6JPG
Board Member	Dave Schmidt	AI6VX
Board Member	Mark Swaney	KD6ASL
Board Member	Burt Auerbach	KA6BJA
Program Manager	Clement Alberts	KM6OKZ
Equipment Mgr.	Denney Pistole	N6HV
Refreshments	Linda Shank	
Facilities	Richard Abbey	WB6AEW
Keyer Editor	Robert Shank	KM6RSS
Webmaster	Robert Shank	KM6RSS
Domain	Phil Cohen	WA6BUZ
Membership	Open	Please volunteer
License Trustee	Dave Schmidt	AI6VX
ARRL Club Rep.	Dave Schmidt	AI6VX
ACS/ARES Rep.	Burt Auerbach	KA6BJA
Monday Night Net	Open	Please volunteer
QSL Manager	Ben Holmes	K6QV
Safety Officer	Mark Vodon	KI6PTE
PIO/Trivia	Dana Wentling	KG6WXE
Columnist	Reese West	KQ6TT
Columnist	Steve Noll	WA6EJO

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. Layout and logos are the property of The Ventura County Amateur Radio Club, K6MEP.

The stories printed in this journal remain the property of the writers, without whom we would not have a publication.

Permission to reprint articles should be obtained from the authors. Articles and photos from the ARRL are reproduced with permission. Material submitted for inclusion is encouraged.

Submit material by email to KM6RSS@gmail.com.

Our club mailing address is:

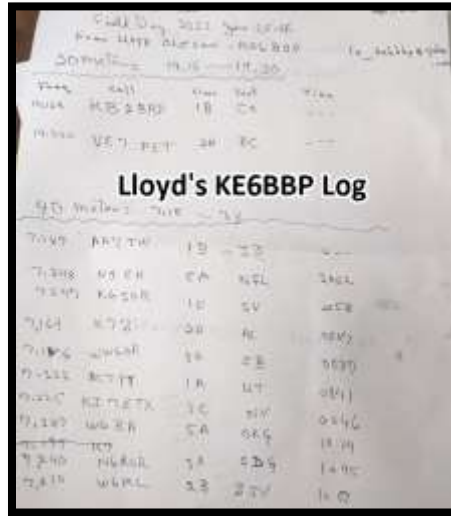
K6MEP
PO Box 2103
Oxnard, CA 93034-2103

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)

Some operators sent us their N3FJP ADIF logs but didn't fill out their initials or their call sign so I had to painstakingly open each record and add them, one at a time.

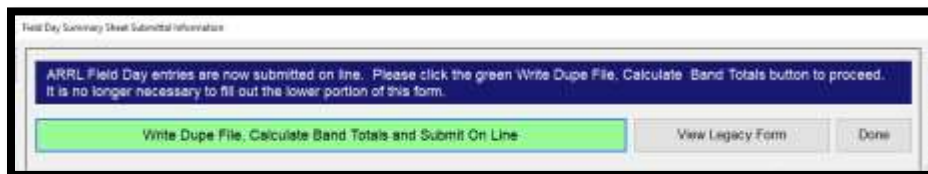
Other operators wrote the logs to paper. Denney had some of the logs; I took photos of all the logs that I saw just in case they got mislaid. Clement printed out the logs and Denney read them to me so that I could enter them without any errors.



I entered the operator's information into N3FJP and checked for duplicates, saving the file and



selecting "Write Cabrillo File".



(Continued on next page)

Message from the President (continued)

After it was written, the next step was to get to the ARRL Field Day entry website.

There were many fields to fill in, as can be seen in the image above.

Besides call used, location, club name, the number of participants (included everyone who operated and helped set-up and take-down), they also wanted the number of transmitters in simultaneous operation. Denney had set that number (7) Saturday morning just before 11AM so that is what I entered. Our class was A so the combination made 7A. We used several types of power (Phil's generator, battery, and solar) and stayed at 100 watts or less. The next section dealt with the bonus points and it helped that I had created and saved pdf files that documented each type of bonus that requested information. Some bonuses didn't require documents, such as public location, site visit by elected official (we didn't have any so it was left blank), and social media (we do have our K6MEP Facebook page with the Field Day announcement available for search by ARRL officials).

(Continued on next page)

Message from the President (continued)

The next section asked about the band/mode breakdown. When you write the Cabrillo file from N3FJP, it provides the band and mode “spreadsheet” for our operators’ contacts. You have to hand-enter all of the data into the table, as shown below:

Band/Mode QSO Breakdown: Do not list GOTA QSOs in this section.

Upload band/mode calls list (Dupe Sheet or Cabrillo file): K6MEP.dup

Band	CW		Digital		Phone	
	QSOs	Pwr(W)	QSOs	Pwr(W)	QSOs	Pwr(W)
160m						
80m			3	100		
40m	3	100	82	100	15	
20m	1	100	70	100	15	100
15m			4	100	5	100
10m			2	100		
6m						
2m					5	50
222					2	60
432						
Other						
Satellite						

For **GOTA Bonus**, list names, calls and number of QSOs for each GOTA station operator: Check for GOTA coach extra credit

	Name	Call	CW		Digital		Phone	
			QSOs	Pwr(W)	QSOs	Pwr(W)	QSOs	Pwr(W)
1								
2								
3								
4								
5								
6								
7								
8								
9								
10								

//We have observed all competition rules as well as all regulations for amateur radio in my/our country. My/our report is correct and true to the best of my/our knowledge. I/

Name: Call: E-mail Address:



Mark and Dana cook up sausage patties

(Continued on next page)

Message from the President (Continued)

Links:

Update entry/upload documents

<http://field-day.arrl.org/fdentry.php?call=k6mep&id=246x5yfm>

Soapbox comments/photos

<http://contests.arrl.org/contestsoapbox.php?call=k6mep&id=246x5yfm>

Summary:

Entry received at: 2022-07-23 01:26:38

Call Used: K6MEP GOTA Station Call: (NONE) ARRL/RAC Section: SB

Class: 7A

Participants: 22 Club/Group Name: Ventura County ARC

Power Source(s): Generator, Battery, Solar

Power Multiplier: 2X

Preliminary Total Score: 2,396

Bonus Points:

100% emergency power 700

Media Publicity 100 - Documented by KVTA

Field Day Posting.jpg

Public location 100

Public information table 100 - Documented by K6MEP

Visitors log 062522.pdf

(Continued on next page)

Message from the President (Continued)

Formal message to ARRL SM/SEC 100 - Documented by
Radiogram to Rick Tate SEC via Winlink Packet on 145.050 FM.pdf
Formal messages handled (10 x 10, max of 100) 100 - Documented by
Radiograms Sent.pdf
Natural power QSOs completed 100 - Documented by
Natural Power QSOs.pdf
Site visit by invited served agency 100
Safety officer 100 - Documented by Safety
Officer Checklist and Signatures.pdf
Social media 100
Entry submitted via web 50
Total bonus points 1,650
Score Summary: (Cabrillo log/dupe sheet file: K6MEP.dup)

CW Digital Phone Total

Total QSOs	4	161	43
Total Points	8	322	43

373 Claimed Score = (QSO points x
power mult) = 746

Submitted by: Robert Shank, KM6RSS km6rss@arrl.net

(Continued on next page)

Message from the President (Continued)

Band/Mode QSO Breakdown:

	CW		Digital		Phone	
	QSOs	Pwr(W)	QSOs	Pwr(W)	QSOs	Pwr(W)
160m						
80m			3	100		
40m	3	100	82	100	15	100
20m	1	100	70	100	15	100
15m			4	100	6	100
10m			2	100		
6m						
2m					5	50
222					2	60
432						
Other						
Satellite						
GOTA						
TOTAL	4		161		43	

That's all it takes for the entire process! Easy, right?
73,
Robert Shank KM6RSS
President, VCARC



Minutes of the July 3rd, 2022, VCARC Board Meeting

MEETING LOCATION: Zoom

TIME: 19:02 to 19:59

Timekeeper: Burt KA6BJA

MEETING CALLED TO ORDER at 19:02

Attending the meeting with various joining times were: Robert KM6RSS, Mark Swaney KD6ASL, Burt KA6BJA, Dave AI6VX and John W6JPG. Present as chairpersons were Denney N6HV, Tim KN6JPG and Jeremy KN6JMD. Stewart Stone KG6BOV attended as a guest. The meeting started when a quorum (4) was present. All people that have groups.io and/or K6MEP.org access were invited to the meeting.

Robert welcomed all attendees

Minutes: (Phil WA6BUZ wasn't present; Robert handled the secretarial duties)

- Motion to approve minutes of the June 5th board meeting as published in the July Keyer by John with Burt seconding. The vote was unanimous.
- Motion to approve minutes of the June 10th regular meeting as published in the July Keyer by Burt with John seconding. The vote was unanimous.
- Motion to approve minutes of the June 19th special Field Day meeting as published in the July Keyer by Burt with Mark seconding. The vote was unanimous.

Officers Report: (John W6JPG)

- Treasurer: As John was unavailable I sent out the details to the board members (needed a later correction to petty cash of \$320). A motion to approve was made by Mark with Burt seconding. The vote was unanimous.

Committee Reports:

Accounting Committee Budget Status (John W6JPG, Mark KD6ASL and Dave AI6VX)

- Dave presented the budget for board review and approval to discuss with the general membership as a “work in progress” at the July 8th meeting. Modifications were made and Dave will add the latest data to the “D” column. The spreadsheet will be projected and “Zoomed out” but no copies will be provided to the membership as the 2022 budget isn't ready but we expect that it will be in 2023.

Program Manager (Clement KM6OKZ; not in attendance)

- The speakers for the year have been scheduled

Members Health and Safety (Mark KI6PTE; not in attendance)

- No special needs assumed

Youth Committee (Tim KN6JGB)

- Trifold review and update with motion to approve by Mark with Dave seconding. The vote was unanimous.
- Wings STEM Update. Tim will discuss the STEM needs at the July 8th meeting and ask for volunteers to take time slots across the August 20 and 21 days.

(Continued on next page)

Minutes of the July 3rd, 2022, VCARC Board Meeting (Continued)

Committee Reports (Continued):

Picnic Committee (Mark KD6ASL) agreed to continue his role as chairperson.

- September 3 (from 11AM-3PM) at the Dudley House (reserved).

Field Day Committee Compilation Results (Denney N6HV)

- Need to contact operators and collect logs in Cabrillo format; submit to ARRL along with the bonus points.
- Denney will be ready to present the Field Day report at the July 8th general membership.

ARRL Chair (Dave AI6VX)

- Nothing to report.

ACS/ARES Chair (Burt KA6BJA)

- Nothing to report.

Meeting Venue (Mark KD6ASL)

- Nothing to report.

DecemberFest (Robert)

- Black Bear Diner has been reserved (\$200 non-refundable deposit made but will be used to defray cost of meals) based on board and member feedback.
 - Robert will send poll to see who plans on attending.
 - Buffet main and side dishes to be selected by those who will attend.

Special Orders:

Inventory (Denney N6HV)

- Collect donation from Santa Monica (need volunteers and date) for sale at the next TRW swap meet on July 30?
 - Pedro has volunteered to drive and Denney and Steve Noll will load.
- Remaining inventory of club items and updated values needed
 - Robert will update the spreadsheet and photos.

Unfinished Business:

Need the Following Committees:

- Membership (seems to be handled by various members without any chairman)
- Monday Night Net (need net control operators/alternates for remainder of year)

New Business:

None

Announcements:

- Our next club meeting is scheduled for July 8th at the Dudley House. Denney N6HV will discuss “K6MEP Field Day Results and Lessons Learned”.

Adjournment:

- Dave made the motion to adjourn with Burt seconding. The vote was unanimous and the meeting adjourned at 19:59. Robert thanked all for attending and reminded everyone to have a safe and sane 4th of July holiday.

Minutes of the July 8th, 2022 General Membership Meeting of VCARC

GENERAL MEMBERSHIP MEETING (19:00)

MEETING ADDRESS: Dudley Historical House, 197 N. Ashwood Dr. Ventura CA 93003 and simulcast on Zoom

ATTENDANCE: We had twenty nine sign in at the meeting with three new members (Joanne KN6TUM, Kim and Wayne Winch) as well as two attending via Zoom (Stewart KG6BOV and Pedro K6MIL) for a total of thirty one. Two visitors Duane Thomas and Kim, didn't sign in.

CALL TO ORDER 19:00

MEETING MINUTES

President Robert welcomed everyone and held the Flag salute.

Introductions.

New Members Kim and Wayne Winch and Joanne Budzinski KN6TUM. Visitors Duane Thomas and Kim and Mark Brennan N9LS.

