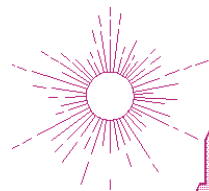


ADAW

4529 W. Park Place
Glendale, AZ 85306-1512



ADAW

Arizona Desert Aire Waves

Vol 43, No 5

May 2018

CLUB MEETING SCHEDULE

QCWA
June/July
TBD

Prescott Area
11:00 AM

WVARC
May 7th
Location TBD
7:00 PM

SuperstitionARC
May 15th
Charles K Luster Bldg
7:00 PM

ARA
May 24th
Denny's Restaurant - Tempe
7:30 PM

MARCA
May 15th
Denny's Restaurant - Tempe
6:30 PM

MARA
May 5th
Maricopa PD Community Rm
9:00 AM

ANSR
May 17th
via GoToMeeting
7:30 PM

YARC
May 3rd
Mile High Middle School
7:00 PM

OVARC
May 18th
Ascension Lutheran Church
7:30 PM

TCARA
May 21st
Goodyear City Hall
7:00 PM

CLUB MEETING SCHEDULE

SARC
May 2nd
Scottsdale Senior Center
7:00 PM

AARC
May 10th
Red Cross Bldg. - Phx
7:30 PM

OPRC
Jun 13th
Marshall Conference Ctr
at Tucson Medical Ctr
7:15 PM

TBARC
May 17th
North Phoenix Campus
Northern Arizona University
7:00 PM

MCCARC
May 7, 14, 21, 28
Mesa Community College Tech Bldg
7:00 PM

CADXA
May 3rd
PERA Club
6:00 PM

ADAW Member Clubs

ARIZONA AMATEUR RADIO CLUB

The Arizona Amateur Radio Club meets on the **SECOND THURSDAY** of each month at 7:00 p.m. at the American Red Cross Building at 4747 N 22nd St. in Phoenix. Visit web site at www.W7IO.org for map. Visitors are welcome.

President	Gary Hamman	K7GH	602.996.8148
Vice President	Mark Kesauer	N7KKQ	602.843.0960
Secretary	Reinhard Geissler	K7RGG	
Treasurer	Bob Hodges	K7JJT	602.375.9982
Activities Mgr	Lori Cripps	WA7EDI	602.955.7517
Membership	Bob Hodges	K7JJT	602.375.9982

AARC c/o Bob Hodges, K7JJT, 15214 N 7th Place, Phoenix, AZ 85022. DUES: \$15.00/YR, Prorated (\$18.00 Family, \$9.00 Student), MEMBERSHIP YEAR BEGINS FEB. 1.

SCOTTSDALE AMATEUR RADIO CLUB, INC.

The Scottsdale Amateur Radio Club meets the **FIRST WEDNESDAY** of each month at 7:00 p.m. in Room 8 at the new Scottsdale Senior Center located at 1700 N Granite Reef Road (west side of Granite Reef Rd., 50 yards north of McDowell Rd. Parking on site). The club also holds a net every Tuesday night at 7:00 p.m. on the 147.78/.18 repeater.

President	James Wasson	N7ELL	480.456.1154
Vice President	Kelley Law	KF7ZVL	480.225.8515
Secretary	Paul Jorgenson	KE7HR	
Treasurer	Ed Nickerson	WU7S	480.949.5162
Past President	Paul Finell	W7EFQ	602.741.6563
Board Members	Bob Johnston	K7TR	
At-Large	David Yee	N7AJR	
	Bill Kouchis	N9EIV	602.723.0700
	T D Kennard	N7ISR	
	Ray Vasquez	K4RMV	(ARCA Rep)
	Bruce Harmsen	KA9EYX	
	Chris Tabor	K7TAB	
	Irv Hembeck	K00TZ	

SARC, P. O. Box 10878, Scottsdale, AZ 85271-0878. Phone: 602.735.3988. DUES: \$20.00/YR, (\$10.00/Add'l Family Member). Web Site: www.scottsdalearc.org

ARIZONA NEAR SPACE RESEARCH

The Arizona Near Space Research group meets the **THIRD THURSDAY** of the month at 7:30 p.m. via GoToMeeting. Technical meetings are held the first Monday of the month at 7:30 p.m. on GoToMeeting. Please contact an officer about joining our meetings.

President	Stephen Thomas	KE7TLS	iamgadget1@yahoo.com
Vice President	Clayton Jacobs	KJ6QJS	
Secretary	Steve Miller	W6SDM	
Treasurer	Bill McLean	K7WWM	bmclean1@gmail.com

ANSR, PO Box 31003, Mesa, AZ 85275-1003. DUES: \$10.00/YR. Web Site: www.ansr.org

THUNDERBIRD AMATEUR RADIO CLUB

The Thunderbird Amateur Radio Club meets the **THIRD THURSDAY** of each month at 7:00 p.m. at North Phoenix Campus of Northern Arizona University located at 15451 N. 28th Avenue (near I-17 and West Greenway Road). The meeting is held in room 147. See the website (<http://w7tbc.org>) for a map and more details.

President	Brian McCarthy	AK7F	623.670.0410
Vice President	Chris Johnson	K6OZY	623.866.2777
Secretary	Gary Cline	AF7BJ	
Treasurer	Darren Johnson	AF7CO	
Board Members	Clair Wyant	KG7MAJ	
	Wayne Hale	W6IZK	
	Robert Fairfield	K7RQN	
	Andrew Cornwall	KF7CCC	
Past President	Gary Duffield	WK7B	602.843.7724

For further information about the ThunderBird Amateur Radio Club, visit our website at <http://w7tbc.org>, send an e-mail to: info@w7tbc.org or call 602.938.8219. The Thunderbird Amateur Radio Club is a 501(c)(3) non-profit organization. Mailing address: PO Box 32544, Phoenix, AZ 85064-2544.

OLD PUEBLO RADIO CLUB

The Old Pueblo Radio Club meets the **SECOND WEDNESDAY** of March, June, September and December at 7:15 p.m. in the Marshall Conference Center at Tucson Medical Center. Visitors are welcome.

President	Ron Kalish	N7SPW	520.207.3852
Vice President & Treasurer	George Devich	N9IUK	520.760.0125
Board of Directors:	Cliff Hauser	KD6XH	
	Jim Ulmer	KC7THU	
	Lin Donnelly	KF7CNR	
WebMaster	Ted Willis	AA7HX	520.790.3828
		(www.oprc.org)	
Trustees:	(all repeaters operating under the K7TRA call)		
Primary	Cliff Hauser	KD6XH	
		146.660, 146.820, 147.220-	
	Paul VanBeverhoudt	KA7LFX	224.06+
Secondary	Ted Willis	AA7HX	146.66-
	Ralph Turk	W7HSG	146.82-
	Paul VanBeverhoudt	KA7LFX	224.06+

Mailing address: OPRC, P.O. Box 42601, Tucson, AZ 85733-2601. DUES: Individual - \$20.00/YR, Family - \$30.00/YR.

AZ RED CROSS COMMUNICATIONS CLUB

The Arizona Red Cross Communications Club meets at the Red Cross Building located at 4747 N 22nd Street in Phoenix. The group meets at emergency drills and at the call of the officers.

President	Frank Engstrom	KB7IQ	480.209.7300
Vice President	Larry Buchanan	AA0LB	623.703.9161

Arizona Red Cross Communications Club - K7ARC, 4747 N 22nd Street, Phoenix, AZ 85016.



ADAW Member Clubs

BARRY M GOLDWATER, ARIZONA CHAPTER QUARTER CENTURY WIRELESS ASSOCIATION

The Barry M Goldwater Arizona Chapter of the QCWA includes amateurs from all over Arizona. Four luncheon meetings are planned each year. The meeting months and locations are announced by newsletter, but generally follow the following schedule:

Spring Meeting	March/April	Tucson Area
Summer Meeting	June/July	Prescott Area
Fall Meeting	October	Phoenix Area
Holiday Meeting	December	Carefree Area

The AZ Chapter meets on the air every Sunday morning at 0700 MST (0730 during December and January) on 3890 +/- QRM. During December and January, the net time is moved to 0730 MST.

President	John Marshall	WA7BSR	623.334.2583
Vice President			
Secretary			
Treasurer	Dave Hanson	W7BJ	w7bj@outlook.com
Webmaster	John Marshall	WA7BSR	623.334.2583

Web Site: <http://azqcwa.org> Email: azqcwa@gmail.com.
DUES: \$7.00/year and current national QCWA membership.

MINGUS MOUNTAIN REPEATER GROUP

Meetings are held twice a year, an annual board meeting in Phoenix and a picnic meeting in Chino Valley. Dates, times, and locations are announced in the newsletter.

President	Bob Sitterley	K7POF	928.636.2146
Vice President	Ray Tyrrell	N6MY	n6my73@gmail.com
Treasurer	Bob Sitterley	K7POF	928.636.2146
Secretary	Lori Cripps	WA7EDI	602.955.7517

Web Site: <http://www.k7mrg.org>. DUES: \$20.00 per year, due prior to July 1. MEMBERSHIP YEAR - July 1 - June 30.

MARICOPA AMATEUR RADIO ASSOCIATION

The Maricopa Amateur Radio Association (MARA) meets the **FIRST SATURDAY** of each month at 9:00 a.m. at Maricopa PD Community Room, 17985 N Greythorn Dr. in Maricopa.

President	Steve Miller	W6SDM	602.290.1603
Vice President	Chris Canevit	W7CGC	
Secretary	John Wiltberger	NO7IN	
Treasurer	Curt Steger	NA7CS	520.568.9471
Board Members:	Ronald Beasley	KG7MUV	520.568.4880
	Bob Howard	W8RH	520.709.6176
	David French	N7FAN	480.430.9426
	Dale Dallon	KB7DD	
	Greg Harding	KG7VNZ	
PIO:	Steve Miller	W6SDM	602.290.1603
Webmaster:	David French	N7FAN	480.430.9426

The Maricopa Amateur Radio Association is a 501(c)(3) non-profit organization. DUES: \$25.00/year individual, \$30.00/year family. Apply on-line at www.copahams.org. Mailing address: P O Box 951, Maricopa, AZ 85139

WEST VALLEY AMATEUR RADIO CLUB

The West Valley Amateur Radio Club is an Arizona 501(c)(3) non-profit corporation. Meetings are the **FIRST MONDAY** of each month at 7:00 PM location currently being decided. Check web site for more info. The board meets the third Tuesday of the month at Lou's Trivoli Gardens, 12535 W Bell Rd, Surprise at 7:00 PM. The Emergency Preparedness Group meets the third Monday of the month at 7:00 PM at Boswell Hospital. Club nets are held on 147.300 (tone 162.2) at 9:00 AM daily and Monday - Thursday at 8:00 PM. The preparedness net is held the last Friday before the monthly Monday night meeting at 8 pm on the NY7S repeater 147.300 MHz, Tone 162.2 Hz. A weekly breakfast is held every Thursday at Lou's Trivoli Gardens, 12535 W Bell Rd., at 7:00 AM.

