





Save The Date

PARC Board of
Directors Meeting
7pm
12 October 2016

14322 Pomerado Road,
Poway, CA 92064

Club Meeting
7:30pm
5 October 2016

Carlsbad Safety Center, 2560
Orion Way, Carlsbad

Annual Auction!

Oceanside CERT Academy
6, 8, 13, 15 October 2016
See page 9!

San Diego Hamfest
1 October 2016
and
San Diego Maker Faire
1-2 October 2016



Save the Date	2
Wires-X Experiment	4
Club Classified Ads	5

Reports

Committee Chairs & Board	6
San Diego Hamfest	7
Oceanside Cert Training	8
Amateur Radio at Maker Faire	9
About Our Scholars	11
Club Financial Update	12
Reported ATV Status	13
Reported Repeater Status	14
Membership Committee Report	15
Radio Scouting Report	16

Features

TAPR DCC Report	18
Mesh SIG Sidebar	23
Puzzle!	25
Nothing New Under the Sun	26
Harbor Days	27
Bylaws Update	28
Donate Through Amazon	38
Worked All States - Help!	39
Submission Guidelines	40
Back Page	41

Greetings fellow HAMs!

Thank you to all who showed up for the picnic! We had a great time with the T-Hunt that was led by Greg KI6RXX and gave away a bunch of prizes for Participation points.

We have a lot of exciting events coming up, including the Auction, work party on the hill, and great programs in the coming months.

Please continue to utilize the repeaters and report any issues you may hear to the board (interference, squelch/noise issues, etc).

Thanks again everyone for your involvement in the club!

73 de K6JPE

For the October meeting, Palomar Amateur Radio Club will have the annual club auction.

Set-up of the Carlsbad safety center for the auction will start at 5:30 PM, Wednesday October 5th. Hams wishing to sell items may enter the Carlsbad safety center between 6:00 PM until 6:30 PM. Buyers may examine the merchandise between 6:30 PM and 7:00 PM. The auction will begin at 7:00 PM.



Please help us test a potential upcoming feature for our repeater site. We have a Wires-X node on 147.555. It's KK6OOZ, and we would like to invite club members with C4FM capability to use it, upload text and pictures, and report if you are able to reach it in its current location.

The equipment is currently set to high power. Thank you to everyone that reported in their attempts at low power!

Eventually, this node may be moved in frequency to link one of our digital repeaters to the Wires-X international network. We need a simplex mapping in order to best evaluate the correct power settings and decide whether or not the node's location will work out.

Attempt to check in and report your success to board@palomararc.org
Thank you!



KK6OOZ Wires-X QSL Card for PARC Experiments



A QSL Card that we've received over Wires-X

RF PARTS[™]
COMPANY
From Milliwatts to Kilowatts[™]

Complete inventory for servicing amateur and commercial communications equipment

RF POWER TRANSISTORS — TUBES — POWER MODULES

Diodes • Relays • Trimmers • Capacitors • Heatsinks
Transformers • Chokes • Combiners • Wattmeters • Books

3-500ZG • 811a • 572B • 4-400a • 6146B • 8072 • 8560AS
3CX400A7 • 3CX1200A7/D7/Z7 • 3CX1500A7 • 3CX3000A7
4CX250B • 4CX250R • 4CX400A • 4CX800A • 4CX1500B

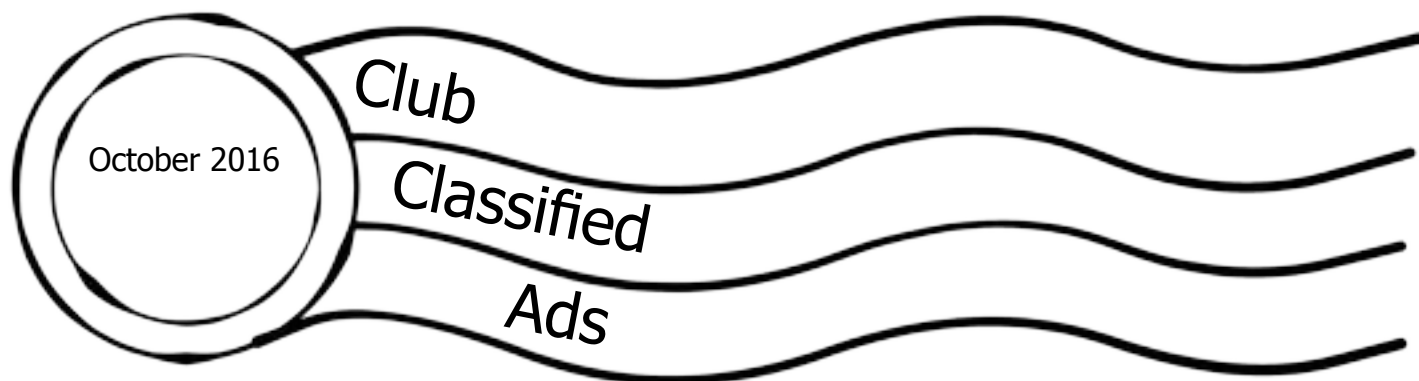
Merit W6NQ • Gary K6CAQ • Steve K6NDG • Rob WA6GYG • Doug K6DRA

760-744-0700

www.rfparts.com • orders@rfparts.com

Please support our advertisers. Their support of the club is vital.

{special}
THANKS
to our sponsors



FOR SALE!