Committee Reports:

- **Budget committee (John W6JPG, Mark KD6ASL and Dave AI6VX):** Dave described the current “work in progress” budget and will be working on next year’s budget.
- **ARRL Liaison (Dave AI6VX):** Dave would like the club to participate in the ARRL VE program.
- **K6MEP Monday Night Contest:** Robert announced the K6MEP Monday Night Contest status as of week 27; 445 check-ins with 66 visitors and a 16.63 average. Please volunteer as net control operators for the month of July (see sign-up sheet on clipboard or groups.io website)
- **Goals Committee:** Mark KD6ASL and Burt KA6BJA. No progress to date.
- **Club Inventory:** Denney N6HV spoke about Pedro, Steve and his trip to Santa Monica to pick up 30-40 boxes of non-ham items to add to the club's inventory.
- **Health and Safety:** Mark Vodon KI6PTE said Field Day went ok without anyone getting hurt.
- **Youth Outreach:** Tim KN6JGB briefly updated the club on our youth outreach including Wings over Camarillo STEM; on the back table is a sign-up for August 20-21.
- **Picnic:** September 3rd is our fall picnic at the Dudley House. Please respond to our groups.io poll or fill in the response sheet that is on the clipboard at the back of the room.
- **ACS/ARES Liaison (Burt KA6BJA).** Burt mentioned that Mike Felio K6MJF (feliomj@gmail.com) is the Comm Lead for Wings Over Camarillo.
- **DecemberFest.** The date is December 9th and the location is Black Bear Diner at the corner of Harbor and Seaward in Ventura just off the 101. An attendance poll is on groups.io as well as a response sheet on the clipboard. The cost is approximately \$30 per person; depending on the main courses as this is a full buffet with side dishes, salads, bread, drinks and desserts as well as a choice up three to four main courses.

(Continued on next page)

Minutes of the July 8th, 2022 General Membership Meeting of VCARC (continued)

New Business:

- No New Business

Break for 15 minutes to set up presentation, have refreshments and socialize.

Presentation:

- Denney N6HV did a double header; "K6MEP Field Day Highlights" and "My Old Key"; both included photos and Denney passed around his old Morse code keys. The presentations will be placed on the K6MEP website.

Announcements:

- The next Board Meeting (on Zoom) is August 7th; everyone is invited to attend with the credentials posted on our calendars
- Everyone was reminded about the club's next meeting date August 12th. Mark Swaney KD6ASL will present "My experiences with DMR".
- Thanks to Linda (brownies, lemon bars, snacks, drinks, coffee, etc.) and Ben (donut holes) for bringing the refreshments; most were gone by the end of the meeting.

Adjournment:

- Meeting formally adjourned by vote at 20:55 and everyone was invited to socialize at Toppers afterwards.

OFFICER ATTENDEES

OFFICE	LAST	FIRST	CALL SIGN	PRESENT
PRESIDENT	SHANK	ROBERT	KM6RSS	X
VP	ALBERTS	CLEMENT	KM6OKZ	
TREASURER	GARTMAN	JOHN	W6JPG	X
SECRETARY	COHEN	PHIL	WA6BUZ	X
BOARD	AUERBACH	BURT	KA6BJA	X
BOARD	SCHMIDT	DAVE	AI6VX	X
BOARD	SWANEY	MARK	KD6ASL	X



K6MEP Monday Night Net Update Robert KM6RSS

Our new Monday Night Net Contest started Monday, January 3rd and will end on December 5th. To give those who are interested in the experience of being part of our Monday Night Net Contest as Control Operators, I've placed a sign-up spreadsheet on our groups.io website under files, 2022 Monday Night Net. We need back-up net controllers to sign up as well. If you would like to volunteer, please contact me with the date(s) you would like and whether you want to be the primary or the back-up net controller and I'll update the list, which is saved to our K6MEP.groups.io

website:<https://groups.io/g/K6MEP/files/2022%20Monday%20Night%20Net%20Contest> .

Below are the current Monday Night Net Contest Totals. Our groups.io has all of the Monday Night Net Contest documents in the files folder. Our contest-to-date total over 30 weeks is 484 check-ins with 76 visitors and an average of 16.13.

Monday Night Net Contest Totals to Date			
Week	Date	Total	Visitors
1	1/3/2022	15	2
2	1/10/2022	17	2
3	1/17/2022	14	1
4	1/24/2022	20	3
5	1/31/2022	19	1
6	2/7/2022	17	4
7	2/14/2022	14	2
8	2/21/2022	16	2
9	2/28/2022	11	1
10	3/7/2022	14	1
11	3/14/2022	17	2
12	3/21/2022	15	1
13	3/28/2022	13	0
14	4/4/2022	17	2
15	4/11/2022	18	4
16	4/18/2022	15	1
17	4/25/2022	19	3
18	5/2/2022	16	3
19	5/9/2022	12	1
20	5/16/2022	20	7
21	5/23/2022	20	3
22	5/30/2022	20	6
23	6/6/2022	18	4
24	6/13/2022	14	3
25	6/20/2022	18	3
26	6/27/2022	18	2
27	7/4/2022	15	2
28	7/11/2022	11	1
29	7/18/2022	11	1
30	7/25/2022	20	8
Total		484	76

Field Day 2022 Submission Report by Robert KM6RSS

The Field Day logs and bonus points have been submitted to the ARRL (as my President’s Message has detailed) and our Preliminary Total Score is 2,396!

Band/Mode QSO Breakdown:

	CW		Digital		Phone	
	QSOs	Pwr(W)	QSOs	Pwr(W)	QSOs	Pwr(W)
160m						
80m			3	100		
40m	3	100	82	100	15	100
20m	1	100	70	100	15	100
15m			4	100	6	100
10m			2	100		
6m						
2m					5	50
222					2	60
432						
Other						
Satellite						
GOTA						
TOTAL	4		161		43	

73, Robert KM6RSS



Thoughts from the West - Reese West KQ6TT

Antenna Disinformation

As I have written before, I have never seen any technical area with more misinformation, wrong theories, and direct lies as with antennas.

As an example: I have records showing the claim that a Yagi antenna with twenty dB power concentration in transmission also gains twenty dB more energy as a receiving antenna. As a Yagi adds more elements to form a narrower beam, it does not gather more energy on receiving. The capture area remains about the same. The Yagi receiving antenna does improve the signal to noise ratio by rejecting noise signals from unwanted directions.

It is also true that a short vertical antenna, a one-eighth or shorter wavelength antenna, captures about the same energy as a quarter-wave vertical. Which brings me to the recent article in QST that I thought was so poor that I did consider dropping the subscription. I won't, because I believe in supporting Ham radio.

The article describes performance of a short antenna without presenting any real data. It does say that there is a good impedance match. The match can also be good into a resistor. Also, short antennas are generally narrow band. The bandwidth can easily be increase by adding loss. I looked up the patent and found that the magnetic fields drawn actually penetrate right through conducting sheets as if the metal is not there. Remember that a patent is issued for new and novel structures. The patented items don't have to work. The most amazing item in the article is 'because the antenna has a strong magnetic near field, local noise is reduced.' That should be published as a separate discovery. How do you generate magnetic fields with no magnetic materials and no currents? These fields also selectively reduce unwanted signals but apparently don't reduce the desired signals. That is a better invention than the antenna. How does the magnetic field know which signal you want? Or if the noise source is local?



Reese West KQ6TT

An Old Man’s Hobby? By Steve Noll WA6EJO

Look around at a club meeting, what do you think? I’ve always wondered about this. The lack of youth. Is it because of cell phones?(I don’t think so.) Because of computers and the Internet? Might be part of it. Computer games and social networks? Could be part of it too. The age of the average American Radio Relay League member is 68.

I recently had the opportunity to talk to one of our local League officials about this. I asked, don’t we have more Hams today than any time in history? He confirmed that but said many have gotten their licenses through quickie courses and testing and then never got on the air. Interesting! I asked him whenever was it that there were a lot of young Hams? He said, “fifty years ago.” Well, I can’t confirm or deny that.

Possibly another factor is that Ham Radio is a hobby. A hobby requires two things. Spare time, which you are likely to have when you are older, i.e.: retired. The second thing is, for not all but for many hobbies: money. Disposable income. Spare time and cash probably not in abundance for a high school student.

One aspect of Ham Radio is the technical part of it. Something has been happening in recent years that may improve the situation: STEM. Science Technology Engineering and Math has really started to take off in education. FIRST Robotics, FIRST LEGO League, STEM LEGO, Maker Camp, Maker Lab, and the Maker movement. STEM is taught starting in kindergarten now. Such a welcome change! A sad, but true, story: When I was in high school I was big into the Science Fair. One day the Brainiac in the class ahead of me and I get called into the principals’ office. We’re there to get awards from Edison, IEEE, or some outfit, I don’t recall which. Principal says, “Yeah, there will be no assembly or public award presentation.” He said, “The parents only care about sports.” Like their little Billy is really going to end up making his living playing in the NFL? So, I’m glad to see that the pendulum has finally swung in the other direction. It can only help Ham Radio.

But, what do I know? It may be worthwhile to hear what others have to say.

Here is one guy’s opinion. May be a little controversial. Does he really have an answer?

“The Future of Amateur Radio is with our youth . . . not!”

<https://cupano.com/2021/10/13/the-future-of-amateur-radio-is-with-our-youth-not/>

Sort of a rebuttal to the above. “The Future of Amateur Radio IS with our youth!!!”

<https://n0ssc.com/posts/1307-the-future-of-amateur-radio-is-with-our-youth>

Worth a read: “Millennials Are Killing Ham Radio”

<https://n0ssc.com/posts/583-millennials-are-killing-ham-radio>

Okay, this one is pretty good: “Finding and Maintaining Younger Ham Radio Operators”

<https://www.onallbands.com/%ef%bb%bfinding-and-maintaining-younger-ham-radio-operators/>

And the IEEE chips in: “The Uncertain Future of Ham Radio”

<https://spectrum.ieee.org/ham-radio>

Some of what I have read has said that there actually _are_ young Hams. So if true I wonder is the “problem” that maybe they just don’t want to attend club meetings with a bunch of old men?

73, Steve WA6EJO

Trivia by Dana KG6WXE

DID YOU KNOW?

1. In the 1800s Louisville slugger baseball bats were originally started as butter churn makers.



2. The state of Alaska can reach from California to Florida.



3. Americans spend approximately \$ 1,500.00 a year on fast food.



DE

Dana

KG6WXE 🤖🤖🤖🤖

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 the Ventura County Amateur Radio Club. 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.

At this time I will call on tonight's alternate net control station (Name) _____(Call sign)_____, (Pause for alternate NC check in with "how's my signal "and respond appropriately). If for any reason my station should become inoperable the alternate net control station will proceed with the net.

K6MEP, the Ventura County Amateur Radio Club, meets at 19:00 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 ____ at the Dudley House and Zoom, where the presentation topic is _____ We urge any non-members interested in the Ventura County Amateur Radio Club to contact us at K6MEP@qsl.net. Non-members interested in amateur radio are welcome to attend our meetings.

Our 2022 Contest started on January 3rd and ends on December 5th. Make sure to set your calendar alarms to remind you to check-in and join the Zoom get-together that follows.

(Continued on Next Page)

K6MEP Monday Night Net Script (Continued)

The contest rules are: The person who checks-in to the K6MEP Monday Night Net Contest must hold a valid Amateur Radio License. If a non-member wins, they will be given a two-year membership in the club. The member's awards consist of \$100.00 for first place, \$50.00 for second place and \$25.00 for third place. In case of ties, the awards will be split equally among the members who qualify for the monetary award.

When you check-in, please give your call sign (phonetically), name and if you are a Ventura County Amateur Radio Club member. If you are not a member of the club, please include your QTH or location.

Please check in now. (you can use the quick check in list spreadsheet if it helps in logging check-ins).

If the check-ins are completed or there is a lull in the check-ins say: Hearing no other check-ins at this time, we will now begin with our Roundtable (Start with the first check-in and ask him/her about ham radio activities during last week, then move on to the next person). At every ten minute mark, identify with your name, call sign and Ventura County Amateur Radio Club net.

During the Roundtable, pause every 10 minutes and identify yourself with "This is (Name) _____(Call sign)_____, tonight's net control station for the Ventura County Amateur Radio Club Net". Also ask if anyone wants to check-in. If none, ask "Any last comments? ***** Any late, missed, or visitor check-ins?"

Please check-in now.

Say "Hearing no new check-ins, does anyone have anything else they would like to add to tonight's net?"

If nothing is heard;

(Closing): This concludes the Ventura County Amateur Radio Club 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 Ventura County Amateur Radio Club net control, signing off and returning the repeater to its normal use.

Will the Sun Soon Power First Responders?

Release Date: July 21, 2022 <https://www.dhs.gov/science-and-technology/news/2022/07/21/feature-article-will-sun-soon-power-first-responders>

Fabric woven to harness solar power recently completed weaving trials. The fabric will ultimately be used to design high-functioning gear that can keep responders' tech charged and ready.

