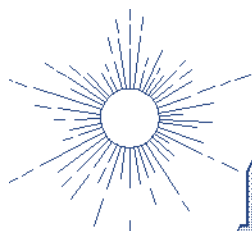


ADAW

4529 W. Park Place
Glendale, AZ 85306-1512



ADAW

Arizona Desert Aire Waves

Vol 37, No 8

August 2012

ARE YOUR DUES CURRENT?

**Check Your Club's Listing
on Page 2 for Information.**

**Be sure your club has your current
email and/or mailing address.**

CLUB MEETINGS SCHEDULE

SARC
Aug 1st
Scottsdale Senior Center
7:00 PM

AARC
Aug 9th
Red Cross Bldg. - Phx
7:30 PM

OPRC
Aug 8th
Marshall Conference Ctr
at Tucson Medical Ctr
7:15 PM

CARL
TBA
AZ Science Center
TBA

QCWA
October
TBA
Tempe
12:00 PM

TBARC
Aug 16th
Thunderbird School
of Global Mgmt
7:00 PM

ADAW MEMBER CLUBS

ARIZONA AMATEUR RADIO CLUB

The Arizona Amateur Radio Club meets on the **SECOND THURSDAY** of each month at 7:30 p.m. in the Red Cross Building, located at 6135 N. Black Canyon Hwy., Phoenix (N. of Bethany Home Rd., E. side of Freeway on frontage Rd.).

President	Gary Hamman	K7GH	602.996.8148
Vice President	George Cooney	KQ7C	
Secretary	Leslie Hickey	N5LDH	602.246.4303
Treasurer	Bob Hodges	K7JJT	602.274.1647
Red Cross Liason	Larry Penrod	AC7FC	602.955.0349
ARCA Liason	Dick Baum	NS7A	602.870.1135
Membership	Bob Hodges	K7JJT	602.274.1647

AARC c/o Bob Hodges, K7JJT, 1432 E Colter St., Phoenix, AZ 85014-3011. DUES: \$15.0500/YR, Prorated (\$18.00 Family, \$9.00 Student), MEMBERSHIP YEAR BEGINS FEB. 1.

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	Bob Burleson	KG7QJ	480.961.1109
Vice President	Tom Salt	AD7PM	480.926.0348
Secretary	John O'Neal	K7JP	480.345.7800
Treasurer	Roger Buel	W9NCQ	602.493.7242
Board Members	Ray Waddoups	KE7FUM	480.654.9883
	David Zinder	W7PMD	602.358.7826
	Ken McLeod	KM3N	

*Web Master, ARCA Rep - Roger Buel, W9NCQ - 602.493.7242
For information: Email to carl@w7asc.org or call Bob Burleson, KG7QJ at 480.961.1109. Web Site: <http://www.w7asc.org>*

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www.adaw.org

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	Bob Johnsen	K7TR	480.946.1427
Secretary	Ed Nickerson	WU7S	480.949.5162
Treasurer	Tom Barry	W7UF	480.998.8494
Past President	Paul Finell	W7EFQ	602.741.6563
Board Members	Jerry Jacques	KE7GYM	480.239.8679
At-Large	Dreux Jacques	W7EMU	
	Louis Schmitt	NQ7I	
	Alan Jensen	KE7FSD	
	Judy Jensen	KE7IXI	
	Stephen Thomas	KE7TLS	
	James Wasson	N7ELL	
	David Yee	N7AJR	

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

OLD PUEBLO RADIO CLUB

The Old Pueblo Radio Club meets the **SECOND WEDNESDAY** of each month (except June, July and August) 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:			
	Bill Price	N7GUO	
	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.

The *Arizona Desert Aire Waves* is published monthly and is the official news media of the sponsoring clubs. All news items, articles and inquires 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 MEMBER CLUBS

QUARTER CENTURY WIRELESS ASSOCIATION CHAPTER 16 - BARRY M GOLDWATER ARIZONA CHAPTER

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.

President	Douglas Besemer, K0VPL	motoman1@aol.com
Vice President		
Sec/Treasurer	Robert McCuskey, W7BV	mccuskey@email.arizona.edu
Webmaster	Robert Smith, WB6ODR	lrsmith@cableone.net

AZ QCWA, Robert S. McCuskey, W7BV, Email: mccuskey@email.arizona.edu. DUES: \$7.00/year and current national QCWA membership. Web Site: <http://azqcwa.org>

THUNDERBIRD AMATEUR RADIO CLUB

The Thunderbird Amateur Radio Club meets the **THIRD THURSDAY** of each month at 7:00 p.m. at Thunderbird School of Global Management located near 59th Ave. and West Greenway Rd. (Enter at the light at Country Gables and 59th Ave. The meeting is held in Building 107, Lecture Hall 54. Map may be found on the web site at www.w7tbc.org.)