Yaesu FT-270R -- Rugged 2m HT

5 watts RF, 800mW audio for noisy environments, submersible 30 min at 3 feet (IPX7). New condition, two months old, used once in the field. Includes packaging, documentation, etc. \$80. Email to KK6LWE@arrl.net

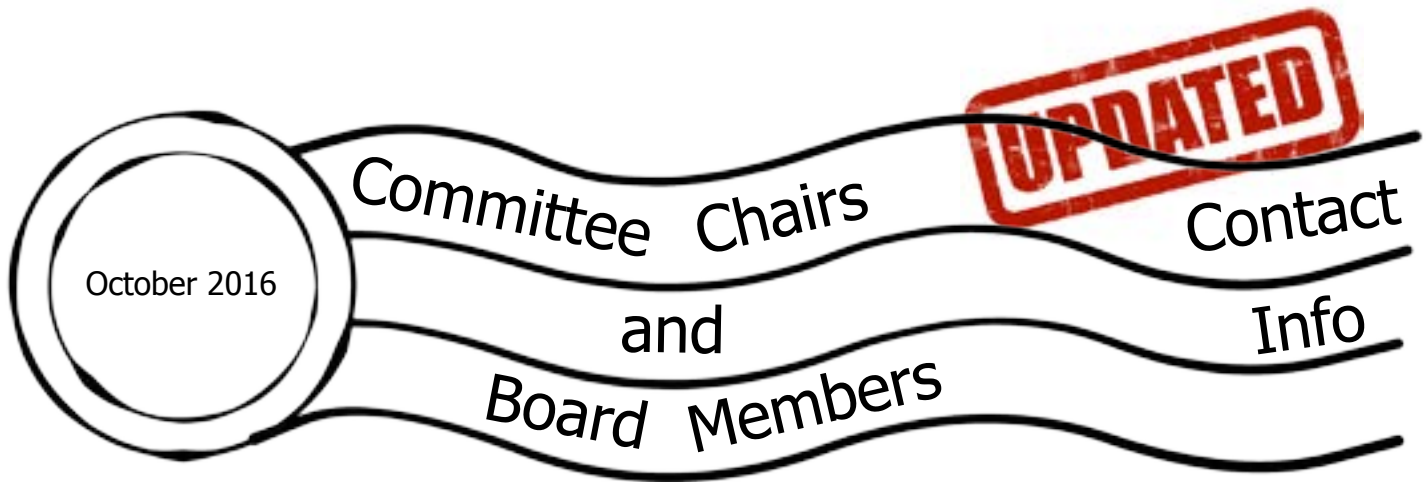
Advertisements are free for members

Have items that need to find a new home? Advertise here! Send your ads to scope@palomararc.org

Club Members ONLY!

PARC has a tube bank that includes many 6 & 12 volt receiving tubes (and some transmitting types) for use by club members to repair their own personal equipment. Not for commercial use or resale. If we have your requests, we will pre-check the tubes and deliver them to you at the next club meeting.

Contact John WB6IQS WB6IQS@att.net



Current Board of Directors

President	Joe Peterson K6JPE	(619) 630-8283
Vice President	Michael Gottlieb KB6D	(858) 212-4646 (text welcome)
Treasurer	Tom Ellett W0NI	(858) 546-1148
Secretary	Sandy Pratt KK6EED	(858) 748-2611
Director #1	Kevin Walsh KK6FRK	(858) 722-5069 (text welcome)
Director #2	John Walker AC7GK	(949) 212-5533
Membership Chair	Glen Christensen AI6RR	(858) 735-1144
Repeater Technical Chair	Mark Raptis KF6WTN	
Scope Editor	Michelle Thompson W5NYV	(858) 229-3399 (text welcome)

Not on the Board

Repeater Site Chair Mark Raptis KF6WTN (acting)

The board members might have callsign@amsat.org mail aliases.

Committee Chairs

Digital ATV	open, group forming	atv@palomararc.org
EchoLink	Bernie Lafreniere N6FN	N6FN@niftyaccessories.com
HF Remote	HF Remote SIG	hfremito@palomararc.org
mesh networking	open, group forming	mesh@palomararc.org
Operating Day	Tom Martin K6RCW	k6rcw@amsat.org
SANDARC Representative	John Walker AC7GK	ac7gkjohn@gmail.com
SANDARC Representative	Paul Williamson KB5MU	kb5mu@amsat.org
SANDARC Alternate	Michelle Thompson W5NYV	w5nyv@amsat.org
SD Microwave Group Liaison	Kerry Banke N6IZW	kbanke@sbcglobal.net



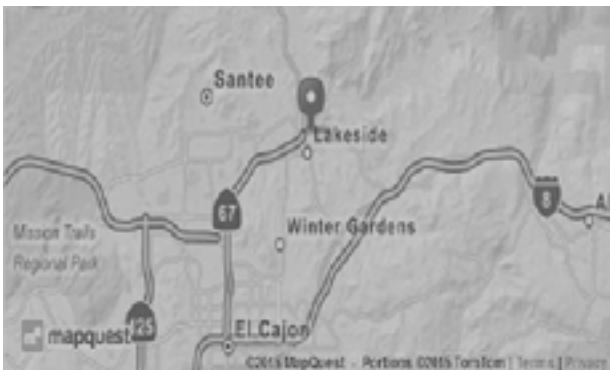


SAN DIEGO



HAMFEST 2016

DATE: OCTOBER 1, 2016



SPONSORED BY: LAKESIDE AMATEUR RADIO CLUB
VISIT US AT: WWW.LAKESIDEARC.ORG

**Like us on
Facebook!**



Time: 7AM—3PM

6AM “Old Radio Trade Show”

Old Radio Trade Show In parking lot !