President	Gary Robin	K9HDU	
Vice President	Ralph Nagle	W9ADW	
Secretary	April Kramer	KI7GFJ	602.284.6312
Treasurer	Tom Connor	W7TLC	623.444.7956
Club Directors:	Bob Paul	KG7FIL	623.252.0149
	Nancy Collins	KG6QWW	623.398.5286
	Many Blanco	KI7QLD	
	David Putman	W7DCP	

WVARC, P O Box 1573, Sun City, AZ 85372-1573. DUES: \$15.00/YR for family residing at the same address. MEMBERSHIP YEAR - January - December. Web Site: <http://www.westvalleyarc.org>. Email: suncitywvarc@gmail.com

SUPERSTITION AMATEUR RADIO CLUB

The Superstition Amateur Radio Club meets at 7:00 p.m. on the **THIRD TUESDAY** of each month (except December) at the Charles K Luster Building, 640 N. Mesa Drive, Mesa (use the glass door on your left at the main entrance). Visitors are welcome. Board meetings are held at 6:30 p.m. on the second Tuesday of each month (except December) at Black Bear Diner, 1809 E. Baseline Road, Gilbert.

President	Steve Estes	KB7KWK	480.251.0551
Vice President	Andy Keels	KD4ABB	602.809.3561
Secretary	Brent Butler	W7FK	480.332.1141
Treasurer	Douglas Mitchell	W7ADD	480.540.4110
Board Members:	Dan De Vlieger	KC7MSU	480.335.4914
	Dan Karnes	W7TWR	602.502.5259
	Don Rollock	W2EUL	w2eul@yahoo.com
	Jeff Harris	K2DFE	602.617.6930
	Jeff Heinze	N7CCW	480.720.7908
	Jeff Marchesky	K7ZLX	602.628.0238
	Larry Fort	AB7C	480.861.7066

Superstition ARC, 5155 E Eagle Dr #21522, Mesa, AZ 85277. Web Site: SuperstitionARC.org and SuperstitionSuperFest.org. The Superstition Amateur Radio Club is a 501(c)(3) non-profit organization. For club information, please send email to: Communications@SuperstitionARC.org.



ADAW Member Clubs

MARCA, Inc. / W7MOT

MARCA is an Arizona 501(c)(3) Non-Profit organization. The club call sign in W7MOT. Membership is open to all amateur radio enthusiasts. Meetings are held the **THIRD TUESDAY** of each month at 6:30 p.m. at Denny's Restaurant located at 825 S 48th Street in Tempe (SE corner of University & 48th Street). Monthly presentations cover a broad spectrum of interesting subjects. Visitors are welcome to attend. Come early for dinner and socializing. Repeater Problem Reports are encouraged. A Repeater Problem or Comment Reporting is available at <http://www.w7mot.org/index.php/repeaters/report-a-repeater-problem>. Site Managers and officers will take reports for any W7MOT repeater. Contacts are found on website. Club activities include providing voice, aprs, packet, DStar, and Fusion repeaters Central Arizona; ARRL Field Day, special interest groups in SDR, APRS, antennas, digital modes, and SBC applications.

President	Norm Johnson	AA7OO	480.278.2886
Vice President	Dave Hall	N7ZPY	
Treasurer	Don Aldridge	WA7RLL	
Board Member	David Yee	N7AJR	
Trustee:	Norm Johnson	AA7OO	480.278.2886
Webmaster:	Norm Johnson	AA7OO	480.278.2886

MARCA, Inc., PO Box 28246, Tempe, Arizona 85285. Membership dues \$25 annually. See our website (<http://w7mot.org>) for more information about meeting schedules, membership, repeaters, library, and club activities.

ARIZONA REPEATER ASSOCIATION, INC

The Arizona Repeater Association general meeting is held the **FOURTH THURSDAY** of each month at 7:30 p.m. There are no meetings in July and December. The November meeting is held the Monday before Thanksgiving. Meetings are held at Denny's Restaurant, 825 S 48th Street, in Tempe, near SR 143 and University Drive. Visitors are welcome. Come early for food and social time before the meeting starts. For further information about the ARA, including repeaters, site status, and the tech/board meeting, please visit our web site at www.w7ara.org.

President	Brian McCarthy, AK7F	ak7f@w7ara.net
Vice-President	Erv Heimbuck, K0OTZ	k0otz@w7ara.net
Treasurer	Cole Cunningham, AA7RD	aa7rd@w7ara.net
Secretary	Jim Hoff, N7XXX	n7xxx@w7ara.net
Board Members:		
	Lance Halle, KW7LH	kw7lh@w7ara.net
	Dennis Bietry, KE7EJF	ke7ejf@w7ara.net
	Doug Pelley, WB7TUJ	wb7tuj@w7ara.net
	Joe Godfrey, AE7JG	ae7jg@w7ara.net
	Dennis Campbell, AE7WU	ae7wu@w7ara.net
	Mike Montalvo, KF7MBK	kf7mbk@w7ara.net
	Marty Dusenberry, KE7DGP	ke7dgp@w7ara.net
	James Wasson, N7ELL	n7ell@w7ara.net

For Membership Information, contact (Joe Godfrey, AE7JG membership@w7ara.net) Arizona Repeater Association, Inc, P. O. Box 35758, Phoenix, Arizona 85069-5758. To join or renew, please visit <http://w7ara.org/mbr/Membership.aspx>. DUES: \$18.00/yr. (Jan. 1 through Dec. 31) with a one-time initiation fee of \$10.00. Life and family memberships are available.

YAVAPAI AMATEUR RADIO CLUB

The Yavapai Amateur Radio Club meets the **FIRST THURSDAY** of every month at the Freeman Building in the Prescott Rodeo Grounds located at 840 Rodeo Drive in Prescott (visit web site at www.w7yrc.org for directions and map). YARC is an ARRL Special Service Club dedicated to public service and emergency preparedness. The club serves the quad cities area of Prescott, Prescott Valley, Chino Valley/Paulden, and Dewey/Humboldt.

President	Kathy Laing, KJ6KMK	president@w7yrc.org
Vice-President	Joe Thomas, KG6IDN	vice_president@w7yrc.org
Secretary	Art Jackson, KA5DWI	secretary@w7yrc.org
Treasurer	Mike Reid, N7IEP	treasurer@w7yrc.org
Board Members	Frank Bender, K8FB	k8fb@w7yrc.org
	Don Bauer, WB7TPH	wb7tph@w7yrc.org
	Dave Hanson, W7BJ	w7bj@w7yrc.org
	John Laing, K7PRS	k7prs@w7yrc.org

Yavapai Amateur Radio Club, P O Box 11994, Prescott, AZ 86304-1994. DUES: \$20.00/yr. Visit the website at www.w7yrc.org

ORO VALLEY AMATEUR RADIO CLUB

The Oro Valley Amateur Radio Club meets the **THIRD FRIDAY** of each month at 7:00 p.m. at Ascension Lutheran Church located at 1220 W Magee Road in Tucson. (June is normally Field Day. December is annual Christmas Party and date and location varies.) Visitors are welcome. Board Meetings are held at 9:00 a.m. at the Oro Valley PD Substation EOC on Tangerine Rd (next to WalMart) in Tucson. Check the web site at www.tucsonhamradio.org for dates.

President	Steve Wood, W1SR	president@tucsonhamradio.org
Vice-President	Fred Bresani, W2HZ	vicepresident@tucsonhamradio.org
Secretary	Carl Foster, KB7AZ	secretary@tucsonhamradio.org
Treasurer	Hanna Eckert, KG7TPD	treasurer@tucsonhamradio.org
Board Members	Ross Eckert, K4WBR	
	Scott Boone, K7ADX	
	Gary Pierce, WE7GP	
	George Cooley, NG7A	
	Marnee Dearman, KG7SIO	

DUES: \$25.00/year (Household members living at same address \$15.00 each additional). To join or for additional information, visit website at <http://www.tucsonhamradio.org/>.

MESA COMMUNITY COLLEGE AMATEUR RADIO CLUB

The Mesa Community College Amateur Radio Club meets **EVERY MONDAY** of the month at 7:00 p.m. at Mesa Community College located at 1833 W Southern Avenue in Mesa. The meetings are held in the Technology Center Building 50, Room TC414 on campus. Every other meeting focuses on beginner topics to assist members in testing for the Technician license. All are welcome to join and there are no membership dues or requirements other than only MCC students may vote and hold club officer positions. Visit us at <https://www.facebook.com/KM7CC>

President	Charlie Brown	NJ7V	nj7v@arrl.net
Vice President	Nick Bratcher		thetowerpeople@gmail.com
Senator	Victor Valderram		vicau50911@maricopa.edu
Secretary	Robert Swanson		robswanson30@yahoo.com

ADAW Member Clubs

CENTER FOR AMATEUR RADIO LEARNING

The Center for Amateur Radio Learning is a hands-on amateur radio station, W7ASC, located within the Arizona Science Center at 600 E. Washington, Phoenix. Board meetings are held the last month of each quarter at the AZ Science Center. Annual meeting for all volunteers is held the **THIRD SATURDAY** of January. Watch ADAW for details.

President	Jack Landon	KD7ROB	480.759.5195
Vice President	Jim Felkey	N7BBS	480.966.7084
Secretary	John O'Neal	K7IP	480.345.7800
Treasurer	Karen McConaghy	NO7D	602.799.7338

Board Members:

Jean W4CIH	ADAW, Publicity
Steve WB4ZSC	Tech/IT, CARL/ASC Interface
Fred K9TOS	Logbook/QLS
Tom K9TOS	At Large
Sam N7INV	Scheduling
Dave W7PMD	Hamfests
John K7JP	Teacher Packets
Bob KG7QJ	Classes, ASC Contact

Web Master, ARCA Rep - Roger Buel, W9NCQ - 602.493.7242
 For information: Email to carl@w7asc.org or call Jack, KD7ROB at 480.759.5195. Web Site: <http://www.w7asc.org>

CENTRAL ARIZONA DX ASSOCIATION

The Central Arizona DX Association meets the **FIRST THURSDAY** each month at 7:00 p.m. (except for January Awards Banquet) at the PERA Club, located at 1 E Continental Drive in Tempe. Visitors always welcome. See www.cadxa.org/meetings.html for a map. The May meeting is an outdoor barbecue at 6:00 p.m. (reservations required).

