

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.

Officers:

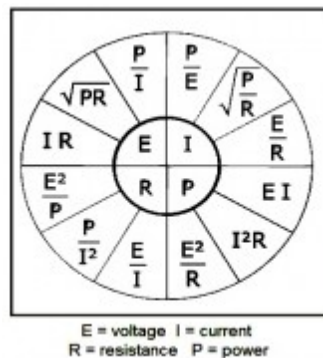
President: Sandy Meadowcroft KF4JHC

Vice-President: Tom Shehan W7TGS

Secretary: Erv Perelstein, KE7QFI

Treasurer: Pat Traber, KE7QFG

PIO: Janice Enloe, KI6WCK



Calendar of Events for 2016:

- February: Special license exam for Flagstaff High School students
- March: 9 Northern Preparatory Academy high altitude balloon launch
 March 9 is launch date with March 10th and 11th backup dates
- April: 16 Amateur Radio Examinations at Northern Country Health Care
 22 PFAC Exercise – Backup date May 6
- May: 20-22 Overland Expo: Demonstrations and Amateur Radio License Examinations
- June: 4 Sacred Mountain Prayer Run (KI6WCK)
 25-26 Field Day (KG7OH & Team)

July: 4 Munds Park Parade
 17 Snow Bowl Hill Climb (KF4JHC)
 23 Amateur Radio License Exams at
 Williams Hamfest/Arizona State Convention (W7LUX)

August: 6 Toys for Tots/Fat Tire Bicycle Ride (Mike, Ron & Tom)
 13 Big Brothers/Big Sisters Run for the Magic (Bob Meadowcroft)
 28 Possible Arizona Trail Marathon at North Rim
 **Northland Preparatory Academy to ISS amateur radio contact during
 Aug-Sep-Oct

September: 5 Williams 10K Labor Day Run
 24-25 Flagstaff to Grand Canyon 100 Mile Run(KQ1S)

October: 8 Soulstice Mountain Trail Run (KF4RKS)
 15 Amateur Radio License Exams at North County Health Care (W7LUX)
 ?? Northland Preparatory Academy solar observing (W7LUX)

November: ?? Arizona Division of Emergency Management Exercise
 ?? Girls on the Run (KF4JHC)

December: 3 SkyWarn Recognition Day at NWS Belmont (UTC date) (KD8RQV)
 11 Christmas party- Sandy and Bob Meadowcroft's home

Thank you and Help Wanted:

Thank you to all who have run the Monday and Wednesday night nets:
 Flagstaff: Tom W7TGS, Erv KE7QFI, Mike KD8RQV, Robert KF4RKS
 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 2015-2016:

April: 16 North Country Health Care on 4th Street

May: 20-22 Overland Expo: Demonstrations and Amateur Radio License Examinations

July: 23 Radio Exam at Williams Hamfest

October: 15 Radio Exam at North Country Health Care

Remember to bring your HAM license and a copy (if you are upgrading your license), a government issued picture ID, a black ink pen, calculator with memory erased and fifteen dollars (exact change is appreciated).

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

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

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

http://www.arrl.org/exam_sessions/flagstaff-az-86004-1221-2

Next Business Meeting:

Our next business meeting will be February 11, 2016 at the East side Sizzlers at the corner of Highway 66 and Fanning. Dinner @1800 and meeting starts @1900.

Minutes of the Coconino Amateur Radio Club

1/14/2016

Meeting Started: 19:00

Secretary's Report: Since the minutes of the November meeting were published in the newsletter there was no need to read them. Janice Enloe moved and Bill Smith seconded a motion to accept the minutes as written. They were approved unanimously.

Treasurer's Report: Pat Traber, our club treasurer, gave the treasurer's report. The closing bank balance was \$2,935.82. Membership is 4 members, consisting of 4 lifetime members. (Did not include members who renewed since November). Scott Martin moved and Mike Clever seconded a motion to accept the Treasurer's Report as written. Unanimously accepted.