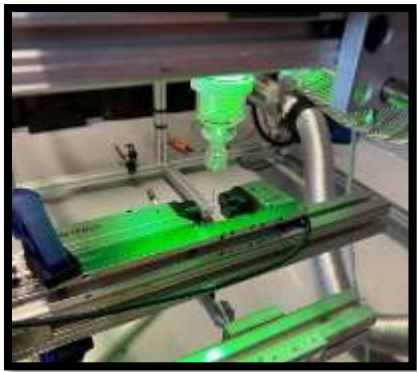
Shining Solution

Millions of American homes are powered by solar panels, capturing light shining down from above and converting it into electricity. Solar power is a well-established energy resource with enormous potential and countless applications—perhaps limited only by our imaginations. Good thing imagination is an endlessly renewable resource for the [Science and Technology Directorate](#) (S&T).

The idea of clothing that can capture sunlight and turn it into electricity may sound like something out of science fiction, but S&T is working to make it a reality. [Photovoltaic \(PV\) energy harvesting fabric](#) is not only possible, but also a practical solution to a persistent challenge. First responders need light-weight power sources for their sensors, and other body-worn electronic devices. Energy harvesting fabric mitigates risk associated with relying solely on wall outlets to charge equipment. For instance, during a natural disaster and emergency response, the power grids may be compromised. The fabric also eliminates the need to carry extra batteries.

“Smart textiles are the future,” said S&T Program Manager Kimberli Jones-Holt. “This energy harvesting fabric project is incredibly innovative. I’ve been so impressed by the ingenuity of the research team and I look forward to the day that first responders are wearing and benefitting from this product.”

A Stitch in Time



Measuring the stainless steel wire. Photo credit: University of Massachusetts Lowell. (Continued on next page)

Will the Sun Soon Power First Responders? (Continued)

The First Responder Resource Group initially identified this capability as a high-priority need, and S&T listened. The solution in development now involves creating a PV fiber that can be woven into a power fabric and then integrated onto first responder garments, shelters, and related equipment to provide reliable power for charging batteries to power electronics. The power output of the fabric will be sufficient to charge AA batteries in eight hours. This effort will provide the foundational framework towards the development of commercially viable, textile-integrated, energy-harvesting PV devices that can be tested for direct application in the field.

S&T awarded \$199,260 to Boston-based company Protect the Force, LLC, in August 2018 to initiate this work through the Silicon Valley Innovation Program. The University of Massachusetts Lowell (UML) is also partnering on this important project through its world-class Fabric Discovery Center. Together, the team of industry, academic, and S&T experts created an initial prototype fabric with fibers containing an incredibly thin light harvesting coating on smooth stainless-steel wire core that measures only a few hundred nanometers. This allowed the team to successfully demonstrate the proof of concept at small scale (100 cm² fabric swatch) in July 2019 and then move on to the next phase of development.

Work in Progress

“This is innovation in real-time,” said Francisco Martinez, Vice President to the Chief Technology Officer at Protect the Force, LLC. “This is a new technology, so the manufacturing equipment doesn’t exist yet. We’re constantly adjusting and improving to come up with a product that works and can be scaled up.”

Image



Ultraviolet lamp used for curing the wire cladding. Photo credit: University of Massachusetts Lowell. (Continued on next page)

Will the Sun Soon Power First Responders? (Continued)

A key testament to the team’s real-time ingenuity and problem-solving is the way they have been able to adapt and reconfigure their equipment. Their curing process is a prime example of this. They needed an ultraviolet lamp to cure the wire cladding since uncured wire is sticky and thus hard to work with. (Cladding is the application of protective layers for insulation.) Working at the cutting-edge of technology meant there was nothing commercially available for their purposes. The team was able to identify UV curable cladding material and the appropriate UV lamp to ensure uniform, even curing of the wire—and subsequent quality and reliability of the woven fabric.

A Bright Future

Phase II includes initial production, testing of the PV energy harvesting fabric swatches, and demonstration of integration onto a firefighter garment. While the initial application is planned for wildland firefighting, S&T is exploring compelling opportunities to transition the technology to other Department of Homeland Security agencies and beyond.

“What we learn during this process can be used for a lot of other things,” added Dr. Ramaswamy Nagarajan, UML Engineering Professor and Co-Director of the Center for Advanced Materials’ Harnessing Emerging Research Opportunities to Empower Soldiers (HEROES) program. “We need to get this right to enable future applications.”

Image



Fabric swatch with various patterns. Photo credit: University of Massachusetts Lowell. (Continued on next page)

Will the Sun Soon Power First Responders? (Continued)

In the Spring of 2022, UML successfully conducted weaving trials. The team integrated the PV nanofibers with hundreds of feet of Nomex® yarn, a flame-resistant textile used in protective apparel, using a Thread Controller 2 digital loom.

Design optimization is now currently underway. Developers are working on weaving designs for the textile fibers that maximizes exposure to the sun and thus creates peak energy output from the fabric. They are experimenting with various patterns including twill, satin, dobby, and broken twill.

Flexibility and water repellence are other very important factors, and both depend upon proper cladding. Developers will also test resistance to various stressors to ensure compliance with National Fire Protection Association standards and work to make the fabric breathable, which has proven to be a significant scientific challenge.

The project will conclude later this year with the completion of Phase II. “The work that has been done to this point will be used to help determine additional interest from the first responder community for this type of technology,” explained Jones-Holt. “The task will closeout with the development of energy harvesting fabric woven into a first responder garment.”



Selected 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!

July 1 – Aug. 31, 0000Z – 2359Z, W0DBQ, Dubuque, IA. Great River Amateur Radio Club. **Iowa Railroads on the Air – IRROTA**. 7.250 7.280 14.340 14.347. Certificate & QSL. IRROTA c/o the Great River ARC, P.O. Box 1384, Dubuque, IA 52004. w9upk@arrl.net or www.w0dbq.org

July 19 – July 23, 1800Z – 2000Z, W4H, Boonville, IN. Warrick ARES/RACES. **Warrick County 4H Fair**. 14.320 SSB. QSL. Steve Connaughton, 7677 Jenner Rd., Chandler, IN 47610. *Additional modes and frequencies possible depending on band and weather conditions. Operating times will be mostly late afternoons and evenings.* www.warrickaresraces.org

July 22 – July 24, 0000Z – 0000Z, K8S, Long Beach, CA. Long Beach Boat and Ski Club. **Long Beach Catalina Ski Race**. 146.895 449.180 449.78. Certificate. Rod La Rocque, 340 El Rancho, Moose Pass, AK 99631. rodneyd44@yahoo.com

July 29 – Aug. 21, 1600Z – 2000Z, W9ISF, Indianapolis, IN. Indiana State Fair Amateur Radio Club. **Indiana State Fair**. 7.245 14.245 18.150. QSL. Indiana State Fair ARC, 7405 E. County Rd. 900 N., Brownsburg, IN 46112.

Aug. 4, 1400Z – 2300Z, K1CG, Port Angeles, WA. CG CW Operators Association. **US Coast Guard 232nd Birthday**. 3.552 7.052 14.052 21.052. QSL. Fred Goodwin, K1CG, 424 N. Bagley Ck., Port Angeles, WA 98362. www.qrz.com/db/k1cg

Aug. 6, 1200Z – 2359Z, KC3LWP, Philadelphia, PA. Sociedad De Operadores Latino Americano. **PASOLA 4th Anniversary**. 14.320. Certificate. KC3LWP, 3520 N. Front St., Philadelphia, PA 19140. www.pasola.org

Aug. 6, 1400Z – 2100Z, W8WR, Greenville, MI. Larry Alman. **50th Anniversary Flat River Historical Society and Museum**. 7.238 14.238. QSL. Larry Alman, P.O. Box 312, Greenville, MI 48838. larry4lions@gmail.com

Aug. 6, 1500Z – 2000Z, W0R, Red Wing, MN. Hiawatha Valley Amateur Radio Club. **River City Days**. 7.200 14.250 14.7300. Certificate. Bill Eichenlaub, 1966 Launa Ave., Red Wing, MN 55066. www.facebook.com/hvaradioclub

Aug. 11 – Aug. 14, 0000Z – 2359Z, WW2FLY, Attica, NY. WWII Flying Fortress Amateur Radio Club. **WW2FLY Honors the B-17 Royal Flush**. 1.900 3.850 7.180 14.250. Certificate. Nathan Fix, 3339 Stroh Rd., Attica, NY 14011. www.qrz.com/db/ww2fly

Aug. 11 – Aug. 15, 0000Z – 2359Z, W2T, Narrowsburg, NY. Ten Mile River Scout Museum Amateur Radio Club. **Ten Mile River Scout Camps 95th Anniversary**. 3.995 7.295 14.295. QSL. James Gallo, 149 Marine Ave. #6F, Brooklyn, NY 11209. www.qrz.com/db/w2tmr

Aug. 12 – Aug. 14, 1400Z – 2359Z, W9OG/75, Evansville, IN. Tri-State Amateur Radio Society. **75th Anniversary**. 7.045 7.262 14.250 FT8; 40 and 20 meters. QSL. Dennis Martin, 5577 Victoria Ct., Newburgh, IN 47630. www.w9og.net

Aug. 14, 1700Z – 2000Z, K9FEZ, Addison, IL. Medinah Shrine Amateur Radio Unit. **Medinah on the Air**. 14.250. QSL. John Franta, KA9MJJE, MSARU, 550 Shriners Dr., Addison, IL 60101.

Aug. 19 – Aug. 28, 1600Z – 0059Z daily, NN1MF, Marshfield, MA. Whitman Amateur Radio Club. **154th Annual Marshfield Fair**. 3.860 7.260 14.260 18.160; EchoLink WA1NPO-R IRLP:8691

Certificate. Whitman ARC, P.O. Box 48, Whitman, MA 02382. www.wa1npo.org

Aug. 20 – Aug. 21, 0001Z – 2359Z, W5BMC, Berwick, LA. Bayouland Emergency Amateur Radio Service. **ILLW Weekend**. 7.272 14.272. QSL. Deborah Price, N5FMI, 708 Front St., Morgan City, LA 70380. *Operating from the Southwest Reef Lighthouse.* www.qrz.com/db/w5bmc

Aug. 26 – Sep. 5, 0500Z – 0700Z, K3A/K3R/K3S, Ames, IA. **Amateur Radio Software Award**. 3.950 7.078 7.185 14.250. QSL. Amateur Radio Software Awards, Special Event Station, P.O. Box 126, Ames, IA 50010-0126. <https://arsaward.com/special-event.html>

Aug. 27 – Sep. 5, 0000Z – 2359Z, W3B, Hermitage, 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, 1300Z – 2100Z, N2MO, Spring Lake, NJ. Ocean Monmouth Amateur Radio Club, Lakewood Airport (N12), and the MAFC Flying Club. **Flying High with Amateur Radio**. 7.055 7.215 14.055 14.255 28.055 28.400; local 2-meter repeater 145.110 – 600 PL 127.3. QSL. OMARC (at firehouse), 700 Sixth Ave., Spring Lake, NJ 07762. *Open house at Lakewood, NJ airport (N12) exhibiting aviation & equipment.* joekru1@hotmail.com or www.n2mo.org

Aug. 29 – Aug. 30, 0000Z – 0000Z, W5GAD, Metairie, LA. Jefferson Amateur Radio Club. **Hurricanes Katrina and Ida Commemoration**. 7.035 7.235 14.035 14.285; SSB, CW, and FT8 on various HF bands; D-STAR on REF048C. QSL. Jefferson Amateur Radio Club, P.O. Box 73665, Metairie, LA 70033. *Not all bands and modes will be operated simultaneously.* www.w5gad.org

Certificates and QSL cards: To obtain a certificate from any of the special-event stations offering them, send your QSO information along with a 9 x 12-inch self-addressed, stamped envelope (3 units of postage) to the address listed in the announcement. To receive a special event QSL card (when offered), be sure to include a self-addressed, stamped business envelope along with your QSL card and QSO information. *Note: Some clubs may ask for a nominal fee to cover the cost of the certificate or QSL. Request will be made on air during the event or on the club's website.

Special Events Announcements: For items to be listed in this column, use the ARRL Special Events Listing Form at www.arrl.org/special-events-application, or email information to events@arrl.org.

Submissions must be received by ARRL HQ no later than the 1st of the second month preceding the publication date; a special event listing for **November QST** would have to be received by **September 1**. In addition to being listed in QST, your event will be listed on the ARRL Web Special Event page. **Note:** All received events are acknowledged. If you do not receive an acknowledgment within a few days, please contact us. ARRL reserves the right to exclude events of a commercial or political nature.

You can view all received Special Events at www.arrl.org/special-event-stations.