President	Lee Finkel	KY7M	ars-ky7m@cox.net
Vice President	Fred Hoffert, III	NA2U	cwman1@aol.com
Secretary	Bill Poole	AA4Q	bill@poole.com
Treasurer	Alton Chaney	W7ACX	w7acx.480@gmail.com
Past President	Tom Kramer	NQ7R	tkramer@azci.net
Board Members	Larry Loen	WO7R	lwloen@gmail.com
At-Large	Reinhard Geissler	K7RGG	d11uf@compuserve.com

CADXA, P.O. Box 24616, Tempe, AZ 85285-4646. Email: cadxa@cox.net. Dues are \$25 per year (\$12.50 per additional family member). For more information, DXing resources, and a membership application, visit our website: www.cadxa.org.



TRICITY AMATEUR RADIO ASSOCIATION

The TriCity Amateur Radio Association meets the **THIRD MONDAY** of the month at 7:00 p.m. in the Goodyear City Hall Conference Room located at 190 N Litchfield Road in Goodyear. Parking is available on the west side of the building. (A social gathering is held at Village Inn at 2700 N Litchfield Road after the meeting.) Weekly Rag Chew every Wednesday at Village Inn (2700 N Litchfield Road) at 2:30 p.m. All hams are welcome. Weekly net is held Wednesday evenings at 7:30 p.m. on 446.400 MHz (PL 100 Hz). Events are posted on our Yahoo Group page at <https://groups.yahoo.com/neo/groups/TRICITYARA/info>

President	Bob Nobis	N7RJN	n7rjn@nobis.net
Vice President	Open		
Secretary	Carol Melton	AF7N	ak7n@azsnaps.com
Treasurer	Arnold Knack	KA7AOK	ka7aok@gmail.com

TriCity ARA, P O Box 6293, Goodyear, AZ 85338-6293. DUES: \$18.00/yr. for individuals, \$25.00 for family. Web Site: <http://n7tca.org>.



Please be sure your club has your current email and/or mailing address.



**Armed Forces Day
May 19th**

The *Arizona Desert Aire Waves* is published monthly and is the official news media of the sponsoring clubs. All news items, articles and inquiries should be submitted to each club's editor. Any information and opinions printed herein are those of the contributors and are not necessarily those of the sponsoring clubs. Full permission is granted to quote from this publication providing credit is given to the individual contributor and the ADAW. ALL RIGHTS RESERVED. **Deadline is 10th of the month**

ADAW Staff

PUBLISHER / MANAGING EDITOR

Christine Kesauer	N7PVL	602.843.0960
AARCEDITOR		
Lori Cripps	WA7EDI	602.955.7517
ANSREEDITOR		
Steve Miller	W6SDM	602.290.1603
ARAEDITOR		
T D Kennard	N7ISR	n7isr@w7ara.net
ARCCCEDITOR		
Mark Kesauer	N7KKQ	602.318.2920
CADXAEDITOR		
Lee Finkel	KY7M	ars-ky7m@cox.net
CARLEEDITOR		
Jean Jolkovski	W4CIH	480.664.7353
MARAEDITOR		
Steve Miller	W6SDM	602.290.1603
MARCAEDITOR		
Norm Johnson	AA7OO	480.278.2886
MCCARCEDITOR		
Charlie Brown	NJ7V	602.529.4381
MMRGEDITOR		
Lori Cripps	WA7EDI	602.955.7517
OPRCEDITOR		
Ron Kalish	N7SPW	520.207.3852
OVARCEDITOR		
Ron Herring	W7HD	520.240.5322
QCWAEDITOR		
Tom Fagan	K7DF	520.574.1129
SARCEDITOR		
Ed Nickerson	WU7S	480.949.5162
SuperstitionARCEDITOR		
Larry Kuck	WB7C	l.m.kuck@gmail.com
TBARCEDITOR		
Andrew Cornwall	KF7CCC	kf7ccc@arrl.net
TRICITYARA		
Bob Nobis	N7RJN	n7rjn@nobis.net
WVARCEDITOR		
April Kramer	KI7GFJ	602.284.6312
YARCEDITOR		
Don Bauer	WB7TPH	dbauer2250@aol.com
TECHSUPPORT		
Mark Kesauer	N7KKQ	602.843.0960
ADAWEMAIL	adawaz@arca-az.org or adaw@adaw.org	
ADAWWEBSITE	www.adaw.org	

From The Editor's Desk

The April Hamfest at DeVry is over for this year and it was a great one! The weather was perfect! A little cool in the early hours, but warming up as the morning advanced. A breeze kept the temperatures comfortable in the sun.

Attendance was good. There were 64 vendors/tailgaters on the grounds with lots of different and tempting wares for people to look at, drool over, and take home with them. Just less than 300 attendance tickets were distributed with admission.

Refreshments of coffee, donuts, and sodas (water, too) were sold and were a big hit. It kept Lori Cripps, WA7EDI and yours truly really busy throughout the morning. Pots (and pots!) of coffee were dispensed, and nearly every one of the donuts found its way into a hungry visitor's hand. Sodas and water became popular in the later morning hours as the sun warmed up the crowd. It was suggested that we bring a grill and switch over to hot dogs and burgers around 10:00 AM. Hmm - does anyone know someone with a hot dog cart who might be interested in picking up some extra cash at a hamfest in April next year?

Volunteers at the gate were kept busy as visitors arrived. Each person coming through the gate was given a raffle ticket for the door prize drawings which were held approximately every hour during the event. You had to be there for door prizes, but several people walked away with a treasure from those drawings.

The list of grand prizes was impressive and ticket sales were brisk. Everyone who stayed until the 11:00 AM drawing crowded around the table as the tickets were drawn. Four lucky tickets were drawn and three of the four prize winners were present to pick up their prize and proudly take it home with them. Check Lori's column on the next page for her report on the event, a list of winners, and a photo of the AARC volunteers. Thanks to everyone who helped out! You made it great!

All in all, the 2018 April Hamfest at DeVry was a big success. Mark your 2019 calendars for next year's hamfest. No date has been set yet, but it is generally held around the same time each April. Hope to see you there!

The Cochise Amateur Radio Club will be holding their annual hamfest and communications exercise on May 5, 2018. The event is held at the club site on Moson Road in Sierra Vista. Check the hamfest calendar on page 11 and the flyer in the flyer file for more information. It's a small hamfest, but you'll find unusual items there - ones you won't find at other events. Check it out.

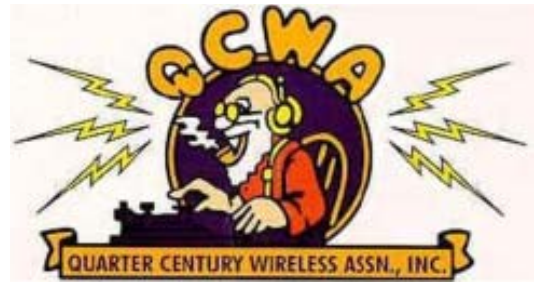
Til next month - 73 & Have a Great Day!
Chris, N7PVL

Happy Mother's Day!



ADAW

ADAW



**CHAPTER 16
BARRY M. GOLDWATER ARIZONA CHAPTER**

The Arizona Amateur Radio Club had its 2018 hamfest on the DeVry University grounds in the south parking lot on Saturday, March 14. Members were attired in their new orange shirts (see the photo) ordered for the group by Chris Kesauer, N7PVL, who made a special effort to put the club logo on the shirts. Very nicely done!!

The hamfest was well attended by both tailgaters and walk-in amateur radio enthusiasts. Lucky prize winners included grand prize winner Robert Hansen, NA7RH of Scottsdale, who won the Kenwood TM-V71A VHF/UHF Mobile Transceiver; Paul Finell, W7EFQ of Scottsdale, who received a Wouxun KG-UV980H Quad Band Mobile with 4-band antenna and mag mount; Jack Koeckes, KC7DUU of Yuma, who won the Yaesu FT-2980R VHF 80W Mobile Transceiver; and John Keedy, KC7DJM of Peoria, who was the winner of a TigerTronics Signalink SL-USB-8PD USB Sound Card & Radio Interface.

DX QSL Card Checking was available by Reinhard Geissler, K7RGG. Coffee, doughnuts, and assorted soft drinks were available for sale. Amateur radio license testing was provided and resulted in one technician and three amateur extra licenses being granted.

Friday night, those who were working to set up for the big event were treated to a delicious surprise dinner provided by member Roger Bram, KE0BQQ. It was much appreciated by all. Certainly everyone appreciates an opportunity to buy new equipment or to sell equipment they no longer need, but more important, a hamfest like the AARC Hamfest at DeVry is a chance to renew old acquaintances and spend the day with friends.

The Arizona Amateur Radio Club meets the second Thursday of every month at 7:00 PM at the American Red Cross Building at 4747 N. 22nd Street in Phoenix and has a weekly 2-meter net every other Thursday night at 7:00 PM on 147.060.

73.
Lori, WA7EDI

Have you been a ham for at least 25 years? Then celebrate by joining the Quarter Century Wireless Association!

The Barry M. Goldwater Chapter 16 Arizona chapter has four lunch meetings a year with fabulous speakers. Check us out at <http://www.azqcwa.org> we are also on Facebook at <https://www.facebook.com/AZQCWA> We are always looking for speakers and great lunch locations. Let us know.

John Marshall, WA7BSR, President
QCWA Barry M. Goldwater Chapter 16 Arizona
wa7bsr@gmail.com

ADAW



ADAW



The AARC Hamfest Crew in their orange shirts



One of our Tri-City ARA members, Barry Winters – K7BAW, is profoundly hard of hearing, and has volunteered to share his story of how he has been able to remain an active ham using Apple Computers and FLEX Systems Software Defined Radios (SDRs). His story follows. Bob Nobis – N7RJN.

When one is profoundly hard of hearing and like to use a software defined radio (SDR), there are some interesting challenges if you are also an Apple Macintosh person. Shortly after becoming a ham, I realized that phone was not going to work for me, so I got into digital modes and that is where I work HF. Since digital requires a computer, I was led to the world of SDR and purchased a Flex 3000. That worked very well with my personally built Windows OS computers. I had owned Macintosh computers even before I became a ham, but became very interested in trying to work digital mode (PSK31) on a Mac as I slowly switched my personal computer systems to Macintosh.

Since the Flex would only operate on a Windows system, I had to either use a standalone Windows box or run Bootcamp on a Mac and reboot when I wanted to operate my radio. Virtual machine software would not work because none of them supported Firewire, the connection used between the computer and the radio. I ultimately set up a MacMini running Windows via Bootcamp just for amateur radio use. That still required that I have two computers: one for radio and one for everything else.