Guests: Kaci Heins from Northland Preparatory Academy. Kaci had two subjects to discuss with the CARC members:

1) the upcoming ISS communications via ham radio which will occur sometime in the Aug - Oct time frame, selected by the ISS crew. She would like a September communications schedule time to coincide with the Flagstaff Festival of Science. Joe Hobart asked for additional members to help/learn the procedures for the setup and operation of the ISS contact. To get alerts as to when the ISS is passing over Flagstaff go to <http://spotthestation.nasa.gov/home.cfm>. Pat also mentioned that Kaci Heins was awarded Middle School Teacher of the year;

2) the upcoming Balloon Launch for NPA which is scheduled for March 9th with March 10th and March 11th as backup days. The launch hanger will be open at 8:00 am and the launch is set for 9:00. Anyone interested in helping with the launch or chase teams is welcome to participate. As of now, we have 3 chase teams: 1) Tom can take one additional rider; 2) Scott can take one additional rider; and 3) Bobbie and Phil can take 2-3 additional riders.

Ian Torrance from the Stagecoach 100 Mile Race. We all thanked Ian for the donation of \$500.00 to CARC, which helped pay for our new UHF Repeater. Ian thanked us in return, emphasizing that he could not do the race without the radio support we supply. This year's race will be the 4th year and will be held on September 24-25th. The route and the station locations are the same as the 2015 race. Bill Smith (KQ1S) will be the coordinator this year.

President's Report: After Introductions, (we welcomed several guests to our meeting), Sandy Meadowcroft told us about a new ham who recently purchased a tower and needs help with erecting

it. She also thanked all members who volunteered their time to teach our Technician License Class last year. We have several new club members who earned a Technician License after attending the classes. Sandy asked if the club would like to hold another class starting in the March/April time frame. A question was raised as to whether there was any advantage in consolidating the class into an all weekend effort or continue with 8 Saturdays. A show of hands by members settled on keeping the 8 Saturday schedule. All the current instructors agreed to do another class and teach the same topics. She will publish a schedule soon by email.

Vice President's Report: Tom Shehan told the club that Digital Comm. is becoming an important skill for emergency response for us. He said that the Emergency Manager has requested that we develop a cadre of digital operators to man the EOC and other emergency locations using digital comm. We will work on developing additional presentations for meetings to increase our digital comm. capability.

New Business: There was no new business discussed.

Old Business:

CARC trailer replacement – there has been no progress in finding a new trailer. A cost limit of \$2,000 was confirmed as well as our target size of 12' for the trailer. The trailer would be used for radio equipment storage, transportation and as an operating station. Pat moved to continue searching for the right trailer for our needs, Bill seconded the motion which was approved unanimously. Joe cautioned us that we would have to make plans to secure storage and protection of the trailer.

Our new UHF Yaesu Repeater at Munds Park. Joe reported that the repeater is up and is currently operational. Note that the antenna is NOT on Mt Elden, therefore it might be difficult to acquire the repeater in some parts of Flagstaff.

New CARC mail list: please use carclist@googlegroups.com to send emails to the entire group.

Williams Repeater: Joe said that this repeater is currently out of commission and will probably not be fixed until the spring.

Elden Repeater: the 98 Repeater has recently dropped out during the Skywarn and ARES nets. Joe is monitoring the situation.

Sandy gave a TENTATIVE calendar of upcoming events:

Jan 16 Amateur Radio Exam at North Country Health Care. Joe has enough VEs.

February XX Special Amateur Radio Exam for Flagstaff HS students. Joe coordinating.

March 9 -11 Northland Preparatory Academy Balloon Launch.

April 16 Amateur Radio Exam at North Country Health Care. Joe coordinating.

April XX PFAC Wildland Fire Exercise, no date established yet. Joe coordinating.

May 20-22 Overland Expo: Demonstrations and Amateur Radio Exams, Tom coordinating.

June 4 Sacred Mt. Prayer Run. Janice coordinating

June 25-26 Field Day. Ron Gerlak coordinating. Satellite setup? It's a lot of work. Anyone interested.