Ham Fest Cost: \$5.00

Old Radio Trade Show “\$5.00 To Show”

Location:

Lakeside Rodeo Grounds

12584 Maplevue St. Lakeside CA.

Free Parking and Antenna Friendly.

***You are cordially invited to attend the
2nd Annual San Diego Hamfest 2016. We***

plan on starting out the day with a Old

Radio Trade Show, Vendors,

Speaker Forums, and VE Testing.

So come on out and let's Ham it Up!

**For the most up to date information
please visit: www.SDhamfest.org**

QLS/SDHAMFEST2016-ver1.0

What is Oceanside CERT?

Following a major disaster, first responders who provide fire and medical services will not be able to meet the demand for these services. Factors such as number of victims, communication failures, and road blockages will prevent people from accessing emergency services they have come to expect at a moment's notice through 911. People will have to rely on each other for help in order to meet their immediate lifesaving and life sustaining needs.

CERT (Community Emergency Response Team) is about readiness, people helping people, rescuer safety, and doing the greatest good for the greatest number. CERT is a positive and realistic approach to emergency and disaster situations where citizens will be initially on their own and their actions can make a difference. Through training, citizens can manage utilities and put out small fires; treat the three killers by opening airways, controlling bleeding, and treating for shock; provide basic medical aid; search for and rescue victims safely; and organize themselves and spontaneous volunteers to be effective.

In 2005, the Oceanside Fire Department started the community's CERT program. The program was initially funded by a County grant and supported with a small budget from the Fire Department. After much planning and work, the 1st class was delivered in the Fall of 2005 and it graduated about 25 citizens.

Since then, the program has grown to support a volunteer organization called Oceanside CERT which now has an elected board of directors to oversee and manage the group. Oceanside CERT recently obtained its 501.c3 non-profit tax status. The Fire Department serves as the program advisor to the group and as the sponsoring representative to the San Diego County CERT Council.

The program now has over 300 trained community members and City employees. About 125 of these dedicated volunteers are active members that continue to attend quarterly training sessions and participate in various community fairs and PR opportunities.

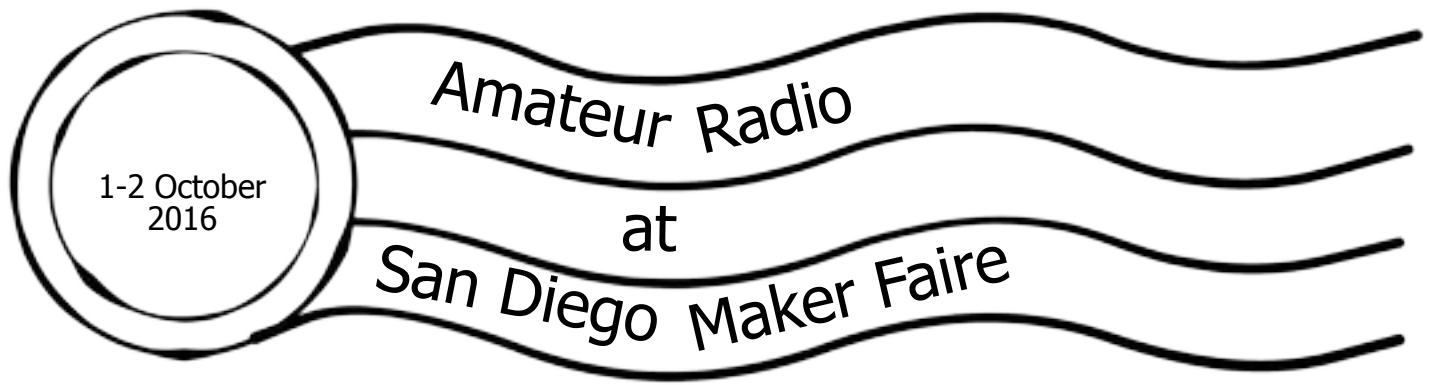
The Community of Oceanside has a population of about 180,000 and is approximately 42 square miles in size.

Oceanside CERT is authorized by the Oceanside Fire Department, the San Diego County Unified Disaster Council, and the San Diego County CERT Council.



OCEANSIDE CERT'S NEXT ACADEMY IS OCTOBER 6TH, 8TH, 13TH, & 15TH (THURS & SAT). ATTENDANCE ALL 4 DAYS IS MANDATORY FOR GRADUATION.

<http://www.oceansideCERT.org>



Maker Faire San Diego, a celebration of the Maker Movement and the do-it-yourself culture, returns to Balboa Park October 1-2. With air rockets, robots, towering sculptures, and a world of virtual reality, San Diegans are invited to be creative, engage some amazing technology, and get their hands dirty.

Early bird tickets for Maker Faire San Diego are on-sale now! Adult prices start at \$15. Children prices start at \$10. Admission includes entry to participating venues. To purchase tickets on the newly redesigned website, visit www.sdmakerfaire.org.

The Balboa Park Cultural Partnership and San Diego Makers Guild will partner with the City of San Diego to put on the event showcasing innovators and creators. Part high-tech science fair, part-county fair, part something entirely new, Maker Faire is an all-ages gathering of tech enthusiasts, engineers, artists, scientists, cosplayers, and more. Makers will be sharing, showing, and making awe-inspiring creations that are practical, built for fun, or constructed just to push the limits of imagination and technology. All of these makers come to Maker Faire to show what they have created to a community that fearlessly celebrates innovation, creativity, and learning-through-doing.