Then Flex Radio Systems released the 6000 series radios along with a new operating system. The radios were significantly different in their connectivity as well as in what hardware did what. Essentially the radio regained some its processing functions and changed its connection to Ethernet thereby becoming a network device. However, it was/is still a Windows-based device, and I continued to want to do my ham radio work on a “pure” Macintosh computer.

I took a side path for a while by using an Elecraft KX3 with a Signalink interface and Fldigi software (comes in several OS flavors and is updated regularly). That gave me excellent results and remains as my out-of-the-shack system as I can run everything on battery for an extended period.

In 2015, Don Agro of Dog Park software released a native Mac subset version of SmartSDR the Flex 6000 series OS. It is dogparkSDR (www.dogparksoftware.com). In late 2016, I purchased a Flex 6300 and the software from Dog Park. To

Continued Next Column

SARC CONSTANTS:

SARC is a 501 (c)(3) club. That means all donations are fully tax deductible. Contact Paul Jorgenson, KE7HR at 602.992.8043 for information on estate donations and equipment pick-up.

For membership information, call Judy Jensen, KE7IXI at 480.773.8452. Please send address change requests to Judy no later than the 7th of the month in which you would like the change to occur.



ADAW

TCARA Continued from Previous Column

make FLDIGI work, I had to add in a third-party software route the audio in/out of the radio and the computer and the digital software (I now use Loopback).

The world of amateur radio is wide and diverse. I applaud that and encourage people to find the path that meets their needs. I learn a lot from talking with others even though I may never do what they do. To me ham radio is about meeting and talking with people even if all we do is exchange basic contact info. I have found a combination of hardware and software that enables me to meet the needs that brought me into the hobby.

73 de K7BAW
Barry Winters



CARL Continued from Previous Column

accepted, on behalf of C.A.R.L., a plaque showing the details. If all the ones and zeros line up, there should be a photo of that plaque at the end of this newsletter. If you wish to view the original, visit the W7ASC station where you will see it hanging on the awards wall.

There are still some openings for volunteers at the station. An Application can be found on the W7ASC web site. Sam N7INV maintains the volunteer schedule. Questions? Either call the Shack directly, or contact Bob KG7QJ at 480-961-1109 or kg7qj@cox.net. When you apply, that triggers the approval cycle. Once approved, you can fit your volunteer time to your own convenience. There is no up front commitment! If you enjoy talking to complete strangers about Ham radio and communication technology, you will love the volunteer experience.

As always, your comments/criticism is welcome/ have a ham radio story that would like to share? Tell us how you got started in Ham radio? Send whatever you wish to your faithful scribe W4CIH, at jeanjol@hotmail.com or phone 480-664-7353

Until next month, we wish you good DX
de W4CIH 73



May will see the closing of the Pompeii exhibit at the Arizona Science Center. We mention this in the Ham Shack newsletter as this exhibit has contributed to the seriously increased visitor traffic to the Station. We have not kept count, but we seemed to be visited, on a daily basis, by Hams who were either from out-of-town, or even from Arizona, but were not aware of the existence of the Harkins Ham Shack. It was rewarding to chat with a visitor who mentioned that they had once been licensed, but has allowed that license to expire. Many times, the volunteer on duty pulled up QRZ.COM to find that the expiration was fairly recent. That license was still within the grace period and could be renewed. A sizeable number of those expirees planned to renew without further delay. The station probably should have kept a count of these rescues, but we never anticipated that so many would be visiting the station. Thank you, ASC and that Pompeii exhibit!

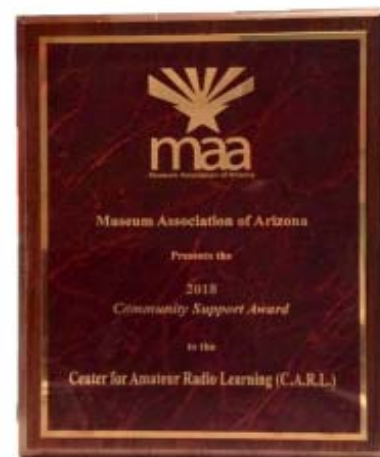
Last month we shared with you the story of the tiny girl who surprised us by announcing that she had her ticket. There are some really smart youngsters out there! Here is another anecdote about a young girl and a license.

One of the longtime volunteers at W7ASC has a daughter who earned her first license at age 10. She, too, was a volunteer at the station, although the Science Center had to be convinced that a ten-year-old could actually perform the duties of a volunteer. Now time marches on. That same little girl is now attending college, majoring (surprise) in engineering and math. As part of her curriculum, she was assigned to do research on WiFi. An engineering professor was the mentor to the project. At a first meeting, the professor started to brief this student on radio waves, antennas and propagation. The subject of this story asked the professor if it would save time if he were to be made aware that she held an Amateur Radio Extra class license. The professor closed his notes and exclaimed that such information would, indeed, save both of them some time.

Moral: do not allow your license to expire. One never knows when it might come in handy.

This bit of news is, we think, a really BIG DEAL! Totally unsolicited and “over the transom” came an award for “Community Support” to C.A.R.L., the organization that operates W7ASC, from the Museum Association of Arizona! C.A.R.L. President Jack Landon KD7ROB was summoned to an awards luncheon, held on Monday, March 26, where he

ADAW



Continued Next Column



STATION GROUNDING

By Erv Heimbeck, K00TZ

We frequently talk about grounding, but how many of us have actually looked at the National Electrical Code (NEC) to explore what the code documents as proper grounding. But first, a few questions and comments about the topic.

Why do we ground our station?

1. There are many answers to that but many people we think of lightning protection first. This is a major reason for grounding our station but it is not the only reason.
2. Electrical safety is actually the primary reason. All equipment should be powered with a three-prong plug. The third prong is the ground. It is for safety and normally does not carry any current. It is there in case there is a malfunction in the equipment. If there is something wrong with the equipment, the third prong will prevent the operator from getting a shock when he touches the metal chassis of the equipment.
3. Another important reason is to drain any static electricity to ground so it does not build up. This is especially important in antennas that are not at DC ground. The static charge will build to the point that it will discharge thru the ham gear which can cause some damage. It is not a lightning strike but it is still an arc to ground. It also caused noise in the receiver which can be very irritating. This frequently referred to as snow or rain static.
4. Grounding equipment will provide a path to ground for stray RF, which can be on the equipment if the SWR on the antenna feed is high enough. In fact, it is not uncommon in HF mobile installations for the microphone to be hot for RF. I have been on the receiving end of this with a metal microphone and the burn on the lip when talking is unpleasant to say the least.

Bus Bar - Connections - Grounding Rods

All radio equipment should be bonded together through the grounding lug normally found on the back of the equipment. Ideally all of these lug connections will be run separately to a

ARA Continued from Previous Column

grounding bus bar at the station. This bus bar should be installed with a heavy gauge stranded wire to the outside and connected to a series of ground rods.

Why stranded wire? This provides more surface area which is needed because some types of static electricity is conducted on the surface of the wire. An important note here is that the NEC also requires that the station ground network should also be bonded to the Power ground that is connected to the main electrical panel.

Because of the nature of the soil in many areas, multiple 8 foot ground rods all bonded together should be used. The ground rods should be a minimum of 3 feet apart

How can we protect ourselves and our equipment?

Ground the antenna leads when they are not in use. The easiest way to do this is to use an antenna switch which shorts all unused outputs and has a position where no antenna is connected. Make sure you connect this switch to your ground bus bar. I have also known hams who will just disconnect the coax from everything. This will protect the equipment but will not necessarily ground the antennas. Grounding the antennas provides a path to ground for static build up and helps in preventing a direct lightning strike.

This is just a short article regarding several aspects of station grounding. One book I highly recommend is Grounding and Bonding for the Radio Amateur. This book is published by the ARRL and has abundant practical information in it.



Real Estate

*Are you or someone you know looking for a Ham Home?
I can help you find a home with a tower or one where a
tower can be added. Call or email me to get started.*

*Richard Haworth W7MDQ
Coldwell Banker Residential Brokerage
602-370-1450 Cell, rahaworth@cox.net*

Continued Next Column

Hamfest Calendar

7 May 2016 - **Cochise Hamfest** - hosted by the Cochise Amateur Radio Association will be held at the club site, 2756 S Moson Road in Sierra Vista. Hours are 7:00 AM until 12:00 Noon. An Open House demonstration of amateur radio communications will be held. VE Testing Available. Prizes. Breakfast and Lunch will be for sale for a reasonable price. Contact Lee Ilse, KD7OED at kd7oed@arrl.net for more information.

1-2 June 2018 - **2018 Prescott Hamfest at ERAU** - hosted by the Eagle Amateur Radio Club at ERAU and the Yavapai Amateur Radio Club will be held at Embry Riddle Aeronautical University (ERAU), 3700 Willow Creek Road in Prescott. Hours are 7:00 AM to 4:00 PM on Friday and 7:00 AM to 3:00 PM on Saturday. Tailgating, Commercial Vendors, Youth Activities, Special Event Station, Prizes, Food Concessions, Seminars, DXCC Card Checking and more. Limited Free RV Dry Camping on Thursday and Friday nights (must pre-register). General Admission - \$5.00 good for both days. Full Time Student with Student ID and 12 years and under - Free. Tailgating - \$10.00 first parking space, \$5.00 each additional. Indoor Commercial - \$20.00 first table, \$10.00 each additional. Talk-In Frequency - 146.880 MHz(-) PL 100 Hz. For more information, visit the website at www.prescotthamfest.com or email Hamfest Chairperson - Frank Bender, K8FB at k8fb@w7yrc.org

28-29 July 2018 - **Hualapai ARC AutoShow/Hamfest** - hosted by the Hualapai Amateur Radio club will be held in the Cerbat Lanes Parking Lot, 3631 Stockton Hill Road in Kingman. Hours are 8:00 AM til ?? For information, contact Bill Beaman at 928.718.1139.

28 July 2018 - **White Mountain Hamfest** - hosted by the Kachina Amateur Radio Club will be held at 932 Woodland Road in Lakeside. Overnight camping may be available. VE testing, Demonstrations, Hourly and Grand Prizes, Tailgaters, and Coffee and Donuts. Further details to follow. Visit the web site at www.kachina-arc.org and click on "Hamfest" for up to date information.

