

Welcome to the Coconino Amateur Radio Club (CARC) Monthly Newsletter. CARC is a non-profit club devoted to providing communication services to local volunteer agencies and events. Meetings are held the second Thursday of each month at the East side Sizzlers Restaurant Highway 66 at Fanning Dr. Flagstaff, at 7:00PM. All persons interested in amateur radio, whether licensed or not, are welcome to attend.

Coconino SkyWarn meets 1900 every Monday evening on the 146.98 repeater and at 1930 on the Navajo Mountain CACTUS repeater and 146.480 simplex.

Coconino ARES meets 1900 every Wednesday evening on the 146.98 repeater and at 1930 on the Navajo Mountain CACTUS repeater and 146.480.

Calendar of Events for 2015:

5/15-17	Overland Expo, Licensing Exam	
6/6	Sacred Mt. Prayer Run	Sandy Meadowcroft
6/27-28	Field Day (Outdoor Mkt)	Ron Gerlak
7/19	Snowbowl Run	Janice Enloe
7/25	Williams Hamfest	Exams only, Joe/ Scott
8/1	Fat Tire Bike Race	Ron Gerlak/ Mike Clever
8/8	Big Brothers Big Sisters	Bob Meadowcroft
9/26-27	100 Mile Stagecoach Run	Bill Smith
10/10	Soulstice Run	Bob Meadowcroft
11/?	Girls On The Run	Sandy Meadowcroft
12/5	Skywarn Recognition	Mike Clever
12/?	Christmas Party	Meadowcrofts

Officers:

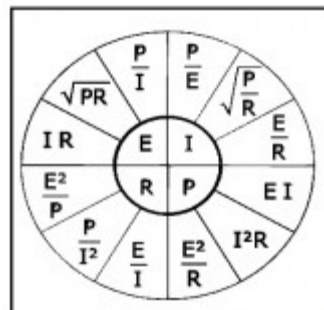
President: Sandy Meadowcroft KF4JHC

Vice-President: Tom Shehan W7TGS

Secretary: Erv Perelstein, KE7QFI

Treasurer: Pat Traber, KE7QFG

PIO: Janice Enloe, KI6WCK



E = voltage I = current
 R = resistance P = power

Reminders:

Club membership dues for 2015 are due at the January meeting: \$25 for individuals and \$30 for a family. Please plan to pay the treasurer at the February meeting

Thank you to all who have run the Monday and Wednesday night nets:
Flagstaff: Tom W7TGS, Erv KE7QFI, Mike KD8RQV
Page: Lee KF7YRS and Vince WB7UWW

If anyone one would like to help with the nets, please let Tom know. It is good practice for radio skills and the script is written for you to use.

Licensing Exams for 2015:

Remember to bring your license and a copy, a government issued picture ID, a black ink pen, and fifteen dollars.

17 May	Overland Expo/Mormon Lake
30 May	License Class
18 July	Williams Hamfest
17 October	TBA

<http://wireless2.fcc.gov/UlsApp/UlsSearch/searchLicense.jsp>

Arizona Newsletter: <http://www.arrl.org/>

Tutorials: <http://www.arrl.org/tutorials>

Next Business Meeting:

Our next business meeting will be May 14, 2015 at the East side Sizzlers at the corner of Highway 66 and Fanning.

CQ Field Day, CQ Field Day, CQ Field Day

Anyone interested in participating in 2015 Field Day please call now.



Dah dit dah dit Dah dah dit dah - No, you don't have to know the international morse code to participate and enjoy this event. Field Day is June 26, 27 & 28. This is just around the corner and plans are firming up. Volunteers are still needed for setting up stations, special interest booths, operating, and so much more. Some of the activities will be solar observing, solar power demonstrations, Get On The Air (GOTA) station for newcomers, The NADXA club will help by setting up SSB and CW stations making contacts all around the USA and even to countries around the world. Don't forget the food - Diner will be served Mexican style at 5:30 Saturday evening. Contact Phyllis Thompson at the next meeting for dinner details. You can participate in the fun and activities any hours of any day or you can come and just hang out as it fits your schedule. We are expecting some elected officials to put in appearances. A very big thanks to Scott KY7A and Amy KF7JPE Martin for allowing us to use their Silver Saddle Outdoor Market at 9001 North Highway 89 Flagstaff for this event. Contact one of your club officers if you have any suggestions or for information on where help is still needed.