July 4 Munds Park Parade. Pat coordinating. 1 mile parade needs about 10 members.

July 17 Snow Bowl Hill Climb. Sandy coordinating.

July 23 Radio Exam at Williams Hamfest. Joe coordinating.

Aug 6 Toys for Tots/Fat Tire Bike Race. Mike, Ron & Tom coordinating.

Aug 13 Big Brothers Big Sisters Run. Bob Meadowcroft coordinating.

Aug XX/Sep XX/Oct XX Northland Preparatory Academy to ISS Ham Radio Contact.

Sep 5 Williams 10K Labor Day Run

Sep 24-25 Flagstaff to Grand Canyon 100 Mile Run. Bill coordinating.

Oct 8 Soulstice Mountain Trail Run. Bob Meadowcroft coordinating.

Oct 15 Radio Exam at North Country Health Care. Joe coordinating.

Oct XX Northland Preparatory Academy Solar Observing. Joe coordinating.

Nov XX Emergency Management Exercise.

Nov XX Girl's - On -The - Run, Sandy coordinating.

Dec 3 Skywarn Recognition Day, NWS Belmont, Mike /Scott coordinating.

Dec 11 CARC Christmas Party. Sandy & Bob Meadowcroft hosting in their home.

ARES 50/50: Dinah Gillette won the 50/50 raffle.

There being no further business, Scott moved and Pat seconded a motion to adjourn. Passed unanimously.

Meeting Ended: 20:45.

Presentations: Joe talked about Digital Communications and the increasing use of ICS Forms for Emergency Management Exercises. He said that during the last exercise, a weak point in the EOC communications was the inconsistent use of ICS forms and the ability to send the forms over the radio. He stressed the importance of developing a strong digital capability. He encouraged members to learn digital over the next year with help from those members who are experienced in digital communications.

For those of you that have not tried HF, please consider it. Learn it, use it and stay current. In times of emergency, we will need all the good, practiced and available General and Extra HAM we can get.

Jan. 21,2016

For fun and safety become a Ham Radio Operator



Coconino Amateur Radio Club

Ham Radio Technician Licensing Class

The class is free.

The book is Ham Radio License Manual Level 1 Technician, third edition. Available from Amazon (\$23.03) Joe Hobart also has some books. Contact him if you wish to purchase one.

The licensing exam is \$15.00 (Date: TBA)

This class is designed to help you understand the basics of amateur radio operation and prepare for the licensing exam.

While it is better to attend all the classes it is not mandatory. Participants are welcome to select specific classes to attend if they wish.

Ham Radio Licensing Class - Technician Class (Based on the ARRL Technician Instructor Manual)

Presented by the Coconino Amateur Radio Club (CARC) <http://coco-radio.club>

Location: North Country Health Care facility at 2920 N 4th Street, Flagstaff, AZ 86004.

Homework assignments will be to read the chapter(s) to be covered and especially study the practice test questions .

For questions and to register: Contact Sandy Meadowcroft - (928) 660-8323
sandymeado2@yahoo.com

Class Dates and Times:

9:00 AM – 12:00 PM

Mar. 5	Apr. 9
Mar. 12	Apr. 16
Mar. 19	Apr. 23
Apr. 2	Apr. 30



Digital Communications Modes

Recently I was intrigued by some strange sounds heard on 40 meters between 7070 KHz and the beginning of the voice sub-band at 7125 KHz. Some sounded like noise, some like an unsteady tone, yet another sounded like a flute. A flute? We are not supposed to transmit music. With the exception of communications associated with the Space Shuttle, we have not been allowed to transmit music for decades.

So, What are these flute like sounds I heard on 40 meters in the evening and on 20 meters during the day? After searching the Internet, I read about a digital mode called Olivia that uses flute like tones to send text. I already knew about the warble-like sound of PSK-32 and the two tones of RTTY or radioteletype, but what about those that sounded like noise or maybe an animal in distress? And what about those back-and-forth modes that remind me of a ping-pong tournament?