29 September 2018 - **Tucson Fall Hamfest** - hosted by the Radio Society of Tucson will be held at the Target Store, 9615 E Old Spanish Trail in Tucson. Hours - 7:00 AM - 11:00 AM. Seller setup starts at 6:00 AM. \$10 per space. Free Admission and Parking. Free VE Testing - GOTA Station - QSL Card Checking - Prizes. Coffee, Tea, and Donuts will be available. For Information & Map, visit <http://www.k7rst.org>

27 October 2018 - **Copafest 2018** - hosted by the Maricopa Amateur Radio Association will be held at the UltraStar Multitainment Center, 16000 N Maricopa Road in Maricopa. Hours are 7:00 AM until 1:00 PM. Admission is \$5.00. Spaces are \$10.00 for two parking spaces. Setup begins at 5:00 AM. Balloon Launch, VE Testing, Card Checking, Vendor Exhibits, Seminars, Prizes and more. Many activities available in the

Multitainment Center including laser tag, bowling, movies, games, dining and more. Dining and Hotel also available. For information, email fest@copafest.org or visit the website at www.copafest.org.

10 November 2018 - **HARKFEST** - hosted by the Hassayampa Amateur Radio Klub will be held at North Ranch Escapees RV Park, 30625 S Hwy 89 in Congress. Free Admission, Free Tailgate Sites (Pre-Registration Required - djgrooms@yahoo.com) Overnight Camping (Full Hook-Up or Dry) Available (pre-registration required for camping at www.escapees.com/parking/congress) Tailgating permitted at campsite. VE Testing Available upon Request - Prizes

10 November 2018 - **Oro Valley Hamfest** - hosted by the Oro Valley Amateur Radio Club will be held at Marana Middle School, 11285 W Grier Road in Marana. Gates open at 7:00 AM (5:00 AM for sellers) and closes at 1:00 PM. Admission: \$5 (Children under 12 free with a paid adult). Students with AZ School ID are free. Sellers: \$10 per space and includes seller. Prizes, VE Session, Seminars, QSL Card Checking, Breakfast & Lunch Available. Talk-In: 146.620(-), 444.100(+), and 147.32(-) all PI 156.7. For more information, please visit the web site at orovalleyarchamfest.com or send an email to hamfest@tucsonhamradio.org for more information

1 December 2018 - **Superstition SuperFest 2018** - hosted by the Supersition Amateur Radio Club will be held at Mesa Community College, 1833 W Southern Ave in Mesa. Hours are 8:00 AM - 4:00 PM. Admission is \$5.00/person (includes 1 door prize ticket) and children 12 and under free. Tailgate is \$10.00 for 2 spaces which includes 2 paid admissions tickets. VE Testing will be available. Registration is from 8:00 to 9:00 AM with testing beginning at 9:00 AM. ARRL Card Checking, Special Event Station, GOTA Station, Fox Hunt, Prizes, Live Music, Food Vendor, and Drinks will be available. Contact the Hamfest Chairman at chairman@superstitionsuperfest.org for more information.

12 January 2019 - **Thunderbird Hamfest** - hosted by the Thunderbird Amateur Radio Club will be held at the Northwest Community Church, 16615 N 43rd Avenue in Phoenix. Hours are 8:00 AM to 12:00 Noon. Open to Vendors at 7:00 AM. Vendors may set up Friday night after 5:00 PM. General Admission - \$3.00 per person. Vendor and Tailgate Swap - \$10.00 per parking spot. Seminars - Door Prizes. VE Testing from 10:00 to 11:30 AM. Snacks and Beverages will be available for purchase. Visit the TBARC web site at www.w7tbc.org or email hamfest@w7tbc.org for additional information.



We had an interesting meeting in April with Dr. Jonathan L. Kramer, W6JLK, a telecommunications attorney from California. As someone who generally works “for the other side of the counter” with county and local governments on tower and antenna regulations, Jon gave us some excellent suggestions on how to approach tower permits. He also gave us more background on PRB-1 and related guidelines than many of us had heard before.

On the DX front, activity waned in April with the only major DXpedition being 3B7A on Saint Brandon Island in the Indian Ocean. This French team has given us several other rare ones in recent years. Unfortunately, conditions to Arizona were poor most of the time they were on the air and propagation was limited to only a few bands.

Get your 6-meter station ready for Sporadic E season. It should be in full swing in May. Expect plenty of activity on the digital modes. They took over the band last year and I anticipate we will see even more people on the digital weak signal modes this year.

Next Meeting is the Annual Barbecue on May 3rd at the PERA Club at 6:00 p.m.

We will meet outdoors at the PERA Club picnic ramada for the May meeting. This is the annual club barbecue and we begin serving dinner at 6:00 p.m.. Our caterer this year will be Famous Dave’s Bar-B-Que. The meeting will follow dinner and our program will be presented by ASU Professor Chris Groppi.

It is fitting that we will be under the stars because Dr. Groppi is an experimental astrophysicist interested in the process of star and planet formation and the evolution and structure of the interstellar medium. His current research focuses on the design and construction of state of the art terahertz receiver systems optimized to detect the light emitted by molecules and atoms in molecular clouds, the birthplace of stars.

The dinner menu will feature brisket, chicken, pulled pork, and several “famous” side dishes. The cost is \$10 per person payable when you arrive. However, we must have your reservation in advance to have an accurate headcount for ordering the food (our cost is based on that number). Please make your reservation no later than April 26th by sending an

The news from MMRG is as usual very skimpy. We have no new members to report.

I did go to the AARC/ARCA Hamfest held at DeVry University Saturday, April 14. There were a lot of familiar faces there and a lot of them are MMRG members as well. I even met some MMRG eavesdroppers. I got the pleasure of spending some time with six different MMRG members that live in the valley the two days before the Hamfest. It is always great to see some that I don’t get to see as often as I would like.

73 to all
Bob Sitterley K7POF



Need Computer Help?

Computer consultant: in-home tutoring, problem solving, hardware and software installations, virus detection and removal. I am Patient and professional with 30 plus years in the computer field.

Call Larry, KE7JXQ
L.E. Purchase Computer Consultants, Inc.
1-888-922-9295 or 602-863-0502

CADXA Continued from Previous Column

email to the CADXA Treasurer, Alton Chaney, W7ACX, at w7acx.480@gmail.com. Guests are very welcome to join us for this event and we normally have quite a few spouses and friends in attendance. I hope to see you there.

73,
Lee, KY7M
CADXA President



Continued Next Column



If you've attended recent meetings, you'll know that we've been holding our annual membership drive. Everyone who has signed up by March 31 has been entered in the drawing for a gift certificate - by the time you see this we will have announced the winner. At this time, all I can say is that some lucky member will walk away with the prize. Hope it's you!

And this year, we've got new hard plastic badges. I know a lot of people got in on the first order. Unlike the previous paper and laminate badges, you'll need to order these from our membership chair, Clair Wyant KG7MAJ. Get in touch with him at membership@w7tbc.org - I believe we'll be ordering once every three months or so. These are 2-1/8" x 3-5/16" badges, and \$9.95 will get you one with either a pin or magnet back (your choice). See the picture, or come to the meeting and see the genuine article.

Facebook has been in the news recently, and not for the right reasons. If you haven't already decided to #deletefacebook, then you might be interested to know that the Thunderbird Amateur Radio Club does have a presence on Facebook at www.facebook.com/ThunderbirdAmateurRadioClub/. We promise not to steal your personal information!

Planning for the June Field Day outing continues - and if you'd like to help out, there will be plenty of opportunity! We are expecting to be at Jack's cabin in Flagstaff this year - which means we'll be running 4E (or possibly 3E or 5E). For more details or to volunteer, get in touch with Walt Reinert NJ8G at nj8g@w7tbc.org.

Gary Cline AF7BJ has been once again planning an August Escape to operate from other cooler locations this summer. If you'd like to get out of the heat in August, think about setting aside a weekend (date still to be determined) for operating up north at a campground. Get the details from ghcline@cox.net.

Have you been to a TBARC meeting yet? Why not stop by? We'd love to have you join us, and guests are welcome. Our meetings are held on the third Thursday of the month at the North Phoenix Campus of Northern Arizona University. It's near Greenway and I-17, starting at around 7:00 p.m. See the club website at w7tbc.org for directions. In May, the main presentation will be Emergency Communications by Reuben Kafenbaum WA2NBL. Reuben is active in the Civil Air Patrol. Are you interested in emergency communications from 10,000 feet? Altitude is one way to get a wide radio footprint. Join us and learn more!

Andrew Cornwall KF7CCC - kf7ccc@arrl.net

Public Service Calendar

Maricopa County Emergency Communications Group Events

EVENT	LOCATION	DATE
MCECG Picnic	Houston Mesa Horse Campground	05/12/18
Nat'l Disaster Medical Service Exercise	Various Hospitals Around Phoenix Area	05/22/18
Barn Burner Mtn Bike Race	Kendrick Peak N of Flagstaff	09/08/18
Tour de Scottsdale	Scottsdale	10/07/18
Xterra Estrella Mtn Trail Run	Estrella Mountain Park	10/07/18
Javelina Jundred	Fountain Hills	10/27/18
Phoenix Half Marathon	Downtown Phoenix	11/04/18
Xterra San Tan Trail Run	San Tan Park	11/11/18
AuxComm Interest	TBD	11/30/18
Scottsdale Half Marathon	Scottsdale Civic Ctr	12/09/18
Xterra - White Tank	Waddell	01/06/19
Pancake Run	Paradise Valley Mall	02/03/19
Xterra McDowell Mtn	Fountain Hills	02/03/19
Black Canyon 100K	Spring Valley to the Emery Henderson Trailhead	02/16/19
Xterra Black Canyon Trail Run	Black Canyon City	03/10/19
March of Dimes for Babies	Wessley-Bolin Park, Downtown Phoenix	04/13/19

To sign up for an MCECG Public Service Event: www.mcecg.net

For information, contact Dennis Bietry - KE7EJF at 602.274.3732 - email, ke7ejf@cox.net, or contact the Event Coordinator for the event.

ADAW





OVARC Continued from Previous Column

Speaking of repeaters, our D-Star SIG will soon be known as the Digital SIG as we are incorporating DMR through, what was once exclusively a D-Stat repeater network. More work is being done to build this out. Thanks go to Gary-KT7AZ, Jim-W5ZIT, Howard-KC7AC, Tom-W7TRA, and others in the Digital SIG.

73, Steve W1SR

OVARC continues to grow its membership and also its activity level. We have a total of three operating events just in the month of April.

On Saturday, April 7, the club operated remotely at the Avra Valley Airport where the Wings of Freedom event featured several World War II aircraft along with lots of other memorabilia from this time period. Roger, K7ROG put the event together and arranged for an excellent place for us under the tent. On Sunday, April 8, we held another Antenna Shootout put together by Paul, K7AZT. Several club members arrived at the test site sponsored by Tom, W8TK. Antennas were set up and testing began before the heat set in. This is a great way to compare the performance of different types of antennas. (See pictures)

All of the club's ham radio problems continue to be solved at our Saturday morning breakfasts at The View Restaurant in Rancho Vistoso. No one leaves hungry or without a solution to their issues.