Over 10 institutions in Balboa Park will be participating in this year's Maker Faire San Diego:

- Japanese Friendship Garden
- Museum of Photographic Arts
- Reuben H. Fleet Science Center
- San Diego Air & Space Museum
- San Diego Automotive Museum
- San Diego Hall of Champions
- San Diego History Center
- San Diego Model Railroad Museum
- San Diego Museum of Man
- San Diego Natural History Museum
- The Old Globe

WHAT IS MAKER FAIRE:

Maker Faire is an award winning, family friendly event celebrating technology, education, science, arts, crafts, engineering, food, sustainability, and more. Maker Faire has become part of pop-culture, a place for experiential marketing, debuting new technologies and inventions, and celebrating geekdom. Maker Media produces two annual flagship Maker Faires, partners with museums to produce Featured Maker Faires, and works with communities to license Mini Maker Faires around the world.

MAKER FAIRE SAN DIEGO:

Maker Faire San Diego is a festival of invention, creativity and resourcefulness, and a celebration of the Maker Movement and Do-It-Yourself Culture in the San Diego Region. Unique from other Maker Faires, MFSD will incorporate all of Balboa Park in what is being called an "outside-in" model to include Maker exhibitions within the museums as well as throughout the Balboa Park.

HISTORY OF MAKER FAIRE:

The first Maker Faire launched in May 2006 in the San Francisco Bay Area and was quickly followed by Faires in Austin, Detroit and New York City, as well as others around the world. Technology has

lowered the barriers to becoming a Maker and this has launched the Maker Movement, which fuels Maker Faire. Maker Faire was designed to be forward-looking, showcasing Makers who are exploring new forms and new technologies. But it is not just for exhibiting what is new in technical fields - Maker Faire features innovation and experimentation across the spectrum of science, engineering, art, performance, and craft.

WEBSITE: <http://sdmakerfaire.org/>

FACEBOOK: <https://www.facebook.com/SDMakerFaire>

TWITTER: <https://twitter.com/SDMakerFaire>

INSTAGRAM: <https://instagram.com/sdmakerfaire/>

ABOUT SAN DIEGO MAKERS GUILD:

The San Diego Makers Guild is a nonprofit that is committed to fostering the maker community and to promoting, showcasing, and encouraging adoption of making by individuals and public and private institutions, with the goal of advancing education, innovation, commerce and lifelong learning. Our vision is to help develop San Diego into a nationally known maker city. Learn more at www.SDMakersGuild.org.



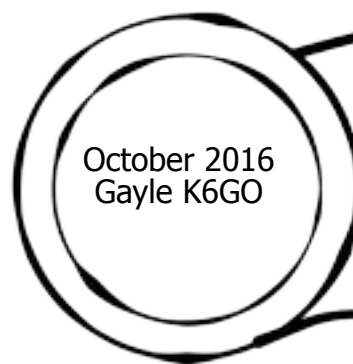
So where does amateur radio fit into to Maker Faire? Plenty of places! One of the most recognizable amateur radio installations has been Not Your Grandfather's Ham Radio. Members of the San Bernardino Microwave Society have anchored this interactive, engaging exhibit for the past several years.

San Diego Microwave Group fielded an excellent interactive demonstration with 10GHz transmitter hunting at the 2015 San Diego Maker Faire. Amateur radio demonstrations by PARC members were an appreciated attraction at the 2013 San Diego Mini Maker Faire.

For 2016, San Diego Microwave Group has applied for space at San Diego Maker Fair. Contact Kerry Banke N6IZW at kbanke@sbcglobal.net in order to help demonstrate amateur radio to as many of the the 15,000 people expected at Maker Faire this year!

Participants at Maker Faire are interested in building, learning, and doing things with technology. The spirit is positive and can-do. The crowd is young and dynamic. The event is a full two days. Setup and teardown times are more than generous for radio demonstrations. Amateur radio is a big part of the maker movement. Come help show it off this year!





About our
Scholars!

SPONSORED BY PARC

PARC Student Scholarship

The Palomar Amateur Radio Club is creating at least one amateur radio scholarship for San Diego students to promote our goal of fostering our hobby and motivating young hams.

QST has three pages of the pictures of the recipients of the 2016 ARRL scholarships. Only two went to a California student! The survival of The Amateur Radio Service depends on us. If we do not act, who will succeed us? Our youth are our future.

To that end we are looking for funding sources especially corporate ones. We have two letters requesting scholarship funds from companies and corporations: one that is general, and one where we can use the name of the referring employee. Either one could be addressed to a specific person in the company.

Club members have indicated that we have members who work at companies that could be looking for a charitable tax contribution donation. If you work for one of these companies and you would like to come forward with a contact person, please contact us at board@palomararc.org with a possible contact person. We can send the letter we have created or if you are so inclined, you could personally deliver it.

Looking For High School Seniors

Calling for Applicants for the 2017 ARRL Foundation scholarship program. Applications will be accepted between midnight, October 1, 2016 and 11:59 PM Eastern Standard Time January 31, 2017. Transcripts must be received by Thursday, February 16, 2017.

The scholarship descriptions are all on line where you will find a brief summary of the terms and conditions required by the donors of the scholarships or established by the ARRL Foundation Board of Directors. (According to the ARRL Foundation, the brief descriptions may not include complete selection criteria and are subject to change without notice.)