Contest Corral

Contest Corral

August 2022

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 Date-Time	Finish Date-Time	Bands	Contest Name	Mode	Exchange	Sponsor's Website
2 0100	2 0159	1.8-28.50	Worldwide Sideband Activity Contest	Ph	RS, age group (OM, YL, or Youth)	www.sac.com/rules.html
2 0100	2 0300	9.5-28	ARS Spartan Sprint	CW	RST, SPC, Power	arsqr.blogspot.com
3 0230	3 0300	1.8-14.21	Phone Weekly Test	Ph	NA: Name, SPC; non-NA: Name	www.perluma.com/Phone_Fray_Contest_Rules.pdf
3 1700	3 2000	144	VHF-UHF FT8 Activity Contest	FT8	4-char grid square	www.ft8activity.eu
4 0000	5 0300	7	Walk for the Bacon QRP Contest	CW	Maximum 13 WPM, RST, SPC, name	qrptest.com/pigwalk40
4 1900	4 2100	1.8-28.50	SKCC Sprint Europe	CW	RST, SPC, name, (SKCC No./none)	www.skccgroup.com
5 0100	5 0230	14	QRP Fox Hunt	CW	RST, SPC, name, power	www.qrpfloxhunt.org
6 0000	7 2359	3.5-28	Batavia FT8 Contest	FT8	4-char grid square	batavia-ft8.com
6 0001	7 2359	28	10-10 International Summer Contest, SSB	Ph	Name, mbr or "0," SPC	www.ten-ten.org
6 1200	6 2359	1.6-28	European HF Championship	CW Ph	RS(T), 2-digit year first licensed	euhf.s5cc.eu/euhf_rules
6 1800	7 0559	1.8-28	North American QSO Party, CW	CW	Name, state/DC/province/country	www.ncjweb.com
6 1800	7 1800	222 and up	ARRL 222 MHz and Up Distance Contest	CW Ph Dig	6-char grid square	www.arrl.org/222-mhz-and-up-distance-contest
7 1400	7 1700	3.5-14	SARL HF Phone Contest	Ph	RS, serial	www.sarl.org.za
9 0100	9 0159	1.8-28.50	Worldwide Sideband Activity Contest	Ph	RS, age group (OM, YL, or Youth)	www.sac.com/rules.html
10 0030	10 0230	3.5-14	NAQCC CW Sprint	CW	RST, SPC, mbr or power	naqcc.info
10 0230	10 0300	1.8-14.21	Phone Weekly Test	Ph	NA: Name, SPC; non-NA: Name	www.perluma.com/Phone_Fray_Contest_Rules.pdf
10 1700	10 2000	432	VHF-UHF FT8 Activity Contest	FT8	4-char grid square	www.ft8activity.eu
12 0100	12 0230	14	QRP Fox Hunt	CW	RST, SPC, name, power	www.qrpfloxhunt.org
12 1500	14 1459	144	MMMonVHF/DUBUS 144-MHz Meteorscatter Sprint Contest	CW Ph Dig	Signal report	www.mmmhvht.de/ctestinfo.php
13 0000	14 2359	3.5-28	WAE DX Contest, CW	CW	RST, serial	www.darc.de
13 1200	14 2359	1.8-28.50	SKCC Weekend Sprintathon	CW	RST, SPC, name, mbr or "none"	www.skccgroup.com
13 1400	13 2200	3.5-28	Kentucky State Parks on the Air	CW Ph Dig	KY park abbreviation or SPC	k4msu.com/kypta
13 1400	14 0400	1.8-	Maryland-DC QSO Party	CW Ph Dig	Entry class, county or SPC	w3vpr.org/mdcqsop
13 2300	14 0300	50	50-MHz Fall Sprint	CW Ph Dig	4-char grid square	svhs.org
15 0000	15 0200	1.8-28	4 States QRP Group Second Sunday Sprint	CW Ph	RS(T), SPC, mbr or power	www.4sqrp.com
16 0100	16 0159	1.8-28.50	Worldwide Sideband Activity Contest	Ph	RS, age group (OM, YL, or Youth)	www.sac.com/rules.html
17 0230	17 0300	1.8-14.21	Phone Weekly Test	Ph	NA: Name, SPC; non-NA: Name	www.perluma.com/Phone_Fray_Contest_Rules.pdf
17 1700	17 2000	1.2G	VHF-UHF FT8 Activity Contest	FT8	4-char grid square	www.ft8activity.eu
18 0000	19 0300	14	Walk for the Bacon UHF Contest	CW	Maximum 13 WPM, HS 1, SPC, name	qrptest.com/pigwalk20
19 0100	19 0230	14	QRP Fox Hunt	CW	RST, SPC, name, power	www.qrpfloxhunt.org
20 0000	21 1600	3.5-28	SARTG WW RTTY Contest	Dig	RST, serial	www.sartg.com
20 0600	21 2359	10 GHz to light	ARRL 10 GHz and Up Contest	CW Ph Dig	6-char grid square	www.arrl.org/10-ghz-up
20 1600	20 1759	1.8-28.50	Feld Hell Sprint	Dig	(see rules)	sites.google.com/site/feldhellclub
20 1800	21 0559	1.8-28	North American QSO Party, SSB	Ph	Name, state/DC/province/country	www.ncjweb.com
20 1800	21 1700	3.5-14	SARL HF Digital Contest	Dig	RST, serial	www.sarl.org.za
21 1800	21 2359	3.5-28	ARRL Hooke Roundup, RTTY	Dig	Name, 2-digit year first licensed, SPC or XE province	www.arrl.org/hooke-roundup
21 2300	22 0100	1.8-28	Run for the Bacon QRP Contest	CW	RST, SPC, (mbr/power)	qrptest.com/pigrun
23 0100	23 0159	1.8-28.50	Worldwide Sideband Activity Contest	Ph	RS, age group (OM, YL, or Youth)	www.sac.com/rules.html
24 0000	24 0200	1.8-28.50	SKCC Sprint	CW	RST, SPC, name, mbr or "none"	www.skccgroup.com
24 0230	24 0300	1.8-14.21	Phone Weekly Test	Ph	NA: Name, SPC; non-NA: Name	www.perluma.com/Phone_Fray_Contest_Rules.pdf
26 0100	26 0230	14	QRP Fox Hunt	CW	RST, SPC, name, power	www.qrpfloxhunt.org
26 2200	28 2359	1.8-28	RTTYops WW DX RTTY Contest	Dig	RST, 4-digit year license first issued	illyops.com
27 0000	28 2359	2.3 GHz and Up	ARRL EME Contest	CW Ph Dig	Signal report	www.arrl.org/eme-contest
27 0400	29 0400	1.8-28	Hawaii QSO Party	CW Ph Dig	RS(T) HI district or SPC	www.hawaiiqsoparty.org
27 1200	28 0300	1.8-28.50	WAVE Islands QSO Party	CW Ph Dig	RS(T), US/CI/SA Island Designation or SPC	usislands.org/qso-party-rules
27 1200	28 1200	1.8-28	YO DX HF Contest	CW Ph	YO: RS(T), county; non-YO: RS(T), serial	www.yodx.ro/en
27 1200	28 1200	1.8-28	World Wide Digi DX Contest	FT4/8	4-char grid square	www.digi.com
27 1400	20 2000	3.5-20.50	Kansas QSO Party	CW Ph Dig	RS(T), KS county or SPC	ksqsoparty.org
27 1600	28 0400	1.8-28	Ohio QSO Party	CW Ph	RS(T), OH county or SPC	www.ohqp.org
28 1400	28 1700	3.5-14	SARL HF CW Contest	CW	RST, serial	www.sarl.org.za
30 0100	30 0159	1.8-28.50	Worldwide Sideband Activity Contest	Ph	RS, age group (OM, YL, or Youth)	www.sac.com/rules.html
31 0230	31 0300	1.8-14.21	Phone Weekly Test	Ph	NA: Name, SPC; non-NA: Name	www.perluma.com/Phone_Fray_Contest_Rules.pdf

There are a number of weekly contests not included in the table above. For more info, visit www.qrpfloxhunt.org, www.nccsprint.com, and www.cwops.org. All dates and times 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 contest. 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

La Mesa CA 91942

08/27/2022

Start/End Dates: 08/27/2022 - 08/27/2022

Times: 8:30 a.m. to 7 p.m.

of Sessions: 1

Class level: Technician

Morse code offered: No

Pre register required: Yes

Fee: 0

Pre Study required: Yes

Class Type: Weekend/One Day

Exam offered: Yes

Sponsoring Club/Organization: K6RJF

Instructor: K6RJF

Contact: Robert Freeburn K6RJF

Phone: (858) 888-0076

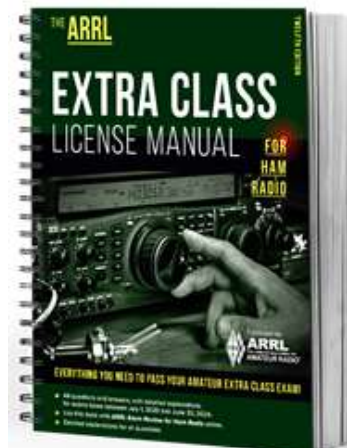
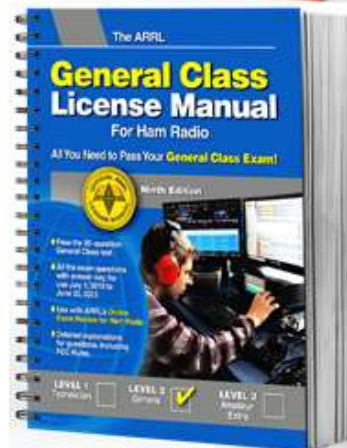
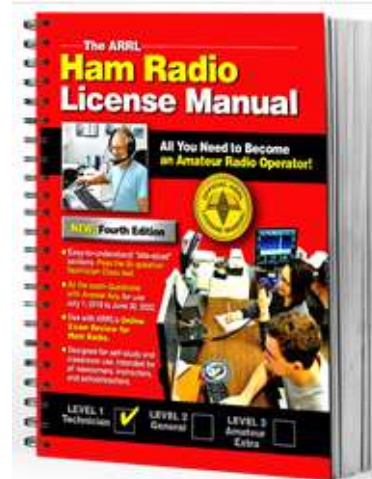
Email: k6rjf.rob@gmail.com

Location: La Mesa Tech Class

7602 University Ave

La Mesa , CA 91942

Additional Information: For more information, or to start the registration process, send an email to K6RJF@arrl.net.



Upcoming FCC Exam Test

Van Nuys CA 91405-4542

08/06/2022

Sponsor: ARES LAX

Date: Aug 06 2022

Time: 10:30 AM (Walk-ins allowed)

Contact: James W. Laage

(818) 368-8710

Email: cllaage@verizon.net

VEC: [ARRL/VEC](#)

Location: Valley Presbyterian Hospital
(Health Education Center)

15107 Vanowen Street

Van Nuys CA 91405-4542



Thousand Oaks CA 91360-6861

08/14/2022

Sponsor: Conejo Valley ARC

Date: Aug 14 2022

Time: 8:30 AM (No Walk-ins / Register or
Call ahead)

Contact: Andrew G. Ludlum

(818) 370-3402

Email: K6AGL@cvarc.org

VEC: [ARRL/VEC](#)

Location: East County Sheriff's Station,
Community Room

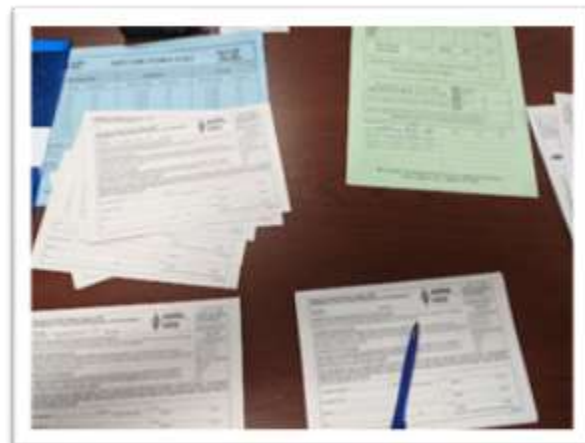
2101 E Olsen Rd

Proof of vaccination required.

Space is limited. Pre-registration required.

Thousand Oaks CA 91360-6861

Website: <http://www.cvarc.org/upcoming-ve-sessions/>



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 started to accept the \$35 fee on April 19, 2022, 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.