On April 21 we will be operating from Colossal Cave to commemorate the Gadsden Purchase which was signed in 1853 and established the southern international border with Mexico.

Several more events are planned throughout the year. It would be great to team up with another club to hold a "joint event" at a notable location.

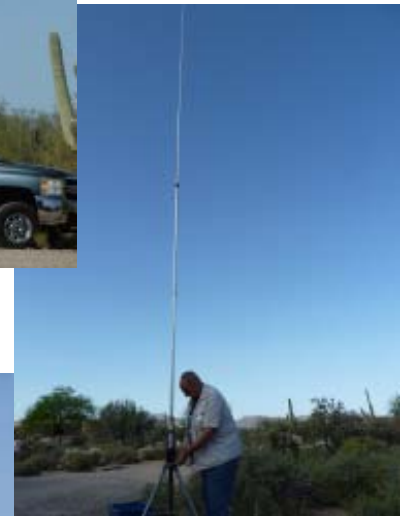
David, AK2L just completed another Technician Class. Students took their test on Saturday, April 7, at our regular VE Session and all of them passed. David's classes are excellent and we hope to schedule more in the future.

Thanks to the AV Production Team that makes our monthly meetings so popular. Carl-KB7AZ, Roger-K7ROG and Scott-K7ADX have put their expertise together to put on a professional presentation environment. With help from the campus expert, Leah, we now have the ability to do some high speed Skype presentations greatly improving the quality of remote presentations.

In May several members will head off to Dayton. Someday we'll get smart and consider a charter from Arizona. I'm sure we could all fill an airplane to the event. Our Field Day plans are well underway too.

Please check into our Sunday evening net. It's short and informal and is typically no more than 30 minutes long. It's at 8:00 PM Sunday evening on any of the OVARC repeaters.

Continued Next Column





ANSR Continued from Previous Column

pollutants at altitude. These included SO₂, NO₂, O₃, and solar radiation.

There were a few glitches assembling the payloads, however. Due to a lack of experience, time, and resources, the students were not able to collect data on the many of the experiments they sent up in their payload. The sulfur dioxide, nitrogen dioxide, and ozone experiments had problems logging data.

The Carbon dioxide and radiation experiments did obtain some useful data. The students intend to participate again next year, doing the same experiments, but starting earlier. They are dedicated to learning more about programming through the summer. We all plan to stay in touch and continue working with them in the next academic year.

As far as payload recovery goes, the school van was able to get within a mile of the landing site. From there, students reached the site with a combination of hiking and rides from ANSR Chase Team members.

ANSR considers it an honor to work with the various colleges and universities in Arizona and hopes that our participation as radio amateurs will contribute to the education of our future scientists and engineers.

By Steve Miller, W6SDM

Even though you live in Arizona, you may not have heard of Dine' College. It is a four-year, tribally controlled college. It opened in 1968 as the "Navajo Community College." It's the first college established by and for Native Americans.

Dine' College serves a predominantly Navajo student population across the 26,000 square miles of the Navajo Nation that spans across the states of Arizona, New Mexico, and Utah. The College offers General Education courses that provide students with Certificate, Associate's, and Bachelor's degree programs in Art, Business, and STEM programs.

Arizona Near Space Research, as part of the Space Grant Consortium, has been supporting Dine' with high altitude balloon flights for the last five years.

ANSR members gathered the day before the flight to help the students with final configurations. That afternoon, ANSR held an outreach presentation.

ANSR-117/Dine'-05 flight launched March 28 at 10:00 AM MDT from Wheatfield's Lake. Team members described it as one of the most picturesque Launch sites we have ever. After watching the balloon burst at 91,369 feet from Sheep Springs, New Mexico, students and ANSR team members were able to drive to within 400 feet of the landing site at 35°54.89' N 108°44.28' W.

Participating Students were Cordell R. Chee, Stephanie Moses, Byron Shorty, Shawn Laughter, Zachary Beaver, Kyle Goh, Zoey Yazzie, Jamie Begay, and Lynshell Begay.

Dine' College Advisors were Juanita Frances (Faculty, Math Physics, and Technology Division) and Velma Hale (College of Fine Arts, Humanities and English Division).

Additional mentors were Kathleen Stigm (Northern Arizona University), Paul Ronquilo (Arizona State University), and Amy Gladwin (University of Arizona student intern)

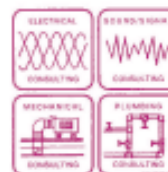
Five student payloads were flown. The students began working on their payloads in February and they did not have anyone at the college that could directly teach them how to program the Arduino's to collect data from the sensors. With the help of Paul Ronquilo from ASU, they did get some training, however it was very difficult for them to learn everything in such a short time. Additionally, when they needed additional parts, it was difficult to get them in a timely manner because they live in such a remote location. The payload experiments were expected to measure atmospheric

ADAW



Happy May Day
Tuesday, May 1st

R.J. CARLI ENGINEERING CORP



7311 E. STETSON DRIVE
SCOTTSDALE, ARIZONA 85251

RAYMOND J. CARLI, P.E.
ELECTRICAL ENGINEER
W7GNE

(480) 941-8810 (OFF)
(480) 945-7020 (FAX)

If anyone is considering a major radio shack, workshop, addition or going into business for yourself, I am offering professional Electrical, Mechanical and Plumbing Engineering services to radio club members at a 20% discount for residential property, and 10% discount for commercial property. Talking is always free.

Continued Next Column

License Testing Information

When you are ready to take an exam for an Amateur Radio license, there are Volunteer Examiners available to assist you. Each Applicant will need to bring a picture ID (some test sessions require two forms of identification). If you are upgrading your class of license, be sure to bring the original (and a copy) of your license and/or Certificate of Successful Completion of Examination (C.S.C.E.). There may be a fee required.

PLEASE NOTE: Dates, times, locations, fees may change. Arrive promptly at time listed. Fees may vary and exact change or check is required at most sessions. Call test session contact to confirm information. Walk-ins are permitted unless otherwise specified.

May Test Sessions

- May 3rd** - PV Ham Study Group -- 6:30 PM
 Trinity Lutheran Church, 3950 N Valorie Dr, Prescott Valley
 Contact - J M Scherfling 928.632.2050
 No Walk-Ins - Call to Pre-Register
- Mar 3rd** - CARBA -- 7:00 PM
 Lighthouse YMCA, 2900 N Columbus Blvd, Tucson
 Contact - Matthew Grossman 520.750.7189
 Pre-Reg by email preferred - veregistration@rstclub.org
- May 5th** - Oro Valley ARC -- 10:30 AM
 Oro Valley Police Dept EOC, 1920 E Tangerine Rd, Oro Valley
 Contact - Quinton Gleason licensing@tucsonhamradio.org
- May 5th** - DeVry ARC & WVARC -- 9:00 AM
 DeVry University Library, 2149 W Dunlap Ave, Phoenix
 Contact - David Morrill 623.680.5011
- May 14th** - Radio Society of Tucson -- 7:00 PM
 Hardesty Mid-Town Police Bldg, 1100 S Alvernon, Tucson
 Contact - Diane Zimmerman 520.664.5070
- May 16th** - Thunderbird ARC -- 6:00 PM
 Honor Health Medical Office Bldg, 19841 N 27th Ave, Phoenix
 Contact - James Skinnell 602.826.1949
- May 19th** - Unsponsored -- 10:00 AM
 Kingman Fire Station #1, 2470 E Butler Ave, Kingman
 Contact - Daniel Miller 928.897.3883
- May 19th** - Hualapai ARC -- 10:00 AM
 Northern Arizona Fire District, 2470 E Butler Ave, Kingman
 Contact - Alyce Ingle 425.234.9173
- May 19th** - Yavapai ARC -- 9:00 AM
 Jeep Posse Bldg in Pioneer Park, 1200 Commerce Dr, Prescott
 Contact - Donald Bauer 928.775.4690
 Pre-Register online: www.w7yrc.org

Old Pueblo Radio Club INTERMOD

President's Column

No Report Received

<i>OPRC Repeaters</i>			
146.66	- PL 110.9	wide coverage	W7GV
146.82	- PL 110.9	wide coverage	W7GV
<i>RACES Repeaters</i>			
145.150		packet/wide	N7OEM
146.880	- PL 110.9	wide coverage	N7OEM
147.300	- PL 110.9	wide	N7OEM
448.55	- PL 110.9	wide coverage	N7OEM



Test Sessions Continued from Previous Column

- May 21st** - East Valley VE Team -- 6:00 PM
 City of Mesa Utilities, 640 N Mesa Dr, Mesa
 Contact - Fred Bolinger 480.242.8606
- May 26th** - Arizona ARC -- 7:00 PM
 American Red Cross, 4747 N 22nd St, Phoenix
 Contact - Gary Hamman 602.996.8148
 No Walk-Ins - Pre-Registration Required by Friday night



Continued Next Column



Superstition Continued from Previous Column

The Retevis RT7 handheld radio runs 3 watts on 440MHz UHF with 16 channels for the \$1.00 drawing. Matt, KI7EPD (right) was the lucky winner! Congratulations Matt!!



New FUSION Repeater on 448.275!

We now have a Fusion Repeater online at Utery. The repeater is on permanent loan from a club member. [Ed. Note: THANK YOU for your generosity!]

448.275 is running in Auto-Auto mode. This means analog FM users and FUSION users can use the repeater. Only one mode will be active at any time.

PLEASE allow analog users unrestricted access. If there is a FUSION QSO in progress and an analog user jumps on, please go analog on your FUSION radios.

Analog only users, please enable tone squelch/encode and decode. This will prevent you from hearing the digital QSO noise that your radio cannot convert back to speech. Also, the repeater does not have a courtesy tone. If you have any questions please reach out to Tech@SuperstitionARC.org with any question/comments/concerns. This includes if you have any questions on how to make your analog radio not open the squelch during a FUSION QSO.

FUSION users, the DG-ID is 00. There is not a Wires-X or IMRS connection at this time. It is recommended to upgrade to the latest firmware and DSP available from Yaesu. Please reach out to Tech@SuperstitionARC.org with any questions or issues.

Even though ID'ing is done automatically in FUSION for you, please ID just like you would when analog.

Thanks, – Dan Karnes – W7TWR – Tech Committee

Superstition SuperFest Saturday, December 1, 2018

SuperFest will open at 8:00 AM and remain open all day until 4:00 PM.