President	Walt Reinert	N7GDP	602.938.8219
Vice President	Peter Decker	K7IJR	602.564.6684
Secretary	Jack York	KE7VOU	602.318.7530
Treasurer	Al Johnson	AE7GM	623.980.5853
Directors:	Ken Croxton	KD7OWZ	
	Israel Vincente	AD7ND	
	Rick Tejera	K7TEJ	
Past President	Jim Puza	AE7JP	

For further information about the ThunderBird Amateur Radio Club, send an e-mail to: info@w7tbc.org or call 602.938.8219.



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Event Calendar

September 8, 2012 - **FallFest 2012** - hosted by the Mohave Amateur Radio Club will be held at Centennial Park, 3333 Harrison Street in Kingman. Event begins at 7:00 AM and lasts til the last person leaves. Food will be available. VE Testing will be held at 11:00 AM. Door prizes and grand prizes. Talk-In 147.240+ PL 123 and 448.550+ PL 123. For more information, visit www.kingmanhamfest.com or contact Bill Smith (928.303.9857) or Kevin Walsh (928.514.4237).

October 6, 2012 - **Tucson Hamfest & Fly-In** - hosted by the Oro Valley Amateur Radio Club will be held at the Marana Regional Airport, 11700 W Avra Valley Road (Just off I-10 & Avra Valley Rd) in Marana. Hours are from 7:00 AM until 1:00 PM. Talk-In: 146.620(-) Pl 156.7 or 441.100(+) Pl 156.7. Vendor spaces are \$5.00 each - Admission \$1.00. Flea market, major vendors, food, drink, prizes, VE testing and more. Visit the website at www.tucsonhamfest.com or call toll-free, 1.800.909.0031 for more information.

December 2012 - Superstition Hamfest

12 January 2013 - **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 7:00 AM until noon with vendor set up beginning at 5:30 AM. \$10 per parking spot to vendors. General Admission Donation is \$2 per person. VE test session from 10:00 AM to 11:30 AM. Door prizes every half hour. Snacks and beverages available. Talk-In on 146.700 -600 (Pl 162.2) or 446.150 -5 (Pl 100). Web Site: www.w7tbc.org. For questions, send email to hamfest@w7tbc.org.

February 15 - 16, 2013 - **2013 Arizona State Convention/ Yuma Hamfest** - hosted by the Yuma Amateur Radio Hamfest Organization will be held at Yuma County Fairgrounds, 2520 E 32nd Street in Yuma. Hours are Friday, 12:00 noon til 5:00 PM - Saturday, 8:00 AM til 5:00 PM. Barbecue dinner and prize drawings Saturday evening, 6:00 PM til 8:00 PM. Talk-In frequency: 146.840 (-) PL 85.5 Hz. Visit www.yumahamfest.org for details. Contact email: info@yumahamfest.org.

ADAW

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, or locations may change. Call test session contact to confirm information. Walk-ins are permitted unless otherwise specified.

August Test Sessions

Aug 2nd - 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

Aug 4th - OVARC -- 10:00 AM

Oro Valley Police Sub-Station, 1920 E Tangerine Rd, Oro Valley
 Contact - Randy Malick 520.247.9999

Aug 4th - DeVry ARC & West Valley ARC -- 9:00 AM

DeVry University, 2149 W Dunlap Ave, Phoenix
 Contact - David Morrill 623.680.5011

Aug 11th - Yavapai ARC -- 9:00 AM

Yavapai Cty Jeep Posse Bldg, Pioneer Park, Prescott
 Contact - Mary Vince 928.775.2158
 Pre-reg by email appreciated - testing@w7yrc.org

Aug 11th - Yuma ARC -- 9:00 AM

Yuma County Sheriff Office, 141 S 3rd Ave, Yuma
 Contact - Robert Spencer 928.941.7069
 No Walk-Ins - Must Pre-Register

Aug 12th - Rim Country ARC -- 1:00 PM

Herber/Overgaard Fire Dept, 2061 Lumber Valley Rd, Overgaard
 Contact - Jerry Wyatt 602.509.8471
 No Walk-Ins - Must Pre-Register - ve@n7qv.com

Aug 12th - Group of VE's -- 6:00 AM

C & C Electric, 3046 E Southern Ave, Phoenix
 Contact - Kelvin Graham 602.509.4769
 No Walk-Ins