Convention and Hamfest Calendar

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

Convention and Hamfest 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
Ti = Talk-in frequency
Adm = Admission

Iowa (Davenport) — Aug. 13 **DFHT**

8 AM. *Spr*: Davenport Radio Amateur Club. Iowa Army National Guard. 5300 West Kimberly Rd. *Ti*: 146.88 (77 Hz). *Adm*: \$8 Advance, \$10 door. www.arcsupport.com/drac

Kentucky (Shepherdsville) — Sept. 10 **DFHQRSTV**

8 AM – 2 PM. *Spr*: Greater Louisville Hamfest Association. Paroquet Springs Conference Centre, 395 Paroquet Springs Dr. *Ti*: 146.70 (79.7 Hz). *Adm*: \$7 Advance, \$8 door. www.louisvillehamfest.com

Kentucky (Whitesburg) — Aug. 13 **FHRTV**

8 AM – 1 PM. *Spr*: Letcher County ARC. The Mountain Shrine Club, 95 Maryland Dr. *Ti*: 145.350 (186.2 Hz). *Adm*: \$5. www.facebook.com/LetcherCARC

Maine (Windsor) — Aug. 20 **FHRTV**

8 AM – noon. *Spr*: Augusta ARA. Windsor Fairgrounds, 82 Ridge Rd. *Ti*: 146.670 (100 Hz). *Adm*: \$10. Email: k1nit@arrl.org

Massachusetts (Adams) — Aug. 21 **DFHRTV**

7 AM – noon. *Spr*: Northern Berkshire ARC. Adams Agricultural Fairgrounds, 371 Old Columbia St. *Ti*: 146.91 (162.2 Hz). *Adm*: \$5. www.nobarc.org

ARRL NEW ENGLAND AND HUDSON DIVISION CONVENTION

August 26 – 28, Marlboro, Massachusetts

DFHQSTV

All day. *Spr*: FEMARA. Best Western Royal Plaza Hotel and Trade Center, 181 Boston Post Rd. *Ti*: 147.27 (146.2 Hz), 223.94 (103.5 Hz), 449.925 (88.5 Hz). *Adm*: \$18. www.hamxposition.org

Michigan (Okemos) — Sept. 10 **DHRSV**

10 AM – 12:30 PM. *Spr*: Central Michigan ARC. Okemos Convention Center, 2187 University Park. *Ti*: 145.390 (100 Hz). *Adm*: \$5. Email: kd8yde@inbox.com

Michigan (Shelby Township) — Aug. 20 **DF**

8 AM – noon. *Spr*: GM ARC. Packard Proving Grounds, 49965 Van Dyke Ave. *Ti*: 443.075 (123 Hz). *Adm*: \$5 Per carload. www.gmarc.org

Michigan (Wyoming) — Sept. 10 **DFHQRSTV**

8 AM – 1 PM. *Spr*: Grand Rapids ARA. The Home School Building, 5625 Burlingame, SW. *Ti*: 147.26 (94.8 Hz). *Adm*: \$8. www.w8dc.org/hamfest/2022GRAHamFestFlyer.pdf

Minnesota (Brainerd) — Aug. 20 **FHT**

9 AM – 1 PM. *Spr*: Brainerd Area ARC. Crow Wing County Fairgrounds, 2000 13th St. SE. *Ti*: 147.225 (no tone). *Adm*: Free. www.brainerdham.org

Minnesota (Brewster) — Aug. 20 **FHRSV**

9 AM – 1 PM. *Spr*: Northern Plains Regional Radio Council. Brewster American Legion Post, 825 3rd Ave. *Ti*: 146.67 (141.3 Hz). *Adm*: \$5. www.facebook.com/groups/NPRRC

Missouri (O'Fallon) — Aug. 14 **DFHQRSTV**

7 AM – noon. *Spr*: St. Charles ARC. O'Fallon Elks Lodge, 1163 Tom Ginnever Ave. *Ti*: 146.670. *Adm*: \$5. www.wb0hsi.org

New Jersey (Ringwood) — Aug. 20 **DFHRT**

8 AM. *Spr*: Ramapo Mountain ARC. Christ the King Lutheran Church, 50 Erskine Rd. *Ti*: 146.49 (107.2 Hz). *Adm*: \$5. www.qsl.net/rmarc

Alabama (Attalla) — Sept. 10 **DFHRTV**

9 AM – 1 PM. *Spr*: Gadsden ARC. Etowah County Fairgrounds, 31 Griffin St. *Ti*: 146.670 (100 Hz). *Adm*: Free. Email: mickup@gmail.com

ARRL SOUTHEASTERN DIVISION CONVENTION

August 20 – 21, Huntsville, Alabama

DFHQSV

Sat. 9 AM – 4:30 PM, Sun. 9 AM – 3 PM. *Spr*: Huntsville Hamfest, Inc. Von Braun Center, 700 Monroe St. SW. *Ti*: 146.94 (100 Hz). *Adm*: \$12; Children aged 12 and under free. www.hamfest.org

Colorado (Brighton) — Aug. 28 **DHRTV**

9 AM. *Spr*: Denver Radio Club. Adams Co. Fairgrounds, 9755 Henderson Rd. *Ti*: 145.490 (100 Hz) and 448.625 (100 Hz). *Adm*: \$6. www.w0tx.org

Florida (Fort Pierce) — Aug. 9 **DFHQRSTV**

8 AM – noon. *Spr*: Fort Pierce ARC. Indian River State College, 3209 Virginia Ave. *Ti*: 147.345 (107.2 Hz), Echolink W4AKH-R. *Adm*: \$7. www.fparc.org

Florida (Tampa) — Aug. 20 **FHQRSTV**

8 AM – 1 PM. *Spr*: Tampa ARC. Tampa ARC, 7801 N. 22nd St. *Ti*: 147.105 (146.2 Hz). *Adm*: \$5. www.hamclub.org

Georgia (Dalton) — Sept. 10 **DFHT**

6 AM – noon. *Spr*: Dalton ARC. Praters Mill, 5845 GA-2. *Ti*: 145.230 (no tone). *Adm*: Free. www.facebook.com/groups/499173303579789/

Illinois (Carlville) — Aug. 13 **DFHQRSTV**

7 AM – noon. *Spr*: Macoupin Co. ARC, Montgomery Co. ARC, Okaw Valley ARC, Sangamon Valley Radio Club. Macoupin County Fairgrounds, 21149 State Route 4. *Ti*: 444.250 (103.5 Hz). *Adm*: \$5. www.wcillhamfest.com

SOCIETY OF MIDWEST CONTESTERS FEST

August 27, Naperville, Illinois

HRS

8 AM – 5 PM. *Spr*: Society of Midwest Contesters, Chicago Marriott of Naperville, 1801 N. Naperville Blvd. *Ti*: None. *Adm*: \$50. www.w9smc.com/smc-fest

Indiana (Auburn) — Aug. 13 **DFHRT**

9 AM – 2 PM. *Spr*: Northeastern Indiana ARA. Auburn Cord Duesenberg Museum, 1600 Wayne St. *Ti*: 147.015 (141.3 Hz). *Adm*: Free. www.w9ou.org

Indiana (Avon) — Aug. 13 **HRT**

9 AM. *Spr*: Ham Emergency Radio Operations. Avon United Methodist Church, 6550 E. Hwy 36. *Ti*: 147.015 (88.5 Hz). *Adm*: \$5. Email: kc9sqd425@gmail.com

(Continued on next page)

Convention and Hamfest Calendar (continued)

New Mexico (Alamogordo) — Sept. 3 **DFHRSV**

7 AM – 3 PM. *Spr:* Alamogordo ARC. Otero Co. Fairgrounds, 401 Fairgrounds Rd. *Ti:* 146.800. *Adm:* Free. www.qsl.net/k5lrw/hamfest.htm

New York (Avoca) — Aug. 20 **DFHRTV**

7:30 AM. *Spr:* Keuka Lake ARA. Howard Community Center, 7481 Hopkins Rd. *Ti:* 145.190 (110.9 Hz). *Adm:* \$5. www.klara.us

New York (East Greenbush) — Aug. 27 **DFHRT**

8 AM – 1 PM. *Spr:* East Greenbush ARA, East Greenbush Town Park, Town Park Rd. *Ti:* 147.270 (94.8 Hz). *Adm:* \$6. www.egara.club

New York (Lockport) — Sept. 10 **DFHRT**

7 AM. *Spr:* Lancaster ARC. Transit Drive In. 6655 S. Transit Rd. *Ti:* 147.255 (107.2 Hz). *Adm:* \$8. www.w2so.org

New York (Macedon) — Aug. 27 **DFHRTV**

7 AM – 1 PM. *Spr:* RocCityNet. Log Cabin Restaurant, 2445 W. Walworth Rd. *Ti:* 145.110 (110.9 Hz). *Adm:* Free. www.facebook.com/groups/roccitynet

New York (Speculator) — Aug. 13 **FHQ T**

8 AM – 12:30 PM. *Spr:* Northern New York ARA. Speculator Pavilion and Ball Field, New York Rte. 30. *Ti:* 147.165 (no tone). *Adm:* TBA. Email: kd2ipc@outlook.com

North Carolina (Fayetteville) — Aug. 13 **DFHRTV**

8 AM – noon. *Spr:* CapeFear ARS. Cumberland County Shrine Club, 7040 Ramsey St. *Ti:* 146.910 (100 Hz). *Adm:* Free. www.cfarsnc.org

ARRL NORTH CAROLINA SECTION CONVENTION

September 2 – 4, Shelby, North Carolina

DFHQRSTV

7 AM – 5 PM. *Spr:* Shelby ARC. Cleveland Co. Fairground, 1751 E. Marion St. *Ti:* 146.88 (no tone). *Adm:* \$8 Advance, \$10 door. www.shelbyhamfest.com

Ohio (Owensville) — Aug. 13 **DFHRTV**

8 AM – 2 PM. *Spr:* Milford ARC. Clermont County Fairgrounds, 1000 Locust St. *Ti:* 147.345 (123.0 Hz). *Adm:* \$10. www.cincinnatihamfest.org

Pennsylvania (New Kensington) — Aug. 28 **FRST**

8 AM. *Spr:* Skyview Radio Society. Skyview Radio Society clubhouse, 2335 Turkey Ridge Rd. *Ti:* 146.640 (131.8 Hz). *Adm:* \$5. www.skyviewradio.net

Pennsylvania (Phoenixville) — Aug. 14 **DFHQRTV**

8 AM. *Spr:* Mid-Atlantic ARC. Kimberton Fire Company Fairgrounds, 762 Pike Springs Rd. *Ti:* 145.130 (131.8 Hz). *Adm:* \$10. www.marco-radio.org/hamfest2.htm

Pennsylvania (Uniontown) — Aug. 13 **DFHRSV**

8 AM. *Spr:* Uniontown ARC. 433 Old Pittsburgh Rd. *Ti:* 147.045 (131.8 Hz). *Adm:* Free. Email: wa3uvv@arrl.net

Tennessee (Lebanon) — Aug. 27 **DFHRTV**

8 AM – 3 PM. *Spr:* Short Mountain Repeater Club. Cedars of Lebanon State Park, 328 Cedar Forest Rd. *Ti:* 146.91. *Adm:* Free. www.smclub.com

ARRL VIRGINIA STATE CONVENTION

August 13, Portsmouth, Virginia

DHRT

9 AM – 3 PM. *Spr:* TRCI. Ambassador Club of Portsmouth, 364 Peninsula Ave. *Ti:* 146.850 (100.0 Hz). *Adm:* \$10. www.virginiabeachhamfest.com

West Virginia (Huntington) — Aug. 13 **DFHRSV**

8:30 AM – 1:30 PM. *Spr:* Tri-State ARA. New Baptist Church, 610 28th St. *Ti:* 146.76 (131.8 Hz). *Adm:* \$6; Under 18 free. www.qsl.net/w8va

Wisconsin (Baraboo) — Aug. 27 **DFHRSV**

8 AM – noon. *Spr:* Yellow Thunder ARC. Badger Steam and Gas Engine Club Property, E3947 Sand Rd. *Ti:* 147.315 (123.0 Hz). *Adm:* \$5. www.yellowthunder.org

Wisconsin (Cedarburg) — Sept. 10 **FHRT**

6 AM – noon. *Spr:* Ozaukee Radio Club. Firemen's Park, W65N796 Washington Ave. *Ti:* 146.97 (127.3 Hz). *Adm:* \$5. Free under 12 years old. Email: teruhmann@wi.rr.com

Wisconsin (Chippewa Falls) — Aug. 28 **DFHV**

9 AM – 2 PM. *Spr:* Chippewa Valley ARC. Northern Wisconsin State Fairgrounds, 225 Edward St. Exhibit Hall A. *Ti:* 147.975 (110.9 Hz). *Adm:* \$10. www.w9cva.org/hamfest

Wisconsin (Onalaska) — Aug. 20 **FHQRTV**

8 AM – 1 PM. *Spr:* Riverland ARC. Onalaska American Legion, 731 Sand Lake Rd. *Ti:* 146.97 (131.8 Hz). *Adm:* \$5. Email: eistim68@gmail.com

Wisconsin (Racine) — Aug. 13 **FH**

6 AM – 1 PM. *Spr:* W9UDU. Greater Racine Kennel Club, 6320 Six Mile Rd. *Ti:* 147.270 (127.3). *Adm:* Free. www.w9udu.org

To All Event Sponsors

Before making a final decision on a date for your event, you are encouraged to check the Hamfest and Convention Database (www.arrl.org/hamfests-and-conventions-calendar) for events that may already be scheduled in your area on that date. You are also encouraged to register your event with HQ as far in advance as your planning permits. See www.arrl.org/hamfest-convention-application for an online registration form. Dates may be recorded up to 2 years in advance.