Ticket sales are OPEN right now at SuperstitionSuperFest.org and sell for \$2.00 each for the Main Drawing. And you need not be present to win these prizes, either.

SuperFest Main Drawing Prize List

First Prize: Yaesu FT-991A: All-Band Transceiver.

Second Prize: Icom IC-7300 HF/50MHz Transceiver

Third Prize: Icom IC-7100 HF/VHF/UHF Transceiver

March Club Meeting Prizewinners



The Yaesu FT-2980R 2m VHF single-band Mobile has a massive heat sink capable of running 80 watts without a cooling fan, with three additional power levels, 30, 10 and 5 watts. Would hardly ever need the 80W setting in town! The lucky winner was Wayne, KW7COB (right) on this \$5.00 drawing! Congrats Wayne!!

Jeff, N7CCW, is the Presenter.

Saturday, April 21 Club Picnic at Red Mountain Park Hummingbird Ramada

The Superstition Amateur Radio Club Picnic will be: Saturday, April 21st from 11:00-14:00 MST at Mesa Red Mountain Park – Hummingbird Ramada. Take the east entrance off Brown Rd. Hummingbird is the last ramada set in a ways to the right, next to the pond.

It is 30 to 40 yards from the parking lot with easy access for wheelchairs, scooters, and walkers.

The club will provide hot dogs and hamburgers and condiments. This is a pot luck outing and we ask that you bring a dish. Please make sure you let Andy, KD4ABB know what you are bringing so we don't end up with 10 bowls of potato salad. – Superstition ARC Communicator

Tuesday, May 15 Club Meeting, 7:00 PM

The 1st of May is a Tuesday, and that puts the third Tuesday “one week earlier” than many expect when looking at a paper wall calendar. Please check carefully the date and arrive on the 15th.

We will be discussing an HF antenna build. There will be an antenna build on the following Saturday, May 19. Please check the Wednesday night net at 8:00 PM and the website for further info. This we know, however: Two lucky souls will be carrying home a brand-new radio on the \$1.00 and \$5.00 drawings at the May meeting. Count on it!

ARRL Field Day is always the 4th weekend of June (not always the last)

--From the April President's Corner by President Steve Estes, KB7KWK, in his words:

“Welcome to Spring, or should I say Summer? It is already warming up as you all know and that means it is time for the club to

Continued Next Column

Continued on Page 18

Superstition Continued from Page 17

start planning for Field Day. For those of you who are new to the club, we always go up into the cool pines of the Payson area for Field Day. This year we will be going back to the Lost Eden ranch up above the Clint's Well area. This is a great spot for our Field Day because it is private property and only our club will be there. That means we do not have to go up early and try to find a place for the event.

For those of you who do not know, Field Day is June 23rd and 24th. We have a lot of fun at this event, not only to make contacts, but just to hang out camping and talking to each other. I hope to see lots of people there this year."

Further excerpts from April President's Corner

"You have heard me and other club board members talk about gearing all club programs towards new hams. At our March meeting we had a program consisting of a panel of Elmers to answer all your ham radio related questions. It turned out to be a great meeting with not only new hams asking questions, but we also had a lot of questions from hams who have been around a while. I had a lot of people come up to me after the meeting to tell me how much they enjoyed the presentation.

The April presentation will be given by Brian Betz, W7JET. Brian will be talking about SOTA (Summits On The Air). SOTA is a ham radio activity where hams carry very little equipment and hike to the summits of mountains and make contacts with very little power. Brian will explain what SOTA is and the different types of equipment that you need before you hike up a mountain.

Remember our club picnic will be on April 21st at Red Mountain Park in East Mesa from 11:00 AM to 2:00 PM at the Hummingbird Ramada. [Please see Picnic details above – Ed.]

We have had some poor numbers on the Wednesday night club net. We would like to remind all of you to join in on the nets. The club net starts at 8:00pm each Wednesday and is a good place to get caught up on club news and events. It is also a great place to ask questions about ham radio. There is always an Elmer listening that can answer questions for you. If the check ins do not pick up, we may decide to try moving the net to Sunday evenings. The thought is that maybe more people have time to check into a net on Sunday evening. We will see how things go for a couple of more weeks at our normal net time. Remember also that Amateur Radio News Line is played each week one half hour before the club net." (Concludes President's Corner)

Easter Sunday on April Fools' Day Trivia

Here, as we observe Easter Sunday on April Fool's Day, I am setting out to write the May column. Just out of curiosity, how often does Easter fall on April 1 anyway?

From my research, it's happened once every eleven years for short spurts and large gaps between. For instance, after the April Fools' Easter Sunday in 1804, it happened in 1866, '77 and '88. The next April 1 Easters were 1923, '34, '45 and 1956 and not until 2018, did Easter Sunday fall again on April Fools' Day. 2018 begins another 11-year cycle, including '18, '29 and '40. The next one will be next century.

Easter Sunday follows the first Full Moon after the vernal equinox (first day of spring in the northern hemisphere, on or about



No Report Received

ADAW

Superstition Continued from Previous Column

March 21, when the sun crosses the equator). Ash Wednesday is 46 days before Easter, so in 2018, that religious holiday coincided with St. Valentine's Day (and Arizona Statehood Day).

73, Larry Kuck, WB7C, for Superstition ARC's part of ADAW

ADAW

Superstition ARC Repeaters

147.120 MHz (+) 162.2 Hz - Usery *
448.275 MHz (-) 100.0 Hz - Usery - FUSION
449.600 MHz (-) 100.0 Hz - East Mesa *
KB7KWK-L Echolink Node 538499 *
* - Linked Full Time

Club Nets

Morning Drive Time Net: Mon-Fri, 7:00-8:00 AM - Trivia
City of Mesa CERT Team Monthly Net: First Tuesday of month, 7:00 PM

Weekly 6 Meter Sideband Net: Wednesdays, 7:00 PM on 50.140 MHz, W7ASL-L EchoLink, and 145.575 FM Simplex

Club Net: Wednesdays, 8:00 PM - Discussion, Elmer Q&A.

Mesh Information Net: Thursdays, 7:00 PM

10-Meter Rag Chew: Thursdays, 8:00 PM, 28.465 MHz USB

Club Membership is open to anyone with an interest in Amateur Radio. Visit: <https://superstitionarc.org> for more information.

Superstition SuperFest

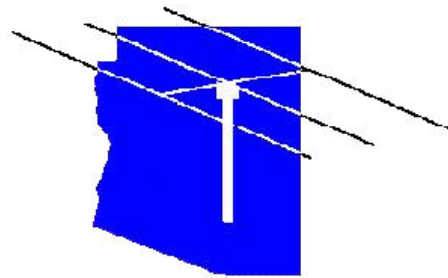
The Superstition SuperFest is held on the first Saturday of December. Visit www.superstitionsuperfest.org for the latest information.

Continued Next Column



Arizona Red Cross Communications Club

4747 N 22nd St. - Suite 100 - Phoenix, AZ 85016
VHF – 146.84 MHz – PL 162.2 / UHF – 446.900 MHz – PL 131.8
Echolink Node #731289 – K7ARC-R



MARCA INC.

We would like to welcome Roger Bram, KE0BQQ and Doug Besemer, K0VPL back as active members of the Red Cross and the ARCCC. Both have been helping during our regular work parties at the Red Cross on Wednesdays. We have lots of projects, so we'll do our best to keep these two guys busy :)

This April, we moved our Echolink node to a stand-alone CPU. We were having issues running it on a "shared" computer. So hopefully, it will run 24/7 without the mysterious interruptions.

Winds in March and April did a number to our Cushcraft R7 Vertical. Seems it got detuned up and out of the amateur bands. However, with a couple trips to the roof, we think it's close to operational status.

The tech crew has been busy getting ready for the national emergency exercise coming up in late May. This looks to be a 4-day event, so all the stops are being pulled to support this mass-casualty drill.

Not only have some of the radios and antennas been updated in the Command Van, but we've taken it to a few Hamfests to show it off and to recruit new volunteers. Did you see us at Yuma and DeVry? We are fortunate to have this vehicle. It's the very last one in the national organization. So it's planning to receive lots of use.

Speaking of the Command Van, Charlie, N2TFS and Peter, KD7OIW drove it to Albuquerque, NM last week to deliver supplies and to scout out possible locations for antennas at the Red Cross Chapter there. The long-term goal is to have all the chapters in the AZ-NM-El Paso, TX region outfitted with radio communications on both Amateur and Red Cross frequencies.

Peter, KD7OIW and Larry, AA0LB have been busy working some HF digital modes as well as helping other members getting their setups working. We're calling Peter the (Hustler) Resonator King!

Don't forget about the PSARG net on Tuesdays at noon on our VHF repeater. It's also available on Echolink as well. You can check out the schedule on our website – www.k7arc.org.

Your Humble Scribe,
Mark, N7KKQ

No Report Received

ADAW



For Sale / Wanted



**LOOK!
Great Deals!**

A-4 Antenna For Sale - \$450

This is an older model that does not have the stainless steel hose clamps on the elements. It is the same size and has the same features as the modern A-4S. The mast mount plate is new, and some of the elements have been replaced with stock A-4S parts. The antenna is stock - does 10, 15, & 20 meters. It does not have the 40 meter add on. It is boxed and ready to go now. Contact: Bob Howard, W8RH at 520.709.6176 voice/text or email w8rh@live.com.

The **West Valley Amateur Radio Club** has radios and ALL kinds of supplies available for sale through the club. We get some old equipment that won't sell that will be added to the items for free. Contact: Ken Jenkins, WB6MMV at kjenkins5623@gmail.com or Bob Kettler WA6MIO at rdkettler@msn.com.

ADAW

ADAW



The Yavapai Amateur Radio Club encourages community members and those of other local clubs to join us for our monthly meetings. We continually strive to make our programs interesting by addressing as many facets of amateur radio as possible.

For those just getting started in ham radio, we offer bimonthly license testing, periodic classes and a club radio station. Information about classes and testing can always be found on the club website www.w7yrc.org under "Become a Ham."

The next scheduled license exam session will be on Saturday, May 19, 2018, at 9:00 AM. Because of the Prescott Hamfest (see below) we will have testing on June 1 at the fest and July 21 in the regular location. Our website also allows for pre-registration for the test sessions and classes. This is strongly recommended to reduce the time needed to register everyone at the door. There will be a test session on June 1, at the Prescott Hamfest. Please see the hamfest flyer for time. We have posted all the test sessions for 2018 on the website as well as the ARRL website, so you can plan ahead.

We had to postpone the start of the next General license class, so please check the website for the new dates.