Best 73s to all,

CARC 2015 Field Day Chairman

Ron Gerlak 623-256-8753

rbgerlak@gmail.com

Minutes of the Coconino Amateur Radio Club

4/9/2015

Meeting Started: 7:00 pm

Guests: None

Secretary's Report: Since the minutes of the March meeting were published in the newsletter they were not read. Tom Shehan asked if there were any changes or corrections to March's newsletter. There being none, Scott Martin moved and Bob Meadowcroft seconded a motion to accept the Secretary's Report as written. Unanimously accepted.

Treasurer's Report: The closing bank balance for 4/9/2015 was \$3,242.77. Membership is 45, consisting of 41 paid members and 4 lifetime members. Mike Clever moved and Scott seconded a motion to accept the Treasurer's Report as written. Unanimously accepted.

President's Report: Sandy Meadowcroft thanked all attendees for coming to our meeting. We all introduced ourselves. Sandy told us that the Licensing Classes were going well. We still have 7 of the original 10 students attending classes. The next class will be on April 11th, taught by Jack about Antennas, Feed Lines and Practical Antenna Systems.

ARES Report: Joe Hobart reminded everyone of the coming the Wildfire Season and that we cannot expect many warnings issued. He requests that members stay alert, stay ready and check for radio warnings on the Mt Elden 146.98 repeater often for information. He also recommended that all members concentrate on communications that do NOT include telephone and internet access as they may not exist in a real disaster. He reminded us that we should have information we need available without having to access the CLOUD, or Voice-Over IP (VOIP) systems.

Joe travelled up to the Mt. Elden 146.98 MHz repeater site recently to make sure there were no obvious problems that would cause the interference we are getting on the repeater. He did not find any obvious problems but warned us that we may be experiencing more problems than just NAU interference.

The subject of our CARC Club Banner came up for discussion. The current banner, although in good shape and very attractive, is very large and gets blown by the high winds we have experienced in past years. It was suggested that we look into purchasing a vertical banner that will do better in the wind. Scott said he would price a vertical banner and let us know at the next meeting.

We again reviewed our upcoming activities for the Spring, Summer and Fall with appropriate corrections and updates:

4/11	VE License Testing at Bilby Center, NAU	Joe coordinating
4/24-26	Girl Scout Campout (Non-official project)	Joe/Janice coordinating
4/29	PFAC Exercise	Assisting CERT with Radio Joe coordinating
5/??	ISS contact for NPA	Ken Held/Joe coordinating
5/15-17	Overland Expo (Call sign W7E),	Tom coordinating, Testing Sun morning
6/6	Sacred Mt Prayer Run, Thorpe Park	Dawnelle Shehan/Sandy coordinating

6-27-28	FIELD DAY	Ron Gerlik and Tom coordinating
7/19	Snow Bowl Run	Janice Enloe coordinating
7/24-25	Williams Hamfest VE License Testing	Joe coordinating
8/1	Toys-for-Tots/Fat Tire Race	Ron/Mike coordinating
8/8	Big Brothers/Big Sisters 1/2 Marathon	Bob Meadowcroft coordinating
9/26-27	100 Mile Flagstaff - Grand Canyon Run	Bill Smith coordinating
10/10	Soulstice Race, Schultz Tank	Bob coordinating
11/14	Girls-On-The-Run, Buffalo Park	Sandy/Dawnelle coordinating
12/5	Skywarn Recognition Day, NWS Belmont	Mike / Scott coordinating
12/??	CARC Christmas Party	Bob and Sandy Hosting

OLD BUSINESS: Joe told us that we are holding a VE Testing Session on April 11th at the Bilby Research Center on the NAU campus. He said we need 1 more VE and asked for volunteers. Along with Ken and Erv, Scott volunteered to help. Thanks to Dan Boone for letting us use the Bilby Research Center for our testing.