Events that are sanctioned by ARRL receive special benefits, including an announcement in these listings and online. Sanctioned conventions are also listed in *The ARRL Letter*. In addition, events receive donated ARRL prize certificates and handouts. Once the form has been submitted, your ARRL Director will decide whether to approve the date and provide ARRL sanction.

The deadline for receipt of items for this column is the **1st of the second month preceding publication date**. For example, your information must arrive at HQ by **September 1** to be listed in the **November** issue. Information in this column is accurate as of our deadline; contact the sponsor or check the sponsor's website for possible late changes, driving directions, and other event details. Please note that postal regulations prohibit mention in QST of games of chance, such as raffles or bingo.

Promoting your event is guaranteed to increase attendance. As an approved event sponsor, you are entitled to special discounted rates on QST display advertising and ARRL web banner advertising. Call ARRL's toll-free number at 1-800-243-7768, or email ads@arrl.org.

ARRL News

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

Jon Jones, NØJK, n0jk@arrl.org

The World Above 50 MHz

Solar Cycle 25 Update: Sporadic E on 6 Meters



Solar Cycle 25 continued to become stronger, with high solar fluxes in May 2022. This increased the ionization of trans-equatorial propagation (TEP) and moved the northern reach of the TEP zone farther north.

Seasonal Sporadic E Began

Sporadic E can set up *links*, which are openings that stations can use to connect with afternoon TEP on 50 MHz.

On May 21, I (NØJK) logged PY2XB, PY2RN, and HK3W. Greg, WQØP (EM19), worked PJ2CF, P41E, HK3W, and PY5KD. Larry, NØLL (EM09), also worked HK, PY, and PJ4MM.

On May 23, Rich, K1HTV (FM18), logged CE4WJK. On May 25, Michael, K7ULS (DN41), worked stations in Brazil and Argentina. Glen, WB6RLC (DM13), reported working eight stations in Argentina on 6 meters. The eastern states fared better, as there were many days with openings to South American stations. May 5 had

one of the best (see Figure 1). Jim, WA3EHD (FN20), reported seeing stations in CE, LU, and PY available on May 28. On May 29, even stations in the Pacific Northwest worked South American stations. Dan, N7DED; Don, N7BT, and Richard, N7RO, all in CN88, worked CE2SV and CE3SX in a flash 15-minute opening.

2-Meter Sporadic E on May 7

On May 7, a strong sporadic-E opening took place all day across North America on 6 meters. That morning, some tropospheric propagation (tropo) was noted on 2 meters by John, KFØM (EM17), to Texas. Silas, K5JRN (EM10), worked W4AS (EL95) on sporadic E on 2 meters at 1601Z, running just 25 W and an indoor mobile whip antenna. John saw the opening on the 2-meter Automatic Packet Reporting System (APRS) map from Florida to Texas at 1620Z. He logged W4AS at 1658Z, and he copied W4AS calling CQ until 1720Z.

It took Jim 18 years to accomplish this distinguished achievement. He amassed all of his grids with a modest station in Wetmore, Kansas. His last contact was made using 100 W and a log-periodic antenna mounted on an 18-foot mast. This station size is within reach of many hams or even rovers.



Figure 2 — Barry Hansen, K7BWH, worked Jim Klingler, AAØMZ, for Jim's last grid (CN93) for the FFMA on May 15, 2022. [Barry Hansen, K7BWH, photo]



Jim, AAØMZ, Achieves FFMA

Jim, AAØMZ (EM29), worked the final grid he needed for the Fred Fish Memorial Award (FFMA) on May 15. Barry, K7BWH, was instrumental in Jim's success.

Figure 1 — This map shows the sporadic E-to-TEP opening on May 5, 2022. [www.dxmaps.com]

Barry made two trips from his home in Seattle, Washington, to remote locations in CN93 in central Oregon, camping on mountaintops (see Figure 2). His first trip in February focused on using meteor scatter to reach Jim at 1,300 miles away, but he was ultimately unsuccessful. His second trip in May went to a different mountaintop, trying MSK144, Q65-30A, Q65-120A, and Q65-120E, all without success. Finally, on May 15, a narrow propagation path opened from CN93 in a straight line to Jim and on to grid EL96 in Florida (see Figure 3).

After two trips, 1,784 miles of driving, and 97.9 gallons of fuel, it was an easy

(Continued on Next Page)

ARRL News (Continued)

In addition to the ARRL DXCC presentation, Steve Romagni, W4DTA/YV5DTA, gave an in-depth report about the 15 Venezuelan island groups in the Islands On The Air (IOTA) program, including number 13 on Club Log's DXCC Most Wanted List — Aves Island (YVØ). Gregg Marco, W6IZT, updated attendees on the Rig In a Box (RIB) DXpedition concept, and Jeff Dorsey, TZ4AM/K1MMB, spoke about his activities in Bamako, Mali.

All of the DX Forum presentations are available on YouTube at www.youtube.com/watch?v=x-RYgcXvhjE.

CQ Hall of Fame Inductees

Each year during Hamvention, CQ magazine announces new inductees to the CQ DX Hall of Fame, the CQ Contest Hall of Fame, and the CQ Amateur Radio Hall of Fame. This year's CQ Contest Hall of Fame inductees were announced at the Contest Dinner. They are Craig Thompson, K9CT, and Dave Pascoe, KM3T.

Usually, CQ announces their inductees to the CQ DX Hall of Fame at the DX Dinner, but the CQ committee of judges determined that "none of the nominees met the high standard required for selection" this year.

Inductees to the CQ Amateur Radio Hall of Fame included Franklin P. Antonio, N6NKF (SK); Wolf Harranth, OE1WHC/OE3WHC (SK); Les Kramer, WA3SGZ; Roy Lewallen, W7EL; Peter Marks, AB3XC; Bob Ringwald, K6YBV (SK), and R. Scott Wright, KØMD.

CQ magazine shared that inductees to the CQ Contest Hall of Fame and DX Hall of Fame are amateur radio operators who "not only excel in personal performance but who also 'give back' to the hobby in outstanding

ways." The CQ Amateur Radio Hall of Fame "honors those individuals, whether licensed hams or not, who have made significant contributions to amateur radio; and those amateurs who have made significant contributions either to amateur radio, to their professional careers, or to some other aspect of life on our planet." Congratulations to all!

DX Dinner Recognitions

At the DX Dinner, hosted by SWODXA, overall attendance was slightly higher than in past years, but it seemed as though there were fewer operators from overseas (DX). SWODXA usually announces a DXpedition of the Year at this dinner, but there haven't been many within the past 12 months. In addition to recognizing exemplary DXpeditions, SWODXA announced in a press release that they also recognize "individuals or groups who have advanced the art of and made a significant impact on DXing." With that, outgoing President Tom Inglin, NR8Z, announced that the 2022 SWODXA DX Achievement Award goes to Dr. Joseph H. Taylor Jr., K1JT, "for creating digital communication modes that have totally revolutionized DXing." Additionally, the dinner's keynote speaker, Dr. R. Scott Wright, KØMD, shared anecdotes about some of his travels.

Pacific Northwest DX Convention

This year's Pacific Northwest DX Convention (PNWDXC) will take place at the Centennial Hotel in Spokane, Washington, on August 5 – 7. This will be the 67th annual PNWDXC, and it is hosted by the Spokane DX Association.

This year's event schedule includes: "The 2022 DXpedition to Raiivavae (Austral Islands) TX5N" with Rob Fantant, N7QT; "DX Spotting: VE7CC —

The Next Generation" with Lee Sawkins, VE7CC; "Most Needed DXCC Locations" with Bernie McClenry, W3UR; "A History of the World Radiosport Team Championship" with Rusty Epps, W6OAT; "The North American Competitor Experience at the European IARU World Radiosport Championship" with Pat Barkey, N9RV; "Distributed Contesting" with Brian Moran, N9ADG, and "Using Node Red for Station Automation in DXing and Contesting" with Kyle Krieg, AAØZ. Additionally, Dr. Ed Schweitzer III, W7KOW, will be the banquet speaker.

For more details about PNWDXC, visit <https://pacificnwdxconvention.com>.

Wrap-Up

That's all for this month. Special thanks to K8CX for helping to make this month's column possible. Don't forget to send any news, tidbits, photos, and club newsletters to your editor at bernie@dailydx.com. Until next month, see you in the pileups! — Bernie, W3UR

Strays

QST Congratulates...

ARRL member and Eventide Cofounder and Chairman Richard Factor, WA2IKL, as well as Eventide Managing Director Tony Agnello, for being honored with the Audio Engineering Society's (AES) highest technical award, the AES Gold Medal Award for 2021. The prestigious award recognizes substantial audio innovation and ongoing outstanding achievement. AES cited Factor's and Agnello's dedication to "making the world sound better — and often weirder — through the continuous development of signal processors that inspire users and delight listeners."

(Continued on next page)

ARRL News (Continued)



The Inverted Hen-Delta 6-Meter Antenna

An updated version of Koji Sugihara's, JJ1UMS, 1982 6-meter "Hentenna," the Hen-Delta improves performance and is easy to build and tune.

John Portune, W6NBC, and Jim Bailey, W6OEK

The Hen-Delta is based on a 1982 "Hentenna" design, which had a rectangular shape that was not optimum. We updated the design with our Hen-Delta antenna.

Antenna Design

The top of the Hen-Delta is wider than the bottom, which pushes the effective center of radiation upward (see Figure 1). This reduces ground loss and ground sensitivity, which improves performance when ground mounted. Maximum radiation moves upward because of the proximity of the out-of-phase and equal-amplitude currents in the Hen-Delta's lower conductors, thus canceling radiation from the vertical antenna section. The electromagnetic (EM) wave from a Hen-Delta, therefore, emanates mainly from the horizontal top section, making it horizontally polarized.

Figure 2 shows the elevation radiation patterns at ground level over average soil and at 10 feet. The azimuth radiation patterns are shown in Figure 3. Radiation is perpendicular to the plane of the antenna. These patterns also reveal the 6 dBi of azimuth gain, even at ground level, which is comparable to a small beam on a modest tower, with the advantage of this antenna being far less visible to the neighbors. Figure 4 shows the approximate 500 kHz 2:1 standing wave ratio (SWR) bandwidth.

Rigid copper water pipe enables the Hen-Delta to free stand in a ground-mount tube with only a PVC pipe support. The ground tube is 3 feet of 2½-inch plastic EMT electrical conduit buried in the soil. You may also wish to employ an under-wheel car mount for portable operation.

(Continued on next page)

ARRL News (Continued)

Construction

Table 1 lists the materials required.

The two side bars consist of 10-foot copper water pipes. Cut a 33-inch piece of water pipe for the horizontal top section, and a 2½-inch piece for the bottom of the Delta. Next, flatten 1½ inches of one end of each of the side pipes, and both ends of the top pipe. Drill ¼-inch holes for ¼-20 x ½-inch stainless-steel bolts. These should be ¾ inch from the ends (see Figure 5). Bolt the side pipes and the top pipe together. Keep the entire assembly flat.

Measure 24 inches from the bottom of both side pipes, and partially flatten them at that point with vise-grip pliers. Make certain that the bends are rotated 90 degrees from the flattened top ends, so the bottom 24-inch sections will be parallel (see Figures 1 and 6). Now solder the bottom elbows and the 2½-inch pipe onto the bottom ends of the side pipes. Finally, drill a ¼-inch hole for a bolt through the center of the short pipe stub at the bottom. This should be perpendicular to the plane of the Delta to attach the antenna to the PVC support assembly (see Figure 1).

