November
2019

McMINNVILLE AMATEUR RADIO CLUB
Supporting Yamhill County

www.marcwireless.org

Receive		Transmit		Duty Cycle	Min Capacity Required (Amp-Hours)			
Draw (Amps)	Draw (Watts)	Draw (Amps)	Draw (Watts)		2 Hours	5 Hours	10 Hours	24 Hours
0.40	5.04	0.40	5	20 Tx – 80 Rx	1	1	2	3
0.40	5.04	0.80	10	20 Tx – 80 Rx	1	2	2	5
0.40	5.04	1.50	19	20 Tx – 80 Rx	1	2	4	8
0.40	5.04	3.00	38	20 Tx – 80 Rx	2	4	7	15
0.40	5.04	4.00	50	20 Tx – 80 Rx	2	5	9	20
0.40	5.04	5.00	63	20 Tx – 80 Rx	3	6	11	25
0.40	5.04	6.00	76	20 Tx – 80 Rx	3	7	13	30
0.40	5.04	7.00	88	20 Tx – 80 Rx	4	8	15	34
0.40	5.04	8.00	101	20 Tx – 80 Rx	4	9	17	39
0.40	5.04	0.40	5	50 Tx – 50 Rx	1	2	3	5
0.40	5.04	0.80	10	50 Tx – 50 Rx	1	3	5	10
0.40	5.04	1.50	19	50 Tx – 50 Rx	2	4	8	19
0.40	5.04	3.00	38	50 Tx – 50 Rx	4	8	16	37
0.40	5.04	4.00	50	50 Tx – 50 Rx	5	11	21	49
0.40	5.04	5.00	63	50 Tx – 50 Rx	6	13	26	61
0.40	5.04	6.00	76	50 Tx – 50 Rx	7	16	31	73
0.40	5.04	7.00	88	50 Tx – 50 Rx	8	18	36	85
0.40	5.04	8.00	101	50 Tx – 50 Rx	9	21	41	97

Battery Capacity Requirements For Off Grid Operations

I'm just starting the research stage of building a solar generator for my personal radio operations at my QTH. My solar generator is planned to be nothing more than a battery system that is (mostly) kept charged by solar panels. To operate November through February that have more nighttime than daytime and quite often fog, rain and heavy clouds, I also am planning on an AC charger for to top off the batteries as well, but more about that in another article. In this article I'm just going to discuss the capacity sizing of the battery supply to meet my operating power needs.

Most rechargeable battery capacity is listed by showing the unit Ampere hour (Ah) capable by the battery. To point, the AA rechargeable batteries I use in my antenna analyzer have a rated capacity of 1.7 Ah. the replacement rechargeable battery I got for my handheld radio is rated at 3.8 Ah. For these smaller batteries their ratings were actually presented in milliAmp hours (mAh) rather than Ah. So back to the question, how many amp hours do I need for my radio operations?

Computing the battery capacity needed is fairly straight forward but does require some measurement and computation. In my case I have more than just radios that I want to run, but also have computers as well, so the measurement is necessary. If you are sizing for just the radio, the RF output power level can be used as a rough estimate of the power consumption during transmit. Combining this with your transmit/receive duty cycle and the number of hours expected to run off of the battery you can get a good estimate of the capacity of battery needed. With this in mind a simple formula may be used. For receiving, an approximation of the current dray may be used during receiving duty cycle. For the transmit cycle the RF wattage setting during transmission, convert each to its amperage. Multiply the TX amperage time the percentage of time transmitting, and add that to the multiplication of the RX amperage times the percentage of time transmitting. Take this computation and multiply it times the number of hours you need to run the radio to get your Amp hours of capacity needed. This formula looks like:

$$Capacity = (((\frac{RxDrawWatts}{Voltage}) * RxDutyCyclePercentage) + ((\frac{TxDrawWatts}{Voltage}) * TxDutyCyclePercentage)) * Hours$$

Using this formula I created the table ins a spreadsheet which is shown on page 1 for two duty cycles. A typical every day 80-20 cycle. This consists of 80% receiving and 20% transmitting. The other duty cycle is more of a Field Day like duty cycle, with the time listening and receiving being nearly identical. From my own experience receiving uses about 0.2 to 0.4 amps depending on the radio. I chose the higher number of 0.4 amps for receiving in this table.