There are 84 scholarships. (Some have insufficient funds and some are inactive.)

Only 20 have no geographical restrictions. 2 are for California students.

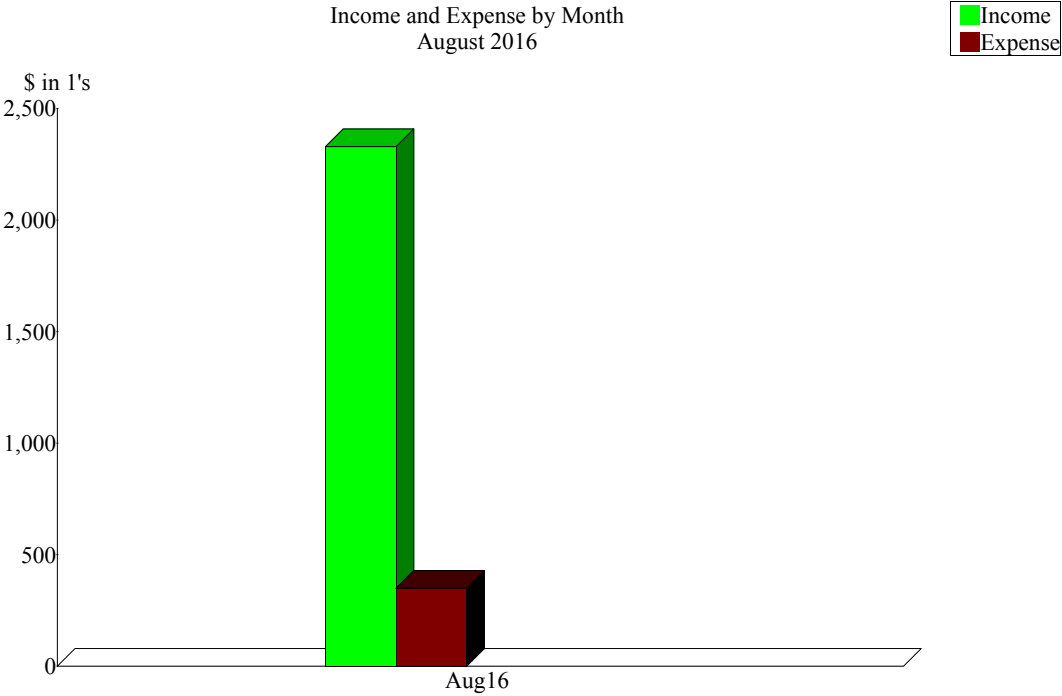
Please go to:

<http://www.arrl.org/the-arrrl-foundation>
then choose Scholarship Program from the left menu
<http://www.arrl.org/scholarship-program>
then you can review the details for each one
<http://www.arrl.org/scholarship-descriptions>

We hope to see your name and picture in QST this time next year!

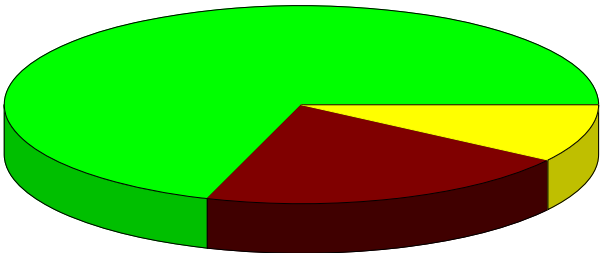
15 August
2016

Club
Financial
Update

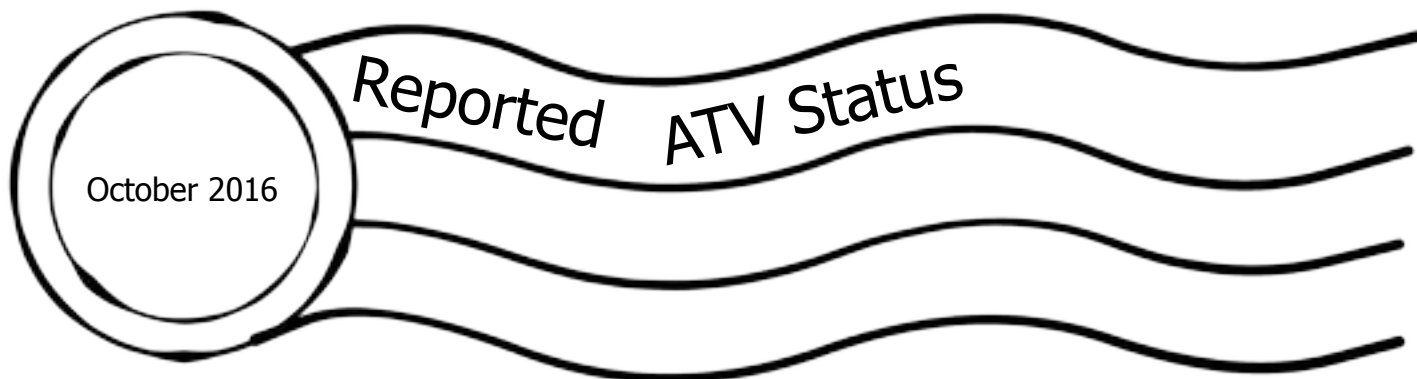


Expense Summary
August 2016

Equipment Storage	\$ 245.00
Rptr Electric	72.72
Rptr Phone	32.20
Total	\$349.92



By Account



ATV system renovations have begun!
Contact board@palomararc.org if you
want to be involved.