Tom suggested we discuss the upcoming Field Day (FD) Event (June 27-28). He proposed that we hold a Field Day Planning Meeting with the club officers and volunteers who will be helping Tom and Ron organize this year's FD. The meeting is scheduled for Saturday, April 18th at noon, immediately following the Technician Training Class at the North Country Health Care Facility at 2920 N. 4th St in Flagstaff. Bill Smith has confirmed that we can use the facility after the class. Tom and Sandy encouraged everyone to think of new ideas to make FD interesting and fun. Everyone is welcome to attend the meeting on Saturday. Our FD will once again be held at the outdoor market on the corner of Hwy 89 and Silver Saddle Rd, thanks to Scott.

NEW BUSINESS: No new business was brought up this month.

There being no further business, Scott moved to adjourn, Joe seconded and it was passed unanimously.

Meeting Ended: 9:00 pm.

Presentation: Erv Perelstein gave a talk on "Digital Communications".

CARC website: Hello to all CARC members, others who read the newsletter and everyone that views our website. We have updated some of the information on the website and made technical changes to improve it. Now we need your input. If you see anything that is incorrect or if you have ideas on how the website could be improved upon please let us know. Phil Brunner and I are committed to making the site informative and user friendly. Forward your ideas to Ron Gerlak <mailto:rbgerlak@gmail.com>. Visit the CARC website at CocoRadio.org.

Flagstaff to the Grand Canyon Fat Tire Bike Ride - August 1, 2015

The lottery was held allowing 200 applicants to secure a position in this bike ride. The ride is approximately 65 miles on butt-pounding, Forest Service roads along an historic stage coach route. Thankfully we won't have to ride a bike to enjoy all of the beautiful stands of aspens, pines, high desert and cool forest scenery. It all depends on your choice of location along the route.

If you would like to sign up to help with emergency communications and rider tracking for this event contact Mike Clever KD8RQV, at the next club meeting or via email to: mclever_2@msn.com

More detailed information on the ride can be found on the following web sites: flag2gc.com
<https://www.facebook.com/Flag2GC>

2013 & 2014 maps can be viewed and downloaded from the cocoradio.club web site. It is likely we will follow one of these routes and more current information will be posted as soon as it is available. Click on [CARC Wiki](#) on the left side bar menu and follow the instructions. Current printed maps will be distributed to all volunteers as the race time nears.

Best 73s

Ron Gerlak KG7OH

rbgerlak@gmail.com

Facts About Lightning:

- In what is called "Lightning Alley", an area from Tampa, to Orlando, there are as many as 50 strikes per 1 square mile per year
- Lightning is now known to occur on average 44 (\pm 5) times a second averaged over the entire earth, for a total of nearly 1.4 billion flashes per year.
- The lightning flash rate averaged over the earth for intra-cloud (IC) + cloud-to-cloud (CC) to cloud-to-ground (CG) is at the ratio: (IC+CC):CG = 75:25.
- Approximately 70% of lightning occurs on land located in the tropics where the majority of thunderstorms occur.
- The place where lightning occurs most often (according to the data from 2004 to 2005) is near the small village of Kifuka in the mountains of eastern Democratic Republic of the Congo where the elevation is around 975 meters (3,200 ft). On average this region receives 158 lightning strikes per 1 square kilometer (0.39 sq mi) a year.
- Electromagnetic radiation created by lightning in clouds only a few miles high can create a safe zone in the Van Allen radiation belts that surround the earth.
- Actually both directions: Most cloud to ground lightning strikes originate on the ground and terminate in a cloud.
- Most lightning is from cloud to cloud.