Mast and Support Arms

Cut a 1½-inch schedule 40 PVC pipe to a length suitable for your mast or ground mount, and cut two additional 8-inch sections for the cross arms. Cut a lengthwise slot along the arms, which should have dimensions of ¾ inches wide by 2¼ inches long,

Table 1 — Materials List		
Quantity	Equipment	Comments
2	Copper water pipe, ½-inch diameter	10 feet Type M
1	Copper water pipe, ½-inch diameter	33 inches Type M
1	Copper water pipe, ½-inch diameter	2½ inches Type M
2	90-degree copper elbow, ½-inch diameter	
4	All-copper pipe straps	½ inch, two-hole
1	PVC sch 40 pipe	10 feet, 1½ inches
2	PVC sch 40 pipe caps	1½ inches
1	PVC sch 40 slip tee	1½ inches
2	Stainless-steel bolts, nuts, and washers	¼-20 x ½ inch
1	Stainless-steel bolt, nut, and washer	¼-20 x 3 inches
4	Stainless-steel bolts, nuts, and washers	10-24 x ½ inch
1	RG-8X or RG-58 coax pig-tail with connector	10 feet
2	Ring terminals	#10 lug
1	3D-printed balun bobbin	Optional; printer file from jportune@aol.com

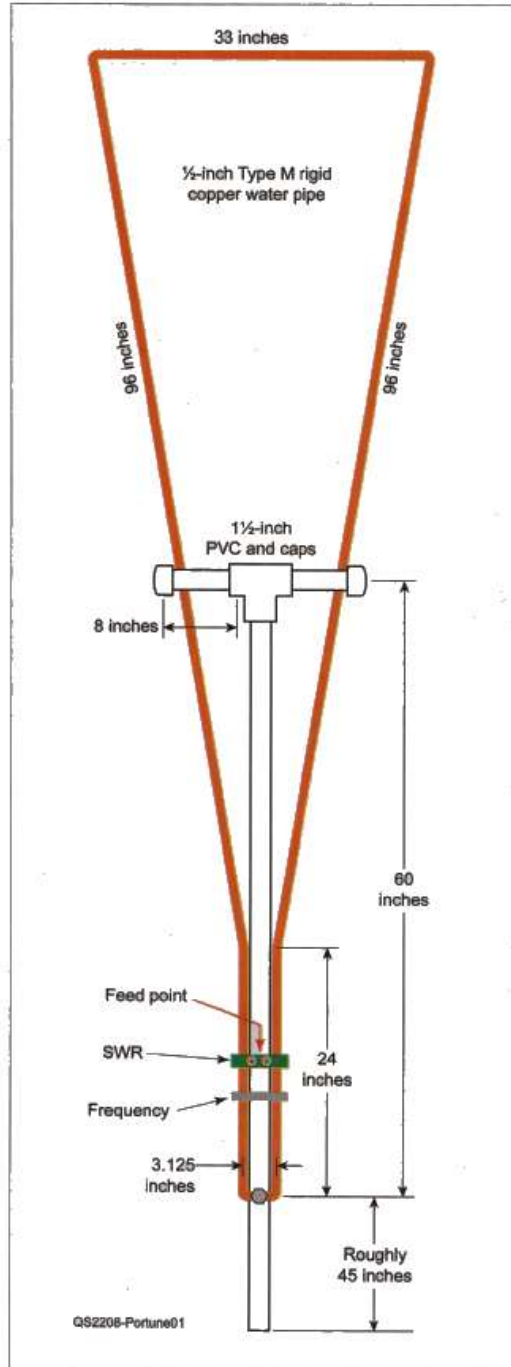


Figure 1 — The Hen-Delta's design and dimensions.

(Continued on next page)

ARRL News (Continued)

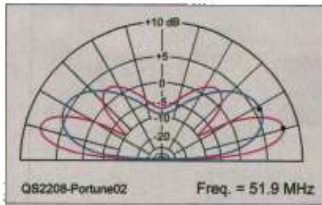


Figure 2 — The elevation radiation patterns with gains in dBi at 1 foot (blue) and at 10 feet (violet).

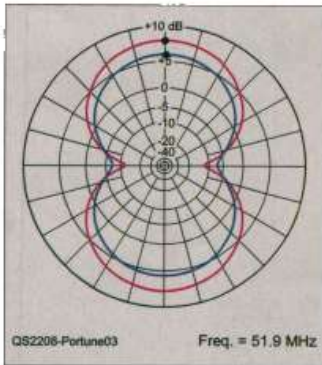


Figure 3 — The azimuth (horizontal) radiation patterns at 1 foot (blue) and 10 feet (violet).

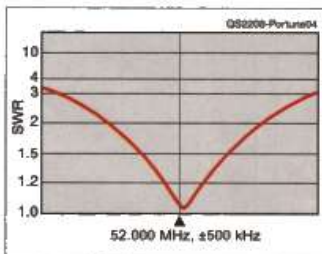


Figure 4 — The standing wave ratio (SWR) curve.

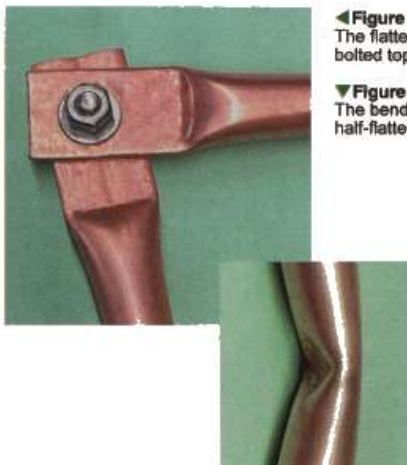


Figure 5 — The flattened and bolted top corners.

Figure 6 — The bend at the half-flattened spot.

through the center of the outer end of each arm. Ensure that the slots point toward the top of the Delta. Cement together the mast, the T coupling, and the arms. Do not cement the end caps at this time.

Insert the copper assembly into the slots in the cross arms, which should be about 60 inches from the bottom, ensuring that the side pipes do not bow in or out. Cement on the 1½-inch pipe caps to secure the antenna in this position in the support assembly. Finally, drill a ¼-inch hole through the PVC mast at the bottom to align with the hole in the short copper stub. Secure with the ¼-20 x 3-inch, stainless-steel bolt, washer, and nut.

Adjustment Bar Details

The Hen-Delta is easily matched and tuned via movable adjustment bars — one for frequency and one for SWR. The bars slide along the parallel pipes for adjustment, as seen in Figures 1 and 7. The adjustment bars connect to the parallel side pipes with ½-inch copper water pipe straps, which should be screwed to the adjustment bars with 10-24 stainless-steel screws and nuts (see Figure 8).

As the SWR bar contains the feed point, it must be made of an insulating material. The two screws are the feed-point terminals. The frequency bar may be made with flattened ¼-inch soft metal tubing or PC board with the copper clad intact. Drill holes for 10-24 screws to attach the pipe straps to the bars.



Figure 7 — The adjustment area location and details.

(Continued on next page)

ARRL News (Continued)

Feed Line and Balun

Prepare a 10-foot coax pigtail of RG-8X or RG-58 by de-braiding roughly 3 inches at one end to form two separate wires. Weatherproof the wires with heat-shrink tubing, and add ring terminals for the #10 feed-point screws. Provide a 1:1 choke balun near the antenna using several Mix 61 ferrite sleeves, toroids, or clamp-on chokes. Alternately, six turns of the coax may be wrapped around the PVC mast just below the antenna and secured by holes in the mast or zip ties. The coax should loop out from the antenna with enough extra length to allow the feed-point adjustment bar to be moved to the top of the parallel pipes. For long coax runs, transition to RG-213 or LMR-400 at the end of the pigtail.

Tuning and Matching

With the antenna in a ground-mount tube, or temporarily mounted on a non-metallic support away from other objects, adjust the SWR and then the frequency. Move both bars as a pair to set the frequency. The tuning range is roughly 45 – 57 MHz.

With its excellent ground-mounted performance, horizontal polarization, low-angle radiation, azimuth gain, and neighbor/HOA-friendly appearance, the Hen-Delta is a good choice for the 6-meter band. For added neighborhood appeal, consider hanging a flag or decorative sign from the top bar. If you build this antenna, the authors would enjoy feedback, especially with pictures.

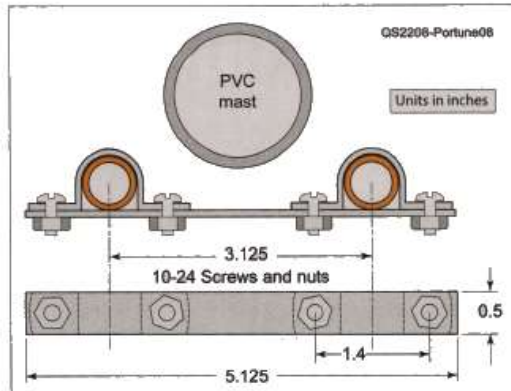


Figure 8 — The adjustment bar dimensions.

John Portune, W6NBC, has been licensed since 1965. He received a BS in Physics from Oregon State University in 1960. He is retired from KNBC Channel 4 in Burbank, California, where he was a broadcast television engineer and instructor. He is a member of the Satellite Amateur Radio Club at Vandenberg Space Force Base. John has been published in *QST*, *World Radio*, and *73* magazines. He is active on HF, VHF, and UHF — SSB, AM, CW, FM, and digital modes — and he is an AMSAT satellite user. He is a frequent speaker at ham clubs (see www.w6nbc.com for topics and to sign up). John can be reached at jportune@aol.com.

Jim Bailey, W6OEK, has been a licensed amateur radio operator for over 64 years. He retired from a local electronics company in Santa Maria, California, where he was an engineer and maintenance supervisor. He is also a member of the Satellite Amateur Radio Club at Vandenberg Space Force Base. You can reach Jim at w6oek@comcast.net.

For updates to this article, see the *QST* Feedback page at www.arrl.org/feedback.



Feedback

In the June 2022 issue of *QST*, there was an error in the "Up Front" column regarding Olivia O'Brien, KC3SXB, making her first contact. O'Brien had her first contact in the digital mode Olivia, which can be seen on the *fldigi* screen with Olivia data being received. Additionally, O'Brien made her first contact under her own call sign from the Case Amateur Radio Club station, W8EDU, in Cleveland, Ohio. While acting as control operator of the club station, O'Brien made her second contact with Laura Gooch, N8NFE, who was at her home station in Cleveland Heights. *QST* regrets this error.

Don't Envy the Book Author; Become One!

ARRL is the largest amateur radio book publisher in the world, and we're looking for new authors.

ARRL provides:

- Technical vetting by experienced engineers
- Professional editing
- Technical illustration
- Book design
- Marketing and publicity



Email your proposal to qst@arrl.org (no telephone calls, please). Send a short outline of your idea, including a list of chapter topics, and a sample of your writing.

(Continued on next page)

ARRL News (Continued)

COMPACTenna 2M/440+

Reviewed by Michael Fluegemann, KE8AQW
ke8aqw@arri.net

For anyone looking for a low-profile mobile or station antenna for 2 meters and 70 centimeters, the 2M/440+ made by COMPACTenna may be right for you. I had the pleasure of using the 2M/440+ antenna for more than several weeks and found it to work well. At only 9 inches tall, it is ideal for cars that park in garages with low clearances. COMPACTenna also sells the CompacCounterpoise, which turns this antenna into a great base-station antenna with the benefit of being small, perfect for those who need to conceal their antennas from view.

Hardware Details

The 2M/440+ antenna looks like a black cylindrical tube that is about 9 inches tall and 1.5 inches wide. It has an NMO connector with a leaf spring as the center connector. The manufacturer specifications say the antenna can handle 100 W on the 2-meter band and 75 W on the 70-centimeter band, with an SWR of less than 2:1 on both bands (see Table 3). My SWR tests show that the antenna performed as specified or better. With the mag mount on my vehicle, I got an average of 1.8:1, and the station installation with the ground plane was even better, with an average of 1.5:1. Unlike other antennas that are shortened with a loading coil, this antenna has a patented design "with a special design construct of spiraled and cylindrical metal sheeting." Even though this antenna seems small, it is advertised with 5 dB-MEG gain. The geometry of the antenna provides the matching network, and because the antenna has a strong magnetic near field, local noise is reduced.

I used this antenna with a Larsen NMO magnetic mount on my Ford Focus and with the CompacCounterpoise at my house. The counterpoise kit came with a bracket that has an NMO connector for the antenna and an SO-239 connector for the coax. There are four ground-plane elements that are 18 inches long. After

Bottom Line

At only 9 inches tall, the COMPACTenna is an ideal low-profile, dual-band antenna for cars that need low clearances or for a stealth station installation without compromising on performance.



attaching them with the provided screws, washers, and nuts, I was able to attach the mount to my deck with the provided hose clamps (see Figure 8). The kit also came with lube for the threads, as well as a rubber gasket.

Road Trip

Shortly after receiving the 2M/440+ antenna, I took a road trip from Detroit, Michigan to Huntsville, Alabama

**Table 3 — COMPACTenna 2M/440+
Manufacturer's Specifications**

Frequency Coverage: 144 – 148 MHz, 430 – 450 MHz
(V)SWR: Nominal $\leq 2:1$, 144 – 148 MHz; 430 – 450 MHz
Maximum Power Rating: 100 W for the 2-meter band; 75 W for the 70-centimeter band
Connector: NMO
Gain: Nominal 5(+) dB-MEG
Antenna Type: Unique Electric/Magnetic Field Diversity Science & Technology Patented Design (Patent No. US 9,407,001)
Maximum Duty Cycle at Maximum Power Rating: 1 minute in any 2-minute period
Dimension: Length, 9 inches x 1.5 inches diameter

See MEG
article

(Continued on next page)

ARRL News (Continued)



Figure 8 — The COMPACTenna 2M/440+ balcony station installation with CompacCounterpoise ground plane.

to visit my friends for their wedding. This was the perfect opportunity to test the antenna. I connected it to my Kenwood TM-V7A and positioned the antenna on the roof of my Ford Focus in the rear passenger corner (see Figure 9), as the instructions suggested better omnidirectional performance on a corner. Throughout my 10-hour trip, I tried hitting several 2-meter and 70-centimeter repeaters. I found I was able to hit several of them. Specifically, while I was near Nashville, I was able to hit NE4MA at 442.800 MHz with a good signal from 21 miles away. Then on my trip home, I was able to hit WC8OH at 145.110 MHz with a good signal from over 25 miles away, and I could still hear it faintly at 40 miles away.