At a minimum, upgrades to include
DVB-T transmission, ATN linking,
and substantially reduced cost and
complexity to enjoy this mode.

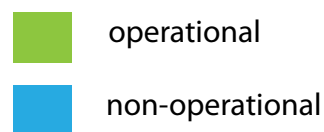
PARC
ATV
System

915 MHz WBFM in
5.8 MHz audio subcarrier

146.415
79.7
intercom

1241.25 MHz VSB out
NTSC standard

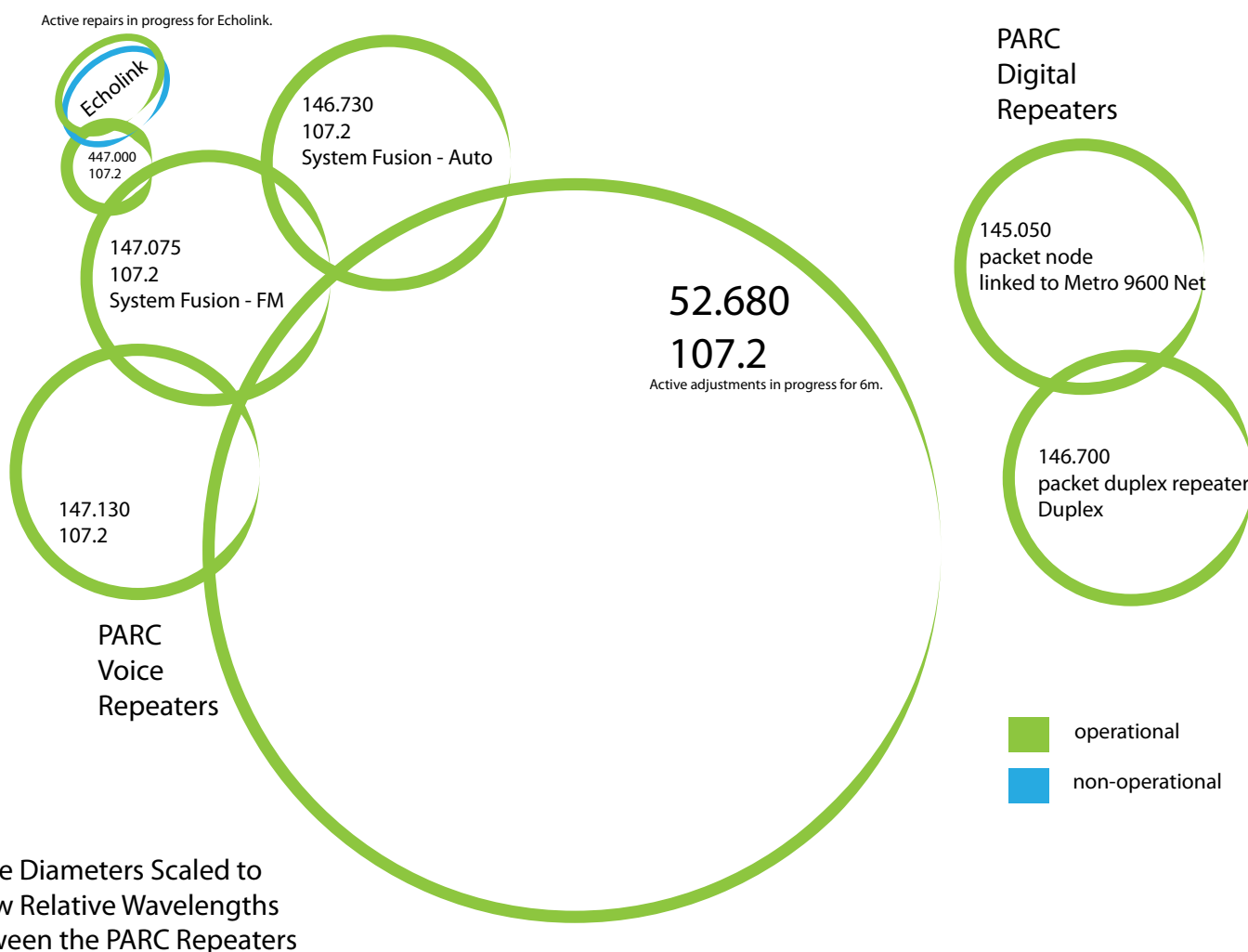
2441.5 MHz WBFM in
6.0 MHz audio subcarrier