To use this table to figure out the capacity needed on Field Day to run a radio on a single battery for 24 hours transmitting with RF power of 100 watts:

Choose the 50 Tx – 50 Rx rows with a the 101 Transmit Draw Wattage. Select the value under 24 hours. This requires you to have a battery with 97 Amp hours of capacity. It should be noted if using a lead acid battery if is a deep cycle battery you should use no more than 50% of it's charge for longevity of the battery. Typical starter batteries shouldn't be lower than 40% of their charge for longevity. So one would need a 200 Amp hour battery if using a deep cycle or 250 amp hour car battery. More discussion on batteries will be provided as I research these for my solar generator.

ARRL Field Day Final Results Are In

This year 3,113 entries were filed by participant groups for the ARRL Field Day. Nearly 36,000 operators and participants were involved, resulting in 1.1 million confirmed contacts within the 24 hour period. Compared historically, this is a slight drop in participants and nearly 10% drop in the number of contacts, but about a 10% increase of participating groups. Splitting the contacts into the groups; 46% were made by phone, 42% made by CW, and 12% made by digital. This is close to a 250% increase in digital contacts. Mostly in the FT8 mode, which allowed contacts in less than optimum band conditions. Due to the increase in digital contacts, the historical drop in contacts would have been much greater due to the sub par band conditions.
MARC participated as a Class 4A participant, 41% of participating groups were Class A. Of the 135 Class 4A, there were 4 participating groups from Oregon, and another two from Western Washington. The following is the relative ranking from those of us within the Pacific Northwest:

Rank	Club	Score		Rank	Club	Score
7	Oregon Tualatin Valley ARC	7,444		65	McMinnville ARC	2,404
51	Snohomish County ARC	3,362		88	Sky Valley ARC (NE King County)	1,956
53	Coos County ARC	3,200		127	AC7MI (Beaverton Ham Group)	1,218

MARC Election

This Thursday we are holding elections for officer and board members of the McMinnville Amateur Radio Club. If you do not think you'll be able to attend the meeting please let Jayne, KI7MZP, know and she can send you a proxy form. Here is the ballot as of Monday 11/11/2019.

	POSITION	NAME	CALL SIGN	X	
1	**President:**	Anthony Perez*	KI7ZBQ		**Vote for One**
2					
3	**Write in:**				
1	**Vice President:**	Richard Cornwell	K9RCP		**Vote for One**
2		Jeff Monahan	NI7X		
3					
4	**Write in:**				
1	**Secretary:**	Jayne Wolf*	KI7MZP		**Vote for One**
2					
3	**Write in:**				
1	**Treasurer**	Katie Perez	KI7ZLL		**Vote for One**
2					
3	**Write in:**				
1	**Board Members:**	Brian Wright*	W7OWO		**Vote for Three**
2		Fred Rodley*	N0NNO		
3		Craig Merrick	W7EEO		
4					
5	**Write in:**				
6					
7					
Mark an "X" for each position except Board, them mark three.					
*** Indicates incumbent running for re-election**					

YCARES Emergency Frequency List

The list of frequencies provided here are published to all Hams to be informed of where communications operations will occur within Yamhill County during emergency operations. All ARES members should have the repeaters and simplex frequencies programmed into their primary hand held VHF/UHF radio. MARC members are encouraged as well. Simplex Frequencies can change or added due to conditions and needs. Know how to add and change simplex frequencies in VFO Mode on your radio!

Priority	Mode	Frequency PL Tone	Offset	Call
Primary	Repeater	441.800 MHz 114.8 Hz	+5.0 MHz	W7YAM
Secondary	Repeater	146.640 MHz 100.0 Hz	-0.6 MHz	W7RXJ
Tertiary	Repeater	442.550 MHz 114.8 Hz	+5.0 MHz	K0INK
Primary	Simplex	146.400 MHz	VHF	
Secondary	Simplex	147.520 MHz	VHF	
Primary	Simplex	432.150 MHz	UHF	
Secondary	Simplex	431.150 MHz	UHF	
Eola Hills	WinLink	144.920 MHz	VHF	W7YAM-10
EOC	WinLink	144.960 MHz	VHF	W7YAM-11
Eola Hills	WinLink	441.050 MHz	UHF	W7YAM-12
Newberg Dundee	Winlink	145.080 MHz	VHF	W7OWO-10