Aug 13th - Radio Society of Tucson -- 7:00 PM

Hardesty Multi-Service Ctr, 1100 S Alvernon Way, Tucson
 Contact - Diane Zimmerman 520.219.0452

Aug 18th - Catalina Radio Club -- 9:00 AM

Jacob's Park YMCA, 1010 W Lind St, Tucson
 Contact - Frederic Hill 520.403.1893
 Pre-Registration Preferred

Public Service Calendar

EVENT	LOCATION	DATE
Special Olympics Sprint & Unified Triathlon	DC Ranch Village Health N. Scottsdale	09/08/12
American Diabetes Assoc Walk	N Central Phoenix	10/06/12
Walk for Hope	Phoenix Zoo	10/07/12
Xterra Trail Run - Estrella	Estrella Mtn Track	10/07/12
Cactus Cha-Cha	White Tanks Mtn Park	10/13/12
Tour de Scottsdale	Scottsdale/Rio Verde	10/14/12
Tour de Paradise	Phoenix/Paradise Valley	10/20/12
YMCA Half Marathon	South Mtn Park	10/27/12
Javalina Jundred	McDowel Mtn Park	10/27-28/12
Heart of AZ Bike Race	Congress	11/03/12
Cave Creek Mtn Bike Ride	Cave Creek Area	11/10/12
Fiesta Bowl Half Marathon	Scottsdale Civic Plaza	12/02/12
Runner's Den 10K	East Phoenix / Paradise Valley Mall	02/10/13
Ragnar Relay	Wickenburg to Tempe	02/22/13
Mesquite Canyon 50 K	Trail Run White Tanks	03/23/13
Cave Creek Trail Run	Cave Creek	03/30/13
March of Dimes Walk for Babies	Wesley-Bolin Park, Downtown Phoenix	04/13/13

To sign up send email to: mcecg@yahoo.com

MCECG on the Web MCECG.ORG for event sign up

For information on events, join - azhamserve@egroups.com

Jim Pierce, N7QVW - 623.551.1204 - jim@n7qv.net

Brian McCarthy, N7TUQ - 623.486.0507 - n7tuq@arrl.net



Aug 19th - Sedonafest -- 9:30 AM

Coconino National Forest, SE of Sedona, AZ, Sedona
 Contact - Michael McCambridge 520.247.3367

Aug 20th - East Valley VE Team -- 6:00 PM

City of Mesa Bldg, 640 N Mesa Dr, Mesa
 Contact - Steve Gurley 480.704.3666

Aug 24th - Tonto ARA -- 6:00 PM

Payson Public Library, 328 N McLane Rd, Payson
 Contact - Darde De Roulhac 928.468.1487

Aug 25th - Arizona ARC -- 7:00 PM

American Red Cross, 6135 N Black Canyon Hwy, Phoenix
 Contact - Gary Hamman 602.996.8148
 No Walk-Ins - Pre-Registration Required by Friday Nite



SCOTTSDALE AMATEUR RADIO CLUB, INC.



Club Station: WA7APE
Club Repeaters: 147.78/.18 & 445.00/440.00

Hi Guys,

At the end of June the Scottsdale Amateur Radio Club participated in the ARRL Field Day event by setting up stations in Chino Valley on the Finell property. I was unable to attend the event this year because of an on going medical problem, but Judy (KE7IXI) and Al (KE7FSD) Jensen did. They provided the group with set up and food prep. They were outstanding! They also provided us with a brief run down of the event. Here it is.

We have three goals for this Field Day: 1. Make a contact (maybe 10 contacts with one being outside of the country). 2. Set up radio and new Buddi-pole antenna and learn about it and other on-site antennas. 3. Learn about radio HF procedures.

Hot windy day. Must secure all tents and chairs. The ground is decomposed granite and normal tent stakes may not hold a tent down. Consider using the car or truck to anchor the tent. Antennas (two 20-meter phased verticals, a yagi multi band and one dual dipole capable of 20 and 40 meters) are up. There is very little shade available as most trees are Junipers. At around 4:00 p.m. in the afternoon there is some shade on the east side of the big juniper. Later, this tree makes a good meeting place.

Weather conditions are important and it is HOT, DRY and WINDY. But it is cooler than Scottsdale and the temperature is about 91 to 95 degrees. It is over 103 in Scottsdale. The wind dies down at the evening time and it becomes very nice. In fact, it becomes cold at about 3:00 a.m. The next day there are a few wisps of clouds in the early morning and more clouds as the day goes on. It is good to be a ham radio operator and get the weather forecast for the area from the NWS. Maybe rain later this Sunday evening. We will be out of here by then. But until then it is hot and bright. Sunglasses are needed and so is protection from the sun.