Circle Diameters Scaled to
Show Relative Wavelengths
Between Equipment

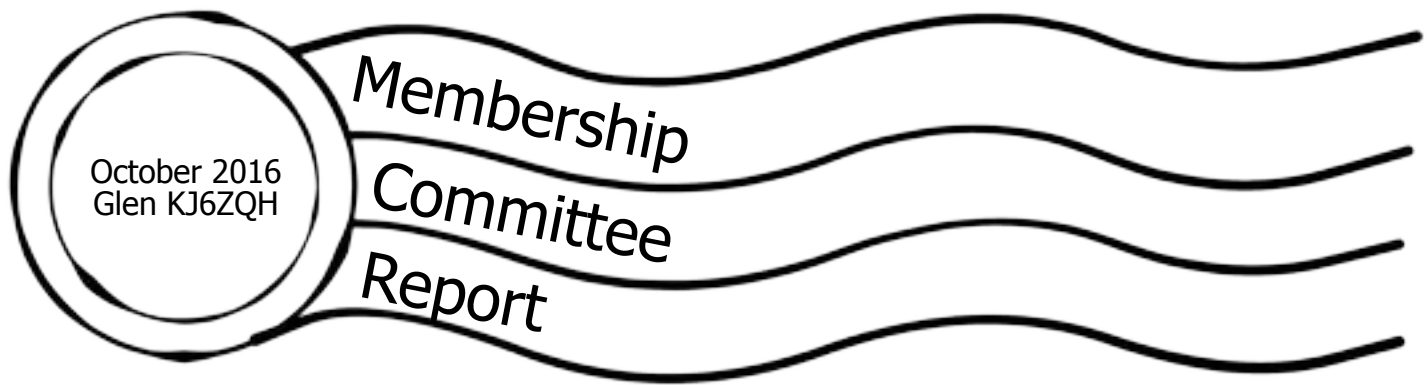
Reported Repeater Status

October 2016



The 6m repeater has been repaired! Some additional work remains to fully tune the repeater, but essential functionality has been restored after a 3+ year hiatus. Thank you to Mark KF6WTN, John WB6IQS, the PARC board of directors, and our 6m cavity donor.

Try it out and send your reports to board@palomararc.org



From the Membership Table

You can check the status of your membership 24/7 at [Member List](#) (or go to the club's website and navigate to Join and click on "here" at the top of the page. Enter your call sign into the box and click the "Look up my membership status now" button.

To renew your membership or extend your membership, fill in the form on the Join page. Make sure you select the correct value from each of the drop-down menus (Type of Membership, How many years, I'm an ARRL Member, Newsletter option and License Class). If you want to receive an email when your membership is coming due for renewal, please make sure that I have a valid email address for you. To do that, please send an email to

Membership@palomarc.org.



World Scout Jamboree On the Air Friday to Sunday – October 14–16 & SDIC STEM Fair – Saturday October 15

- Cub and Boy Scouts of all ages please join us for the 59th annual World Scout Jamboree on the Air, Friday to Sunday - October 14-16, and the San Diego-Imperial Council STEM Fair, Saturday October 15, 8:00 AM to 4:30 PM at Camp Balboa
- Cool STEM activities include:
 - Talking to Scouts all over the world on amateur radio
 - Tiger Cub *Sky is the Limit* Adventure workshop presented by the San Diego Astronomy Association
 - Cub Scout Nova *Out of this World* award workshop presented by the San Diego Astronomy Association
 - Digital Technology Merit Badge workshop presented by Securing our eCity Foundation
 - Radio Merit Badge workshop presented by the SDIC Radio Scouting Committee
 - Robotics Merit Badge workshop presented by Southwest Robotics in Science Education
 - Cub and Boy Scout Cyber Chip workshops presented by Securing our eCity Foundation
 - Robotics, amateur radio, and other cool tech demonstrations
- **Unit overnight camping available Friday and Saturday, including Jamboree On the Air activities Friday evening and Sunday morning**
- Other specifics:
 - Registration available at <http://sdicbsa.org/ACS/>
 - Cost: \$10 per Scout (additional \$30 fee for Robotics Merit Badge)
 - Scouts should bring lunch, beverages, and snacks for the day Saturday
 - See next page for award pre-requisite requirements
 - Units that participate as a group may register and pay for overnight camping directly with the Council Camping Department, and must bring all food and camping gear





World Scout Jamboree On the Air & STEM Fair – Saturday October 15

- Scouts who register for the below-listed awards must:
 - Complete the listed award requirements before the event (i.e. pre-requisites), or complete the requirements after the event to finish earning the award
 - Print and bring the award workbook with them as indicated below
 - Bring a Troop-signed Blue Card for a Merit Badge
- Awards:
 - Tiger Cub *Sky is the Limit* Adventure: Pre-requisite requirement no. 1
 - Cub Scout *Nova Out of This World*: Pre-requisite requirement no. 2
 - Radio Merit Badge: Pre-requisite requirements no. 1, 2, and 8; workbook: <http://meritbadge.org/wiki/images/1/10/Radio.pdf>
 - Robotics Merit Badge: Pre-requisite requirements no. 1, 2, 3, and 7; workbook: <http://meritbadge.org/wiki/images/7/7a/Robotics.pdf>
 - Digital Technology Merit Badge: Pre-requisite requirements no. 5(b) and 6; workbook: http://meritbadge.org/wiki/images/d/d2/Digital_Technology.pdf
 - Cub Scout Cyber Chip: No pre-requisites
 - Boy Scout Grades 6 to 8 Cyber Chip: Pre-requisite requirements no. 2 and 5; workbook: http://meritbadge.org/wiki/images/b/b4/Boy_Scout_Cyber_Chip.pdf
 - Boy Scout Grades 9 to 12 Cyber Chip: Pre-requisite requirements no. 2, 3, and 6; workbook: http://meritbadge.org/wiki/images/b/b4/Boy_Scout_Cyber_Chip.pdf