Local Nets

MARC Net				YCARES Net			
Monday November 11th	7:00 pm	146.640 - PL100		Monday November 11th	7:30 pm	441.800-PL114.8	Jayne KI7MZP
Monday November 18th	7:00 pm	146.640 - PL100		Monday November 18th	7:30 pm	441.800-PL114.8	Alan KF7PPS
Monday November 25th	7:00 pm	146.640 - PL100		Monday November 25th	7:30 pm	441.800-PL114.8	Mac KF7QLF
Monday December 2nd	7:00 pm	146.640 - PL100		Monday December 2nd	7:30 pm	441.800-PL114.8	Ardi AA1AO
Monday December 9th	7:00 pm	146.640 - PL100		Monday December 9th	7:30 pm	146.640-PL100	Jeff NI7X
Monday December 16th	7:00 pm	146.640 - PL100		Monday December 16th	7:30 pm	441.800-PL114.8	Paul KE7IQL
Monday December 23th	7:00 pm	146.640 - PL100		Monday December 23th	7:30 pm	441.800-PL114.8	Keith AA6TK
Yamhill County Weather Spotter Net				**CERT Net**			
Sunday November 17th	6:00 pm	146.640 - PL100		Sunday November 17th	7:00 pm	146.640 - PL100	

If you have a newsworthy small point of interest you would like presented in the MARC newsletter. Here is the place for them. Just send an email to me (Brian, W7OWO) my email address shown in the Club Officers call-out. Entries will be approved by the board.

Special Services Club

About Us

The McMinnville Amateur Radio Club
PO Box 891
McMinnville, Oregon 97128

The McMinnville Amateur Radio Club (MARC) was founded in mid- 1981 by a group of Yamhill County area amateur radio operators who wished to share their common interests. An association was formed of men and women devoted to probing all facets of amateur radio.

2019 Club Officers		
President	Anthony Perez, KI7ZBQ	anthony.perez@marcwireless.org
Vice President	Victor Viola, N7WOF	victor.viola@marcwireless.org
Secretary	Jayne Wolf, KI7MZP	jayne.wolf@marcwireless.org
Treasurer	Jane Beals, W7LAW	jane.beals@marcwireless.org
Board Member	Katie Perez, KI7ZLL	katie.perez@marcwireless.org
Board Member	Fred Rodley, N0NNO	fred.rodley@marcwireless.org
Board Member	Brian Wright, W7OWO	brian.wright@marcwireless.org

October 31st Treasurer's Report	
Account	**Funds**
Repeater Maintenance & Project Account	$5,233.92
Education Fund	$230.63
MARC Business Account	$1,721.90
Total:	**$7,186.45**

Local Open Repeaters

W7RXJ 146.640- PL tone 100 Hz
W7YAM 441.800+ PL tone 114.8 Hz
K0INK 442.550+ PL tone 100.0 Hz

Repeaters

If you have a newsworthy small point of interest you would like presented in the MARC newsletter. Here is the place for them. Just send an email to me at W7OWO@marcwireless.org. Entries may require Board approval.

Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
Oct 27	28 Club Net YCARES Net	29	30	31	Nov 1	2
3	4 Club Net YCARES Net	5	6	7 Board Meeting	8	9 MARC VE Testing
10 ARGO VE Testing	11 Club Net YCARES Net	12	13	14 General Club Meeting	15	16
17 WX Net CERT NET	18 Club Net YCARES Net	19	20	21 Library Lunch YCARES Meeting	22	23
24	25 Club Net YCARES Net	26	27	28 Thanksgiving	29	30
Dec 1	2 Club Net YCARES Net	3	4	5 Board Meeting	6	7

Regular Events

Monthly YCERT Net, 3rd Sunday at 7PM on 146.640- PL 100

Monthly MARC Board Meeting, 1st Thursday of every month at China House in McMinnville, next to Bi-Mart. Starts at 7PM

Monthly MARC Club Meeting, 2nd Thursday of every month, starts 7PM at the OSU Extension Service Office 2050 NE Lafayette Ave, McMinnville

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Monthly library lunch. Bring your lunch at 11:30 am on the 3rd Thursday in the Carnegie room at the McMinnville Library, 225 NW Adams St

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YCARES Monthly Meeting, 3rd Thursday of each month. Meet at the Lafayette Community Center.