There were 11 people present with three transmitting stations. First order was to obtain an idea of what all established stations were doing. It looked like all were going to be transmitting some CW and maybe phone in the 20 and 40 meter bands. But no one knew for sure. Then it was time to find a flat place to set up camp. A flat location will help with sleeping at night. The truck was parked pointing due east on a small patch of level ground. Then it was time to remove ice chests, additional food that was brought up and set up radio, solar panels, batteries and antenna. The new antenna was placed on a small ridge just south (about 25 yards South and 20 feet higher than base camp) of the campsite on a rock ridge. The antenna was set for 10 meters to begin with then planned to be readjusted to 20 meters later in the day. Three other stations are working 20-meters, 15-meters and 40-meters on both CW and phone. I was informed we wanted to stay as a 3A site. VHF/UHF was acceptable so I set up a J-pole antenna for 2 meters and 440. Easily made the trip to Mt. Eldon and monitored 146.98 (Mt. Eldon).

During the event we had a problem with the logging program which kept us off the air for about an hour. Everyone was so tired the stations were not run all night, but everyone there had a blast. We accomplished our original goals for this event. I can't wait for next year.

Well, that is all I have for now. Until next month, keep on hamming, be well and enjoy life.

73 Ed WU7S
enickerson427@aol.com



Paul Playford, W8AEF working 20-meeters



Judy Jensen, KE7IXI working lunch

ADAW

SARC CONSTANTS:

SARC is a 501 (c)-3 club. That means all donations are fully tax deductible. Contact Paul Finnell, W7EFQ at 602.741.6563 for information on estate donations and equipment pick-up.

For membership information, call Gerald Jacques, KE7GYM at 480.239.8679. Please send address change requests to Gerald no later than the 7th of the month in which you would like the change to occur.

To field check QSL cards for most ARRL awards, call Ed Nickerson, WU7S at 480.949.5162.





This 2012 Field Day was probably one of the best ever for the AARC! We had our share of setup problems beginning with an unsuccessful attempt to start the club's 5000-watt generator, but we were able to solve the glitches. The Briggs-Stratton started offsite, but attempts to get it going at the EOC failed completely. KD7ZXU, Earl Woody, became our hero of the day when he determined the cause, a very dirty carburetor, and got the generator running again.

By 11:00 we were using two of our three radios with working antennas. The 40-meter CW station did not have its dipole ready until later, but the 40-meter phone band was ready to go and was operated alternately by several of our members, generally with another member logging on the computer. Our 20-meter CW station was working well with Steve Tolnai, W7WSV, at the key. He had his wife Sandie logging for him, and during the 24-hour period Steve racked up 245 contacts on CW.

The 40-meter dipole got installed when, during a break from the 20-meter CW, W7WSV handled the archery bow and shot the arrow that launched our 40-meter dipole. Good shot, Steve. Gary, K7GH, operated the 40-meter CW station throughout the night.

Our Field Day was successful because it served many purposes. It tested our ability to handle emergency situations and our operating skills. Most of us learned something from working together with others. Field Day should be fun. This one was, and it gave us a chance to spend enjoyable time together. Field Day should help the beginner to understand amateur radio, its difficulties, and its importance. During our morning pre-Field Day breakfast at Denny's, we were joined by a young man who was interested in emergency communications and anxious to know more about amateur radio. Matthew spent most of the day with us. It was a great experience for him to see amateur radio in its most enthusiastic hours.

Obviously we all learn something from just being around the Field Day process, but several of our members got an unexpected lesson about RACES. Sunday mornings at 7:30 the RACES (Radio Amateur Civil Emergency Services) net meets on 3990 kHz, and Gary, K7GH is the net control for this net. Since he was at the Field Day site, he operated the RACES net from the EOC at the American Red Cross building on emergency power. It is interesting to listen to this

No Report Received.



net and experience the efficiency of RACES operation as well as the dedication of the RACES members. I estimate that about 20-30 members check in every Sunday, and many pass traffic each week. Several of our club members had not had this monitoring experience before. Anyone who monitors the net will realize the value of amateur radio in emergencies, a definite learning experience.