More searching of the Internet led me to some sounds and sights(?) of digital modes:

<http://www.w1hkj.com/FldigiHelp-3.21/Modes/>

There are MANY different sounds on this Internet resource by W1HKJ; take a listen, but turn your volume down, especially if you use headphones. There are two modes that sound like a flute: Olivia and JT65-HF. The sights are as seen on a free, popular digital program, Fldigi.

This W1HKJ web site also has a "Mode Comparison" page. This page compares performance of popular digital modes; this is especially important for reliable digital communications - perhaps under emergency conditions.

Other sources of digital communications sounds:

<http://www.nonstopsystems.com/radio/radio-sounds.html>

http://www.sigidwiki.com/wiki/Category:Amateur_Radio

But what about those ping-pong sounds? Here is a recording of Pactor, which is used by the National Traffic System and to access the Winlink worldwide, high frequency email system:

http://www1.scs-ptc.com/download/arg_pt3.mp3

Note the strong data signal followed by the weak acknowledgment. Pactor provides 100% error free and fast data communications, but the hardware modems are expensive.

Sounds of all three Pactor modes and Amtor modes are available at the bottom of:

<http://www1.scs-ptc.com/pactor.html>

Those are some common sounds of digital modes, but what is an operator to do: some modes and their variations sound so similar that telling them apart is difficult. There is a solution: a free program mentioned above, Fldigi, can help you determine many types of digital signals and decode those signal to something you can read. An Fldigi feature, RxID, will identify the digital mode provided the transmission includes an identifying pre-signal. Many operators, especially those calling CQ, include the identification. I have even heard the identifying signal on PSK-31 transmissions.

Members of the two Arizona RACES nets have been practicing sending digital messages including ARRL Radiograms and the ICS-213 General Message forms. Several Coconino ARES members have also been practicing using these digital modes. Our practice sessions have been highly successful.

Another digital mode used primarily on VHF is Packet. Many hams use Packet for APRS, access to Winlink Packet gateways, and for public service event participant tracking. We will discuss some of these applications at the February 11 CARC meeting.

You can also hear live sounds of VHF Packet by tuning your FM mobile or hand-held radio to 144.390 MHz and listening to the Mount Elden (and other) ARPS digital repeaters. Mingus Mountain has an APRS repeater, but you may need an outside antenna to hear transmissions from Mingus. One way to decode those raw sounding signals is to use APRS Droid (\$5) on your tablet and hold the tablet microphone near the radio speaker.

ARES is adding digital modes to the toolkit; using digital modes requires a computer, an interface, your radio, and some practice. ARES will use 2 meter packet and several high frequency modes,

especially MT-63. Erv, Janice, Lee, and I have been practicing high frequency modes. Several have also been practicing VHF packet using the Mount Elden packet repeater on 145.010 MHz. Another free program, RMS Express, works well sending messages and email over VHF Packet.

Who would like to join in digital practice? Help is available to set up equipment and become familiar with digital modes. JT65-HF has been used from Sun City to contact a Japanese station using only a fraction of a watt of power.

73,
Joe, W7LUX

Additional Internet resources:

<http://www.essexham.co.uk/news/what-is-jt65.html>

<http://www.w1hkj.com/FldigiHelp-3.21/Modes/>

ARRL Intro to digital:

<http://www.arrl.org/files/file/Get%20on%20the%20Air%20with%20HF%20Digital/Introduction%20to%20Digital%20Modes.pps>

February 10 Mohave County Exercise

Coconino ARES has been asked to help with the Mohave County exercise Wednesday, 10 February. Our part will be to help Mohave ARES prove communications with the Arizona EOC in Phoenix and with nearby counties. The 40 meter frequency will be about 7252 KHz LSB. Time will be about 10:30 to about 11:00 MST.

This will give us an opportunity to exercise our high frequency communications. We will probably exchange signal reports, and there may be traffic for the Red Cross.