Significant Event Items:

McMinnville Amateur Radio Club

- Monthly VE Testing, 11/09, 9:00 am *** Special Day ***
  - Lafayette Community Center
- Monthly General Club Meeting, 11/14 7:00 pm
  - OSU Extension Service Office 2050 NE Lafayette Ave, McMinnville
  - Host: Millie, W7MIP
  - Presentation: Anthony, KI7ZBQ – Continuation of DMR
  - Officer Voting
  - Radio/Antenna Issues Q&A
- Monthly Library Lunch, 11/21 11:30 am
  - Carnegie Room, McMinnville Library
- Decembers Board Meeting, 12/05, 7:00 PM
  - China House Restaurant, McMinnville
  - Arrive early and join many Board Members for dinner.
- MARC Christmas Potluck, 12/12, 6:00 pm

Yamhill County Radio Emergency Services (YCARES)

- Monthly YCARES Meeting, 11/21 7:00 pm *** Special Day ***
  - Lafayette Community Center

Amateur Radio Group of Oregon

- November VE Testing, 11/10, 3:00 pm
  - Chehalem Valley Innovation Accelerator
  - Walk-Ins Welcome

MARC VE Exam Session Results

New Technicians
Fred Shipley

Local VE Testing Locations

McMinnville Amateur Radio Club – VE testing via ARRL. Lafayette Community Center located at 133 Adams in Lafayette, Oregon. Monthly ARRL VE exams on the third Saturday every month, testing begins at 9:30AM. Contact Armand Pilotte, W7IG at 503-843-0906 or email w7ig@arrl.net for more information.

McMinnville W5YI VE Team - Contact Mark Altus, AC7ZQ at 503-843-3580 for more Information.

Portland Amateur Radio Club is currently offering sessions on a request or by appointment basis. Contact Pete W7PR, via email w7pr@juno.com for more information.

Oregon Tualatin Valley ARC – VE Exam sessions are held on the first Saturday of each month except June at 1:00 PM at the Sunset Presbyterian Church 14986 NW Cornell Rd, Portland, OR 97229. Contact John Bucsek, KE7WNB, 503.803.6134, ke7wnb@gmail.com, to preregister.

Hoodview Amateur Radio Club offers one session at 9:00AM on the 3rd Saturday morning of every odd numbered month at Mt Hood Community College in Gresham. Arrive early as the doors close at 9:00am to Room HF1, the Horticulture Fisheries Bldg. Map available at club website http://www.wb7qiw.org/map_vetest.htm.

McMinnville Amateur Radio Club
2020 MEMBERSHIP APPLICATION

(A completed application form must be included with yearly dues)

Please print:

Name: _____ Call Sign: _____ Class: T G A E

E-mail address (required)**:**_____@_____ **Total $ ___.__**

Address: _____

City: _____ State: ____ Zip: _____ Phone #: _____

Date first licensed: _____/_____ Birthday: _____/_____ ARRL Member? Y / N
month year month year

Renewal? Yes / No (New to MARC? You will receive a MARC Membership Badge!)

Annual Club Membership - **$20.00** per person/family at the same address…….**$ 20.00**
Your MARC membership begins from date of signup or renewal to December 31 of the same calendar year.

Additional Voluntary donation – for repeater support and club projects……..**$ ___.__**

Total $ ___.__

Additional Family Members:
(**ALL** family members must reside at the same address.)

Name: _____ Call sign: _____ Birthday:____/____ Class: T G A E
E-mail address: _____@_____

Name: _____ Call sign: _____ Birthday:____/____ Class: T G A E
E-mail address: _____@_____

Please include any additional family members on back.

Signature of Applicant: _____ Date: _____

Make check payable to "MARC". Give to Club Officer or mail application to:

McMinnville Amateur Radio Club
PO Box 891
McMinnville, OR 97128

Club meetings are the second Thursday of each month at 7PM:

OSU Extension Service Office
2050 NE Lafayette Ave
McMinnville, OR 97128

For Office Use Only:
Processed by Treasurer: _____ Secretary: _____
Date Received: _____
Cash/Check #: _____
Amount: _____
Receipt: _____