We finished the day with 192 phone contacts and 287 CW contacts for a total of 479 contacts. We worked every state except Rhode Island. Field Day was a success, and our hats go off to KD7ZXU, Earl Woody; to W7WSV, Steve Tolnai; to our go-getters who worked in the 104 degree temperatures: K7JIT, Bob Hodges; WØSLL, Joe Cutitta; AC7FC, Larry Penrod; and N5LDH, Leslie Hickey; to N7PHO, Ken Peloquin, who made 130 phone contacts and N7PLN, Rosemary Kydd, for her support; to KF7UJB, Verdamae Cutitta, who after passing her Amateur Extra exam Saturday night, did a great job working with the cleanup crew on Sunday. Finally our sincerest thanks to K7GH, Gary Hamman, who co-ordinated this adventure, solved its problems, and worked tirelessly in every aspect of this Field Day.

What did I do? WA7EDI, Lori? I took pictures, of course, and a little bit of everything, including making some 40 contacts. I slept two hours on a makeshift bed. I had fun!

Thanks to each of you for the part you played in this Field Day. We'll do it again next year.

73,
Lori, WA7EDI
(602) 955-7517
cripps@cybertrails.com

AARC Field Day 2012



Joe Cutitta, W0SSL and Earl Woody, KD7ZXU



Gary Hamman, K7GH on RACES Net



Steve Tolnai, W7WSV



Ken Peloquin, N7PHO



Gary Hamman, K7GH; Bob Hodges, K7JIT; Joe Cutitta, W0SSL (hidden); Steve Tolnai, W7WSV & Verdamae Cutitta, KF7UJB

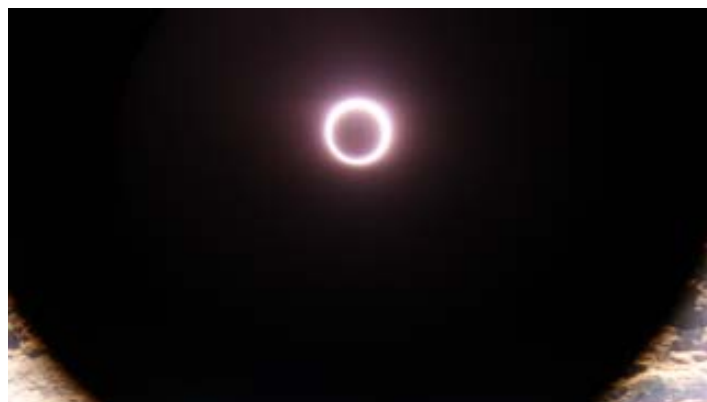


Well, that's all for now. Again, Hope everyone had a good field day.

Till next month, 73
Rick, K7TEJ



Horseshoe Bend



The May 20th Solar Eclipse

It seems the past few meetings I've notice more and more new members, many new hams. First, congratulations on earning your license! As chair of the mentoring committee, please feel free to contact me if you have questions about operating, home-brewing, setting up your shack or other ways you can have some radio fun. Now, I'll admit, there are a lot of members who've forgotten more than I've learned, but if I don't have the answer, I'll get you in touch with someone who does. Our members enjoy elmering new hams, so don't be shy.

Speaking of elmering, an upcoming digital workshop is in the planning stages. Hopefully, we'll have some more details in the next issue. If you have wondered how to get involved in operating modes like PSK31, Olivia & JT65, this will be worth attending.

As most of you know, I have an avid interest in Astronomy, and the last few weeks of May were an astronomical bonanza (Pun intended). First, was the annular eclipse on May 20th, I went up to a spot near Page called Horseshoe Bend to view the eclipse - 487 miles for 4 1/2 minutes and worth every mile. [Attach Image of eclipse & Horseshoe Bend].

On 5 Jun, I got to cross off my Astro Bucket List, the transit of Venus, and a good thing too, since this was the last one in our lifetime. I was even able to add a ham radio aspect to the observations. By sending APRS messages to the APRS CQ reflector, I was able to share observations with hams worldwide. APRS CQ reflector? What's that? Just proof that AS is more than a beacon of where you are. By sending a message to CQSRVR and then beginning your message with CQ [reflector name] followed by your message, any ham whose message the reflector will see your message and you will get theirs as well. See <http://aprs.org/cqsrvr.html> for more information on how to use this system.

My Antenna project is almost done. I'm putting up a Hy-Gain Av18-VQII vertical. The antenna is up and mounted and I'm in the process of tuning it up. While it's mostly one, I still have to tune the capacity hats for 40m & 80m, but it's been just too hot out, which brings me to my next point. If you're going to anything, radio or otherwise, outside, remember to stay hydrated and don't overdo it.