- According to the NOAA, over the last 20 years, the United States averaged 51 annual lightning strike fatalities, placing it as second to floods for deadly weather. In the US, between 9% and 10% of those struck die for an average of 40 to 50 deaths per year (28 in 2008). The chance of an average person living in the US being struck by lightning in a given year is estimated at 1 in 500,000, while the chance of being struck by lightning in a lifetime is 1 in 6250 (estimated lifespan of 80 years).
- Most lightning prone states: Florida, Louisiana, Mississippi, Alabama, South Carolina/Oklahoma.
- Recent satellite data (2000) suggests that there are more than 3 million lightning flashes worldwide per day, or more than 30 flashes per second on average. This includes flashes within or between clouds as well as flashes extending from cloud to ground.
- There is estimated to be around 2,000 active lightning storms around the global at one time creating over 100 strikes per second. These thunderstorms generate a potential difference of 200,000 to 500,000 volts between the Earth's surface and the ionosphere, with a fair weather current of about 2×10^{-12} amperes/meter².
- Lightning does not require a direct strike to damage radio receivers or other electronic equipment.
- The estimated peak power per lightning stroke is 10^{12} watts (1,000,000,000,000 watts or 1,000 Giga Watts). The total energy in a large thunderstorm is thought to be enough to power the whole of the USA for 20 minutes.
- An average lightning strike discharges about 30,000 amperes (20,000 amperes in the UK). The current in a lightning strike typically ranges from 5,000 to 50,000 amperes depending on the strength of storm. NASA has recorded strikes of 100,000 amperes and there are other reports of strikes over 200,000 amperes.
- In the northern hemisphere lightning occurs more during the summer months, however in equatorial regions, lightning appears more often during the fall and spring.
- When lightning strikes the ground radial currents spread out from the site of the strike causing damage to anything nearby. Once a lightning strike to a tree resulted in the death of 58 cows that were standing near the tree.

Protect your radio- disconnect your outside antenna before you leave home if there is a chance of thunderstorms.

Dear Citizens,

The Coconino Amateur Radio Club (CARC) cordially invites you to attend our 82nd Annual Field Day event beginning on June 27, 2015. The event begins at 11:00 AM Saturday, and concludes at 11:00 AM Sunday June 28. The event will be held at the Silver Saddle Outdoor Market at the corner of US Highway 89 and Silver Saddle Road.

Field Day is a 24 hour demonstration of the capability of HAM radio as a means of communication in the event of an emergency in our local area as well as distant locations. Recently, the Northern Arizona communication network was disrupted when a fiber optic cable was cut near Phoenix. Cell phone, internet and other forms of communication were not available. Services in healthcare, grocery stores and gas stations were down, credit and debit cards were not active and banks and credit unions were unable to complete transactions. HAM radio was operating continuously throughout the entire event. Many citizens were distressed that they were unable to communicate with their children or the schools, calls to 911 were severely limited and emergency services interrupted. Consider the situation if this had been an act of terrorism and more serious consequences had occurred. If such an event were to occur, HAM radio operators will be there to assist and augment the local emergency and government services with communication. We proudly offer our service in times of need.

To ensure that we are prepared and trained to perform in that time of need, on one select day each year (specifically the fourth weekend of June) HAM operators nationwide conduct an emergency simulation to prepare for a time when disaster strikes. Emergency power is used to simulate the collapse of the power grid, various antenna systems are erected to establish communication with local, mid-range and long distant stations and radio operators practice good radio technique for optimal effect. This event prompts us to have all of the nuts, bolts, cables and wires that we would need to establish a radio station in both urban and rural areas. Equipment and antenna systems are fine-tuned for optimal performance, skills are developed and long time HAMs share their experience and expertise with newly licensed operators.

Additional activities, events and demonstrations will be held throughout the day on Saturday. We plan to have a portable solar power demonstration, solar observing, a high altitude balloon exhibit and more.

The Coconino Amateur Radio Club invites everyone to visit Field Day during this event. Whether you are an amateur radio operator, interested in emergency preparedness or just curious about activities and events in your community, please stop by and see what amateur radio is all about.

73s from KI6WCK