Figure 9 — The COMPACTenna 2M/440+ vehicle installation with the Larsen NMO magnetic mount.

Satellites

Satellite operation was one of the other use cases suggested in the instructions. While using the radio in my car, I tried a couple of FM satellite passes with the new ISS repeater and SO-50. On both occasions I was able to get into the satellites and make a couple of contacts. This could be a good option for those without a handheld Yagi or those who would prefer a simple setup that does not require moving an antenna.

Base Station

With the antenna mounted on the CompacCounterpoise on my deck and plugged into my Kenwood TM-V7A, I was able to hit several of my local repeaters with ease. I have not had a base-station antenna for VHF/UHF and have relied on a Diamond NR22L dual-band 5/8-wave vehicle-mounted antenna in the past to call into nets on repeaters that were too hard to hit with a handheld. The performance of the COMPACTenna 2M/440+ installed at low height was comparable to the performance of my Diamond antenna mounted on the vehicle.

Final Thoughts

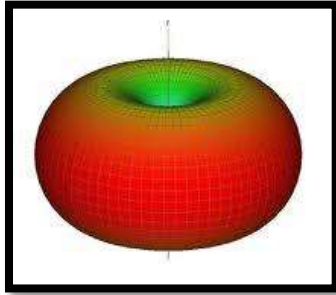
The COMPACTenna 2M/440+ antenna performed well for its small footprint. I highly suggest this antenna for anyone who needs the short form factor but doesn't want to compromise on the performance.

Manufacturer: COMPACTenna, www.compactenna.com. COMPACTenna 2M/440+ Antenna, price: \$109.95. COMPACTenna CompacCounterpoise NMO Mount Base Station Ground Plane, price: \$99.95. Larsen NMOMRPL Mobile Antenna Magnet NMO Mount, price: \$69.99.

(Continued on next page)

Measuring RF Antenna Gain in dB-MEG

(from <http://revolutionwifi.blogspot.com/2011/06/measuring-rf-antenna-gain-in-db-meg.html>)



Typical Dipole Antenna Radiation Pattern

Isn't it fun when you think you know the ins-and-outs of a technology, then run across something that fundamentally has you scratching your head in confusion? You've been working with a technology for quite some time and you think you've seen it all, or at-least heard about it all if you haven't had the need to work with specific pieces.

In Wi-Fi we learn a lot about how decibels measure relative, not absolute, power output in relation to some other reference point. We have **dB_i (isotropic radiator)**, **dB_m (1-milliWatt)**, **dB_d (standard dipole antenna)**, etc. These are known quantities, and most Wi-Fi professionals worth a lick can run circles around antenna azimuth or elevation patterns and specifications using these units of measurement. We get them, we know them and we are "comfortable" with them.

Then something comes along and throws us off our game, and pushes us to question our own basic understanding of the universe of Wi-Fi (*Hey, that's kinda catchy: "universe of Wi-Fi". I might have to start using that phrase*). Such was the case last week for me. It all revolves around the **db-MEG**. "dB-what?" That was my first reaction too!



Vehicle Mounted
Mobile Device

(Continued on Next Page)

Measuring RF Antenna Gain in dB-MEG (Continued)

Let me provide a little bit of background. The retail organization where I work owns and operates dozens of Distribution Centers (warehouses) that accept bulk product, process, and ship it out to hundreds of stores apiece. These warehouses have yard hostlers, essentially trailer cabs that ferry semi-trailers to/from parked positions and dock doors.

These cabs are outfitted with rugged vehicle mounted mobile devices with a cable lead for an external antenna mounted on the roof of the cab. Since the mobile device in question only provides a single external antenna lead, signal reception (or lack thereof) becomes an important consideration given the lack of antenna diversity. Now, these devices have been around for a while and mobile device selection and ownership are owned by a partner team, not the Wireless Engineering team directly.

Additionally, they were deployed before I joined the team.



Laird Phantom Antennas

The vehicle mounted mobile devices in the yard were installed with Antenex / Laird "Phantom" antennas (we also have more of these mobile devices inside the warehouse, but they are in operation with the built-in omni-directional antennas). These antennas are manufactured for use in mobile vehicular environments, typically in urban environments with high amounts of RF signal reflection, refraction, diffraction, and scattering. Additionally, these antennas don't use typical units of measurement, they use a new gain specification called the dB-MEG. It appears that this technology has actually been around for a while, referencing an IEEE paper from 1990. The vendor (Antenex / Laird) claims that these Phantom antennas provide "a radiation pattern tailored to the mobile environment" by tuning the directivity and polarity of the antenna.

The dB-MEG is defined as follows:

Decibels Mean Effective Gain is used by one manufacturer. To establish the **Mean Effective Gain** for their antenna, received power is first measured and averaged using a ¼ wave whip (0 dBi) in a real mobile or reflective environment. (Continued on Next Page)

Measuring RF Antenna Gain in dB-MEG (Continued)

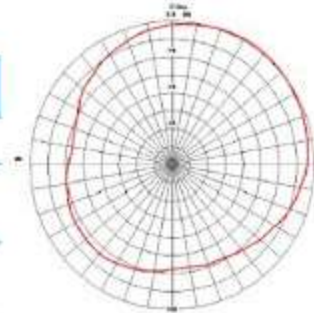
The whip is then replaced with their antenna, and again measured in the same environment.

The **MEG gain** is then the ratio of the two received powers. On average their antenna receives twice the power of the ¼ wave whip in a mobile or reflective environment. Alternatively said, their antenna has 3dBi **Mean Effective Gain**.

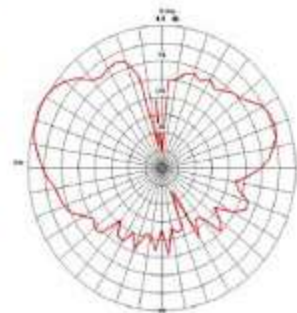
Here are sample specifications from one such antenna that we have in-use in our environment:

SPECIFICATIONS

ELECTRICAL	
Frequency Band	ISM, 2.4-2.5 GHz / 4.9-5.85 GHz
Frequency Range (Test Frequency at Peak)	2400 MHz 4900 MHz
Peak Gain (dBi) Azimuth Cut, Phi=0°	0.7 0.9
Peak Gain (dBi) Elevation Cut, Phi=90°	0.6 5.7
Elevation Beamwidth at Half-Power	30° 65°
Azimuth Beamwidth at Half-Power	130° 230°



Max Gain: 0.7 dBi
Average Gain: -3.9 dBi
Max Angle: 325.0°



Max Gain: 0.6 dBi
Average Gain: -7.6 dBi
Max Angle: 295.0°

Laird TRAB24/49003P Sample Antenna Specifications

Intermittently, we have problems with these devices dropping connection during roaming events. After we verified adequate coverage, ruled out interference, ran active tests and debugged the connection, I am ultimately questioning adequate signal reception by the client. Given two things really leads me to this conclusion: 1) The mobile device does not support diversity with external antennas, and 2) these Phantom antennas have lower gain than dipoles (when measured in dBi) and not quite omni-directional beam-widths. I can understand why our partner team chose these models, they are seemingly a good fit for mobile vehicles. However, their intended application in urban environments with high signal reflectivity and multipath is not even close to the same use-case as our warehouse shipping and receiving yards in rural American locations with vast wide-open spaces, fluctuations in trailer density in the parking lot, and minimal multipath. I am questioning whether the antenna radiation patterns (shown above) are causing the intermittent signal drop-out. (Continued on Next Page)

Measuring RF Antenna Gain in dB-MEG (Continued)

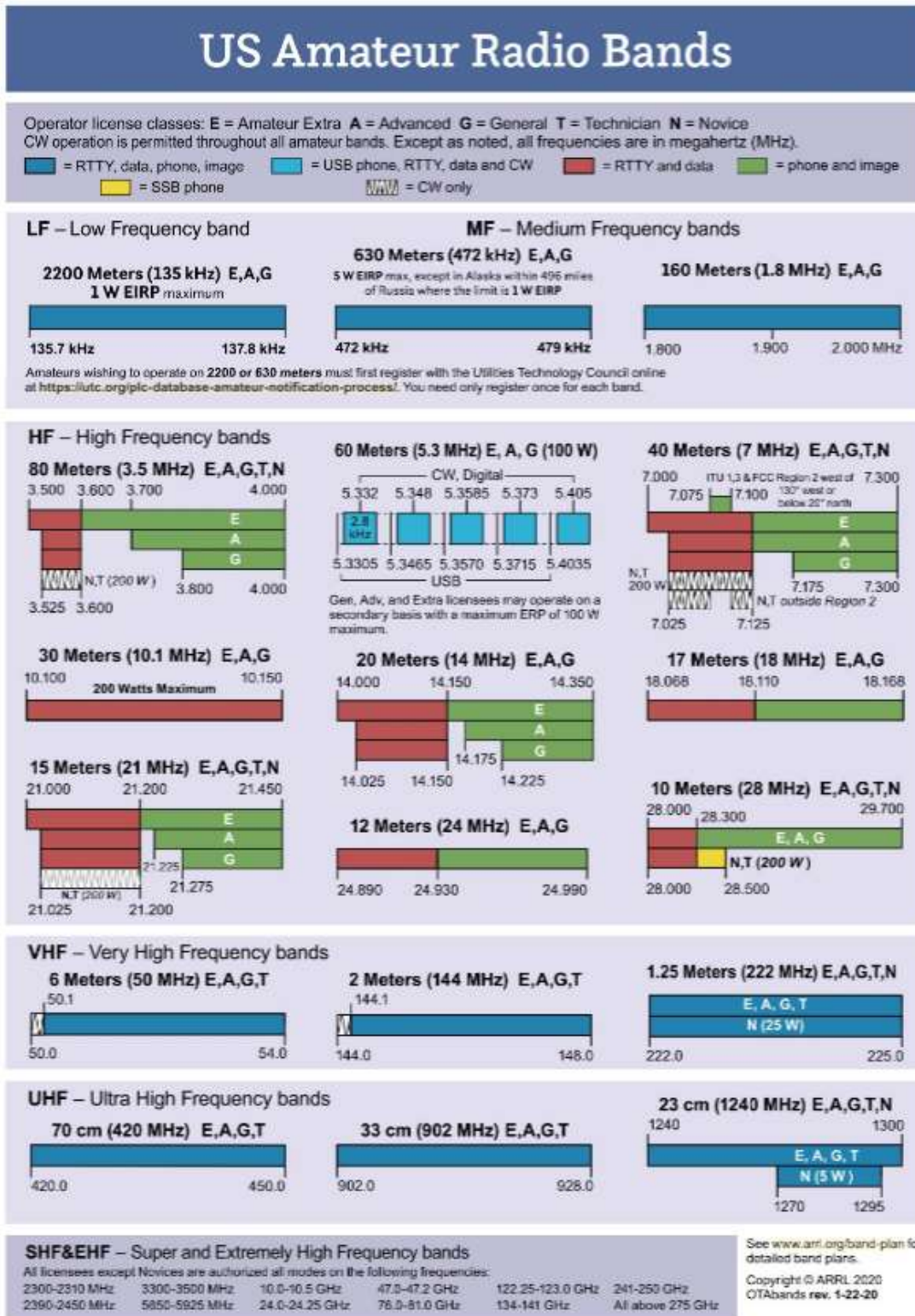
The problem isn't licked yet, but running across something new like **dB-MEG** presents a previously unknown variable to consider. I wasn't aware of this measurement unit in the market, and wouldn't have been unless I had run across this issue with an already deployed product in our environment or worked on an urban outdoor mobile vehicular project of some sort.

I'm still learning about these Phantom antennas, and have many more questions. However, based on these specifications and our performance issues, I'm not sold on their application in our environment.

I've added **dB-MEG** into my arsenal of Wi-Fi acronyms, even if it's categorized in the "nice to know, but not really useful" section.



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.arri.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 a reference copy of your current FCC amateur license. 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 2022, Headquarters and W1AW are closed on New Year's Day (observed December 31, 2021), Presidents Day (February 21), Memorial Day (May 30), Independence Day (July 4), Labor Day (September 5), Veterans Day (November 11), Thanksgiving and the following day (November 24 and 25), and Christmas Day (observed December 26).