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CHAPTER 16

BARRY M. GOLDWATER ARIZONA CHAPTER

Fourteen members and guests attended the Summer meeting of the AZ Chapter QCWA which was held at the Plaza Bonita Family Mexican Restaurant in Prescott. After a delicious lunch was enjoyed by all, President Doug Besemer, KØVPL, introduced the speaker, Bob Smith, WB6ODR, who gave us a very interesting presentation about the miniature horses that he and his XYL, Linda, KD7EEO, raise and use to perform as part of the Arizona Mini Mystique, a miniature horse precision driving drill team which has performed at many events including the Rose Bowl Parade. More information about this fascinating group can be found at their website: www.minimystique.org.

A business meeting followed Bob's talk. The proposed revisions to the Chapter's By-Laws were discussed with several suggestions for additional changes suggested. The final version will be sent to the membership soon along with a ballot seeking approval. The lack of nominations and volunteers to stand for election also was discussed. In particular, the critical need for a person to fill the vacant Vice President's position as required by our bylaws. The meeting was adjourned shortly after 2 P.M.

The next meeting will be in October in Tempe. The date and place will be announced soon.

73,
 Bob McCuskey, W7BV
 Sec./Treas., QCWA -AZ Chapter
mccuskey@email.arizona.edu



Old Pueblo Radio Club INTERMOD

President's Column

Summer is over half way through. Lightning has taken its toll on some of the repeaters and other equipment in the Tucson area, but most equipment is up and running. I have not heard of any problems to date with OPRC equipment.

Despite the fire threat, the annual ARRL field day went quite well and was enjoyed by those who attended. Several OPRC members took part with the crew from RST and CRC. These folks were at several sites near or at the top of the Catalina Mountains. As generators were not allowed, they ran their stations QRP from batteries which were charged from solar panels or from vehicles.

The OPRC will commence its fall schedule of meetings in September. More on that next month.

73 de
 Ron Kalish, N7SPW
 President, OPRC



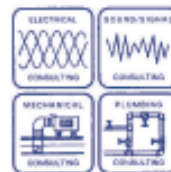
OPRC Repeaters

146.66 - PL 110.9	wide coverage	W7GV
146.82 - PL 110.9	wide coverage	W7GV
147.22 - PL 110.9	wide coverage	W7GV

RACES Repeaters

145.150	packet/wide	N7OEM
146.880 - PL 110.9	wide coverage	N7OEM
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WHAT IS ATV?

Presented by Amateur Television Network (www.atn-tv.org)

SECTIONS

1. What is ATV
2. Operation
3. Receivers
4. Transmitters
5. Antennas
6. Repeaters

Section 1: What is ATV?

Amateur Television (ATV) is divided into two primary types: Slow Scan - a system used on the HF bands occupying the audio bandwidth of an amateur station to transmit a few still pictures per minute to another station usually over long distances - and Fast Scan - a system of sending broadcast quality full motion pictures over shorter distances on the UHF and microwave bands.

In this presentation we will examine the Fast Scan version of ATV. Back in the late 1940s, hams in many parts of the country helped develop commercial television. The old Amateur 5 meter band was used for this mission. They were very helpful evaluating reception of different system types and many engineers were also hams using their vast technical knowledge for television development. The hams - being hams - decided to build their own stations. In the early days, it was home brew or converted war surplus UHF equipment.

By the 1960s, home brew and converted UHF two-way radios were used. By the 1970s, technology changes were afoot with modulator and down converter kits and completed boards followed a few years later by a complete ATV station in a box were available from PC Electronics and other manufacturers. By the mid 1970s, Metrovision in Washington DC was the group that had built and licensed the first ATV repeater in America. By 1979, WA6SVT had built the first wide coverage repeater in California on top of Mt. Wilson. Over the years, a group called Amateur TV Network (ATN) was formed to support the repeater and many more repeaters soon followed. ATN now has six state chapters across the country.

Today it is easier than ever to get on the air with ATV for less than \$700 for all new equipment and less than \$100 for the builder. The oldest and most widely used mode of ATV is AM and a related modulation - Vestigial Sideband (VSB). A cable ready TV set can directly pick up ATV on the 420 MHz band. A down converter is needed for the higher bands. Your camcorder can be used for your ATV camera. All that is needed is a transmitter and antenna and you are on the air!

FM ATV is one of the fastest growing modes of ATV. FM ATV uses 4 MHz deviation (the terrestrial commercial TV standard used for studio to transmitter links and ENG) in the 0.9, 1.2, 2.4 GHz and higher bands. A few ATVers use the satellite (TVRO) standard of 11 MHz on the 3.3 GHz and

higher microwave bands. FM ATV using converted part 15 TV room to room links - such as the WAVECOM units - is available from ATV vendors. FM ATV is the preferred mode in Europe on 1.2 and 2.4 GHz bands.