Don't forget to put the Prescott Hamfest 2018 on your calendar. It is scheduled for June 1-2, 2018. This event keeps growing, and we have a full line up of great seminars planned. There will be two days of tailgating and great door prizes as well as several Grand Prizes, for which tickets may be obtained online at the hamfest website. We will be happy to see you there. Lest we forget, you may visit the Prescott Hamfest website, www.prescotthamfest.com for information or to see the list of Grand Prizes and purchase prize tickets online.

In addition to the Hamfest, June brings Field Day, which we will hold at the Jeep Posse location. And on June 30, we will, once again, remember the Granite Mountain Hotshots through our memorial station N7GMH. Contact us, and get a nice QSL Certificate.

Come join us for one of our monthly club meetings. We always meet on the 1st Thursday of the month at 7:00 PM. Please note that our meeting location has changed.

Beginning with the March meeting, our location is the Freeman Building in the Prescott Rodeo Grounds, 840 Rodeo Drive, Prescott, AZ 86305.



Emergency Communications Since 1961

SHORT SKIP

The West Valley Amateur Radio Club meetings will no longer be held in the St. Clement of Rome Catholic Church-Social Hall. Board members are attempting to obtain a new meeting location. Please check our new website for more information: <https://westvalleyarc.com>

The board meets the third Tuesday of the month at Tivoli Gardens, 12535 W. Bell Road in Surprise, at 7:00 PM. The Emergency Preparedness Group meets the third Monday of the month at 7:00 PM at Boswell Hospital. Club nets are held on 147.300 (tone 162.2) at 9:00 AM daily and Monday-Thursday at 8:00 PM. The Preparedness Net is held the second Friday of the month, on the NY7S repeater (same frequency and tone as above.) A weekly breakfast is held every Thursday at Tivoli Gardens, located at the same address as above, at 7:00 AM.

If you would like to mail us a membership form, our mailing address is: WVARC, P.O. Box 1573, Sun City, AZ 85372-1573. Dues are \$15.00/year for family residing at the same address and the membership year is January-December. Our email address is: suncitywvarc@gmail.com

New board members, as of April 1, 2018:

President: Gary Robin K9HDU
V. President: Ralph Nagle W9ADW
Secretary: April Kramer KI7GFJ
Treasurer: Tom Connor W7TLC
Director: Bob Paul KG7FIL
Director: Nancy Collins KG6QWW
Director: Manny Blanco KI7QLD
Director: David C. Putman W7DCP

ADAW

ADAW



MARA Continued from Previous Column

controller. As their name suggests, they use PWM, or pulse-width modulation to control the power from the panel to the battery. The PWM switching gets into the 12V line conducted into the radio, and it gets into the wires out to the panel, so it radiates noise into any nearby antenna, it is a double threat. All PWM chargers are noisy, so avoid them for this purpose.

The next type of charge controller is the MPPT or Maximum-Power-Point charge controller. These are more expensive than PWM type, often costing more than the panel, and are the most efficient, but they do use PWM internally to switch the current to the battery. Unless it is specifically designed to minimize RF noise, it will also be a problem for ham radio.

There is a third type of charge controller that does not cause RF hash across the spectrum, and it happens to be the cheapest and simplest of all. It is the basic hysteresis, or on-off type charge controller. You have seen these, these are the simple charge controller that you've seen at Harbor Freight, they also showed up on your Amazon and eBay searches, though most might be looking for a high-efficiency controller. What I learned that the difference in efficiency is not what it is about, it is the difference in noise. If you have to disconnect the solar panel or stop the battery from being charged because of RF noise, then it doesn't matter how efficient the controller is, you can't use it when you need it most while operating.

The hysteresis charge controller works by checking the battery voltage, and if the voltage is below some point, it connects the panel to the battery, as indicated by an LED. Once the voltage goes up above the maximum safe level, it turns it off, a different LED comes on saying the battery is charged. The time it takes to cycle between off and on depends on the state of the charge and on the load. The fastest it may switch is every once every few seconds. Each switch event might be detected by a little click you hear in the receiver. This is much better than the same thing happening a few hundred or thousand times a seconds, as in PWM. With the hysteresis controller, there is no extra noise during transmit because the higher current level required will lower the voltage a bit and force the controller to connect the panel continuously.

Does it matter which solar panel to use? Not so much, as wattage is wattage. But silicon crystal panels will be smaller than an amorphous panel for the same power. I use Renogy solar panels, a 50W panel costs about \$80 on Amazon. I use gel type batteries as they are spill proof, rather than marine deep cycle. The charge controller I have now, I got from Amazon, is the Potek 10-Amp/130-Watt 12-Volt Solar Charge Controller. It is about \$14.00 and can handle a 100W panel with ease. It has served me for a few field days with no problems, and no noise.

I asked Bob, N6YPE, to provide some information on solar power operation since he's done it at several of our field events. This is his contribution.

With Field Day just around the corner, it is time to get things together for our most fun excursion of the year. For those of us hitting the outdoors and escaping the grid, there is the choice of running either generators or solar. I am partial to solar panels, not only because they are quieter, but because they don't need gas and the system is simpler, so no AC power supplies are required.

Pretty much any piece of ham gear that we are likely to bring along operates at 12V. Despite the fact that lithium batteries are lighter with great power density, it is still more economical and practical to run lead-acid batteries for anything bigger than 10 amp/hours. A single 50AH gel cell battery can cost less than \$100.00 and provide enough to power a 100W station for several hours. When we add a 50W solar panel, we can keep the station up and running pretty much indefinitely.

I like the combination of a 50-Watt panel with 50 Amp-Hour battery. It is a good size for a single station on field day. If you think you need more, consider upgrading to 100AH with 100W of solar. The advantage of using this kind of system is that they parallel pretty easily, so they can be scaled up as needed. The solar panel is a current source that is quiet and is capable of overcharging your battery. It is ideal for charging, but only when kept in control.

The final piece that is last considered is the charge controller. It is the only thing that keeps the solar panel from damaging the battery. You might think that a charge controller would not be necessary for a short-term event like field day since the battery will always be under load, but that could be risky. To maximize the battery power available, the battery should be fully charged first, and connected to a charging system as long as possible during operation. This will maximize your transmit watts available, and it will keep the battery near the top level before the sunset when we only can run off of stored reserves. The solar charge system is handy for charging up before the event begins, and for topping it off after it is over. The very point of field day is to be prepared for emergencies, so having the basic power system that is not dependent on the grid or on a gas generator is a pretty valuable thing. I choose to keep my home ham shack entirely powered by solar, using a 100W panel and a 100AH gel type battery so I am never dependent on the grid.

Experience has taught me one important lesson when it comes to operating ham radio by solar power, and that is to use a charge controller that doesn't cause noise. There are lots of cheap and expensive charge controllers on the market, just check Amazon or eBay for a solar charge controller and count the hits. Of all these offerings, almost every one of them will be noisy for us hams. The most popular charge controller by far is the PWM type charge

Continued Next Column

ADAW

HAM RADIO OUTLET

WWW.HAMRADIO.COM

*FREE 1 OR 2 DAY DELIVERY TO MOST OF US!



\$600
Eliminate
compare

TS-990S | 200W HF + 6M Transceiver

- World's first dual TFT display • 200W output on all bands • ±0.1ppm TCXO ensures both high stability and reduced power consumption • Triple 32-bit DSP's dedicated to main/sub receivers and band scope • Main receiver employs full down conversion, new mixer & narrow band roofing filters • Third order intercept point (IP3) +40dBm for highest level of RX performance (main receiver)

Call For Special Price!



\$40
Eliminate
compare

TM-D710G | 2M/440 Dualband

- V-VV-U/U+U operation • Built-in GPS • Built-in TNC for APRS & DX-Cluster operation • 50W 2M & UHF • 1,000 memories • Dual receive • Green or amber backlight colors • Latest APRS firmware w/new features • Sky Command II remote functions

Call For Special Price!



\$250
Eliminate
compare

TS-480SAT/HX | HF + 6M Transceiver

- 480HX 200W HF & 100W 6M (no tuner) • 480SAT 100W HF & 6M w/AT • Removable w/front panel/speaker • DSP built-in

Call Now For Low Price!



NEW

\$300
Eliminate
compare

TS-590SG | HF/50MHz Transceiver

- Equipped with 500 Hz/2.7 kHz roofing filter as standard • ALC derived from TS-990S eliminating spike issues • Antenna output function (shared with DRV connector) • CW - morse code decoder function • Improved 1st mixer • New PFB key with multi-function knob • New split function enabling quick setting • LED backlight with selectable color tone



\$25
Eliminate
compare

TM-V71A | 2M/440 Dualband

- High RF output (50W) • Multiple Scan • Dual receive on same band (VxV, UxU) • Echolink® memory (auto dialer) • Echolink® Sysop mode for node terminal ops • Invertible front panel • Choice of green/amber for LCD panel • 104 code digital code squelch • "Five in One" programmable memory • 1000 multifunction memory

Call Now For Your Low Price!



\$40
Eliminate
compare

TH-D72A | 2M/440 HT w/extended RX

- SW TX, RX 118-524 MHz, VxU, VxV, UxU • APRS w/built-in 1200/9600 TNC • Built-in GPS, Built-in USB, digipeater • Echolink® compatible, • MI-Spec STD810

Call For Special Low Price!



\$200
Eliminate
compare

TS-2000

\$250
Eliminate
compare

TS-2000X

TS-2000/2000X | HF/VHF/UHF Transceiver

- 100W HF, 6M, 2M • 50W 70CM • TS-2000X 10W 1.2GHz • Built-in TNC, DX packet cluster • IF Stage DSP • Backlit front key panel

Call For Special Price!



\$25
Eliminate
compare

TM-281A | 2 Mtr Mobile

- 65 Watt • 200 Memories • CTCSS/DCS • MI-Std specs • Hi-quality audio

Call For Special Low Price!



TH-D74A | 2M/220/440 HT w/D-STAR

- D-STAR compatible • APRS ready w/built in GPS • Color weather station information • Built-in KISS mode TNC • High-performance DSP voice processing • Standard compatibility for Bluetooth

Call For Low Price!



TH-K20A | 2M Handheld

- 2M 5.5W • V0X • CTCSS/DCS/1750 Burst built-in • Weather alert

Call For Special Low Price!



- RETAIL LOCATIONS – Store hours 10:00AM - 5:30PM - Closed Sunday
- PHONE – Toll-free phone hours 9:30AM - 5:30PM
- FAX – All store locations
- ONLINE – WWW.HAMRADIO.COM
- MAIL – All store locations

KENWOOD

Happy Spring from your HRO Phoenix crew!

Now serving you at our Phoenix store:
Manager Mike KB6VHF, Steve W7QY, Mike K7DD, Jim K7EOG, Jim KE7EEU, and Laura KB6UHF