Digital ATV is just starting out by converting analog video to MPEG-2 bit stream with QPSK, 8-VSB, and DVB modes of digital modulation. Most of the research to date is done in Germany by the DATV group using standard definition DTV on 434 MHz using 2 MHz of occupied bandwidth and HDTV on 1.2 GHz using 6 or 7 MHz of bandwidth. In this country, ATN has started experiments using the methods above and using internet pipelines to link distant ATV repeaters (see <http://www.atn-tv.org>) and look under ATN on the internet for more details). The HSMM group is experimenting with multimedia formats including ATV using 802.11b and WiFi part 15 equipment occupying 22 MHz in the 2.4 GHz band.

Section 2: Operation

ATV is unique in that it enables a ham to show and tell another ham in real time his shack, latest project, field day, home video of the family's vacation, and other events. ATV for public service allows pictures in real time to be sent to emergency operation centers to report storms and damage assessment.

Most ATVers use a 2 meter calling and coordination frequency to set up ATV contacts. 144.34 MHz is popular in the Midwest and some areas of the East Coast. 146.43 MHz is popular in the west. Most ATV repeaters have a 2 meter receiver on site to mix in the calling channel audio with the TV audio. On the 420 MHz band, polarization is usually vertical with areas that use 434 MHz and horizontal in areas that use 439.25 MHz and areas with inband 421.25 MHz out and 439.25 MHz in repeaters. Most cross-band repeaters use vertical polarization on both bands.

Lighting is important for good ATV pictures. More detail is available in "Advancing the ATV Art Workshop" produced by ATN. A camcorder, CCTV camera and most analog output computer cameras work well for ATV. Antennas should be above the tree line for good DX on simplex and operation to far off ATV repeaters. Low loss feedline should be used. A low noise preamp is a good idea if you use a cable ready TV or an older down converter. At least 10 watts is needed for good ATV distance and 100 watts or more for long haul DX work.

ATVQ magazine (<http://www.atvquarterly.com>) is a good resource for information on what is happening in your area on ATV, projects you can build, ATV group information and advertising for the latest ATV gadgets for sale by reputable ATV vendors and manufacturers.

Section 3: Receivers

The simplest ATV receiver for AM or VSB is the standard TV set using a 6 MHz wide channel. A cable ready TV can receive the 420 MHz band ATV signals - just add an antenna

(and preamp for even better performance) and you are ready to receive ATV! For a non-cable ready TV, add a down converter and for the higher bands a down converter is needed for all TV sets.

FM ATV needs a TV with A/V inputs or a video monitor, both requiring a full FM TV receiver. Low cost Part 15 domestic units work well on 2.4 GHz and imported Part 15 type units work well for 1.2 GHz or 2.4 GHz bands. A satellite receiver can work on 0.9 and 1.2 GHz bands for FM TV, but are set up for wideband FMTV and need a preamp and filter for better operation. They work well for Wideband ATV with a down converter on the 3.3 GHz band and above.

Section 4: Transmitters

It used to be said that AM TV on the 420 MHz band was the easiest way to get on ATV and that is still probably true, but the Part 15 FM TV units are also simple to use on 2.4 GHz. Most ATVer's use off the shelf transmitters or a transmitter with a built in down converter. Transmitters use crystal control or PLL to set frequency and AM modulate the carrier directly with video. Audio is modulated on a 4.5 MHz subcarrier and mixed in at the video modulator. The transmitter is double sideband occupying 9 MHz. The easiest way to build a VSB ATV transmitter is to either add an external RF 6 MHz wide bandpass filter to your existing AM transmitter or use a CATV Modulator.

CATV modulators are rack mountable and are much more sophisticated. They modulate a 45.75 MHz IF with video then filtered through a VSB 5 MHz wide IF filter. The audio is modulated on a 41.25 MHz carrier at 25 KHz deviation. Usually the aural carrier is phase locked to the visual carrier maintaining a precise 4.5 MHz difference. The aural and visual carriers are mixed to the final output frequency and amplified. Most CATV modulators can produce an output to 550 MHz making them suitable for the 420 MHz band. The modulator output is in the 10 to 20 mW level requiring amplification with a class AB RF power module.

The easiest FM ATV transmitter is a Part 15 TV unit on 2.4 GHz. The frequency chip can be changed to put all four channels into the ham band on coordinated ATV frequencies. Amplifiers are available from ATV vendors. Imported Part 15 type TV units for 1.2 GHz band are available from ATV vendors.

Section 5: Antennas

The antenna system and its placement is one of the most important items in designing any ham station. In ATV, we need more signal as compared with voice modes due to our larger bandwidth. Base stations should use a directional 13 dBi or better gain antenna to get as much signal as possible and to reduce co-channel QRM and multipath. The polarization is dependent on what is used in your area. Stacking Yagis or using larger microwave dish antennas will give better DX on ATV.

The best location for your antenna is above the roof line and trees. Stay away from RG-58, RG-8 and other HF-VHF feedlines. They have too much loss at UHF and even more on microwave. The same goes for the PL-259 connector. Use type N or other quality connectors. LMR-400, 9913 and heliax are preferred feedlines for ATV. Try to keep losses under 3 dB. Waveguide is used for the 5 and 10 GHz bands. DX can reach 50 to 100 miles with good antenna systems and several hundred miles with tropo ducting. KH6HME's ATV transmission from Hawaii was received by ATV stations 2500 miles away in California in full color with tropo ducting.

Section 6: Repeaters

ATV repeaters are fast becoming popular for ATV activity. Today many hams are finding themselves in antenna restricted communities reducing simplex ATV to about 10 miles, but an ATV repeater on a high tower or mountain top allows longer distant ATV contacts. Many ATV groups and individuals have built ATV repeaters. ATN has a linked network of interstate repeaters allowing ATV contacts over hundreds of miles.

The two types of repeaters are: Inband and Cross Band

Inband has both the input and output in the same band (popular in the Midwest since existing ATV simplex stations do not require additional equipment to use the repeater).

Cross band repeaters have the input and output in different bands allowing the sending station to see his own picture, make adjustments to his station and hear distant stations talk back to him over the repeater via the ATV 2 meter calling channel audio mixed at the repeater. A separate antenna and downconverter or transmitter is needed compared to simplex operation.

The Microwave Experimental Television Society (METS) uses a wideband FM input on 10.4 GHz using Gunplexers to transmit and slightly modified domestic C band satellite receivers to receive their 3.4 GHz wideband FM TV repeater output.

ATV repeaters are located in a high centrally located area and use omnidirectional antennas. The repeater's transmitter is keyed up upon detection of horizontal sync on the repeater receiver. ID is usually done visually by momentary interruption of the received ATV signal by an ID screen or done via video overlay. Some repeaters have two inputs: one is the old 420 MHz channel and the 2nd is a 2.4 GHz FM TV channel.

MPEG-2 Motion Picture Engineering Group's broadcast digital video standard

DVB European HDTV and DTV standard

QPSK Quadrature Phase Shift Keying

8-VSB 8 Level digital Vestigial Sideband, the US HDTV and DTV standard

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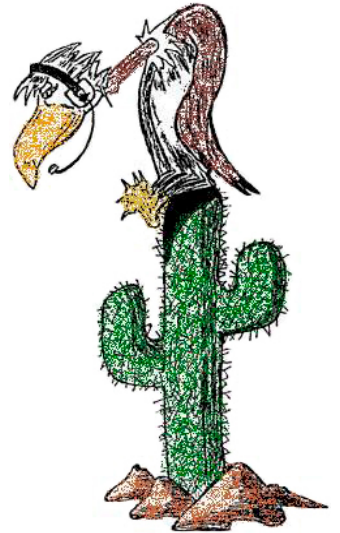
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www.yumahamfest.org

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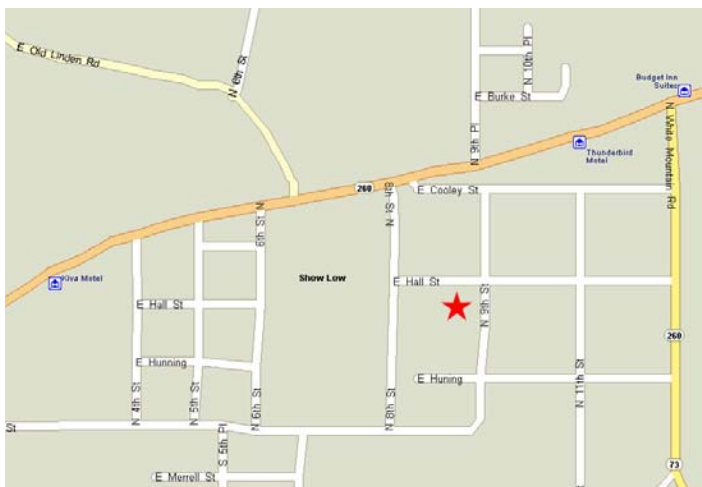
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