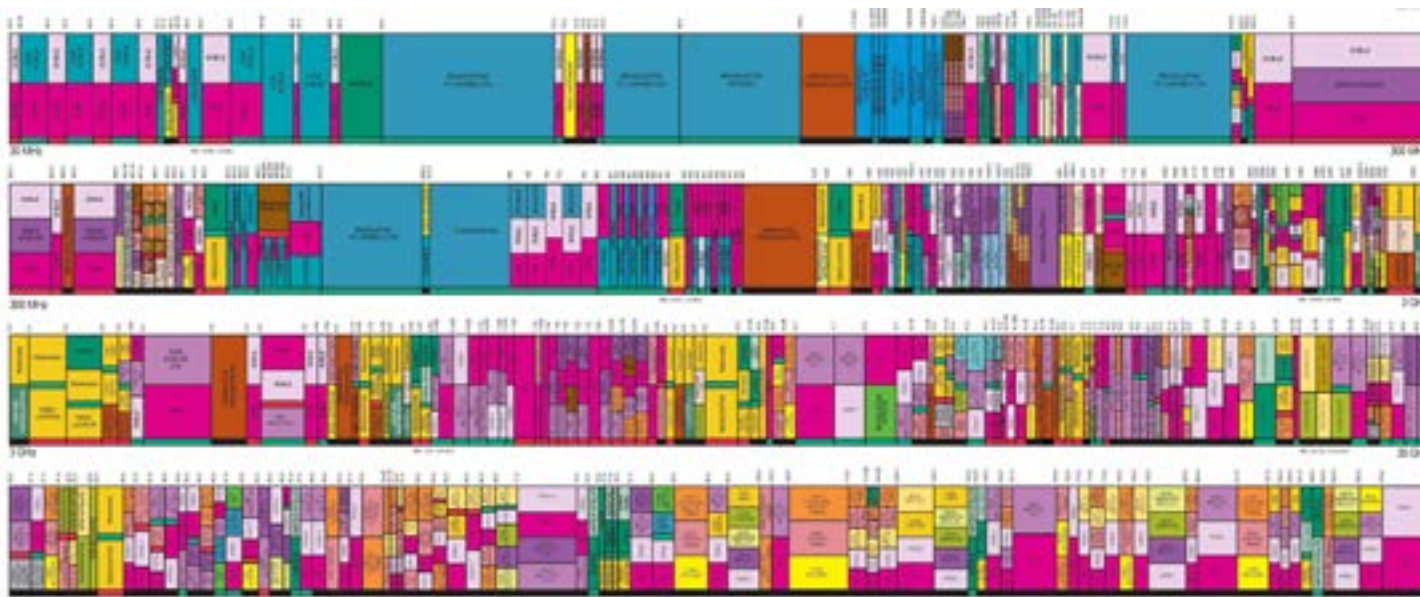
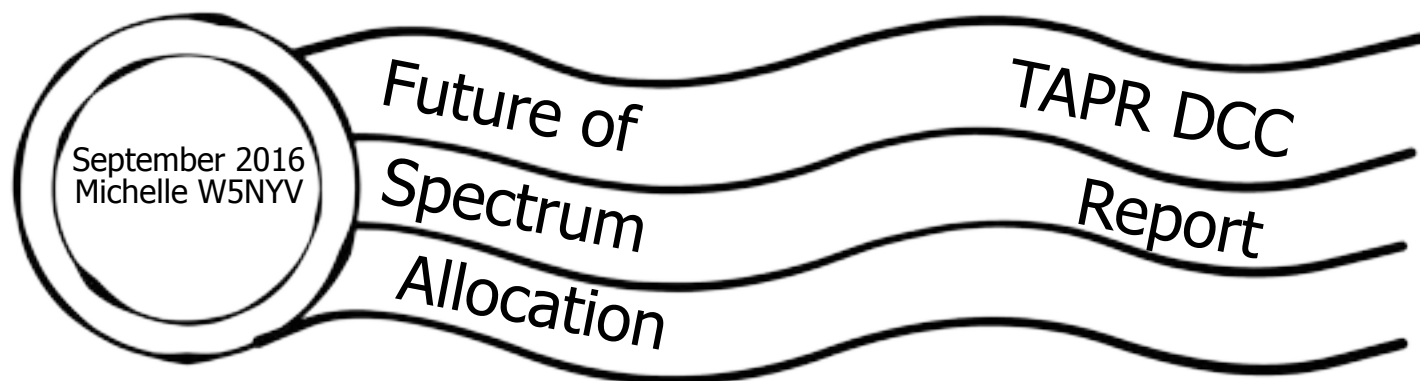


IMPULSE Electronics .com

Wouxun Radios and Accessories
Powerpole Connectors
Power Cables
Coax Cable
Coax Connectors
Custom Cable Assemblies
AGM Batteries and Accessories
CTek & UPG Batteries Chargers
Fuses and Holders
Terminals and Splices
Tools
RF Industries Coax Adapters



(866) 747-5277



Bob McGwier N4HY and I had the opportunity to present the Tucson Amateur Packet Radio Digital Communications Conference 2016 Sunday Tutorial session. DCC was held in St. Petersburg, Florida over the weekend of September 16th. The Sunday tutorial session is a DCC tradition that allows a deep dive into a subject of interest to the amateur radio community. Bob and I selected the spectrum crisis as the context, and the DARPA Spectrum Collaboration Challenge as the central subject. Our aim was to present a history of spectrum management, amateur innovation, and a prediction of the future role of SDRs, machine learning, and cognitive radio in spectrum management.

Spectrum has been traditionally managed much like land is zoned. In the above spectrum usage chart, one can see great similarity between spectrum allocation and urban zoning. Each block, if it's licensed, has a designated "owner" or operator. A particular type of activity or spectral emission is allowed in that particular property or band. The term for this type of management is **planned isolation**. Planned isolation works well, up to a point.

In cities across the world, challenges to planned isolation land zoning come up all the time. Some examples include Austin, TX and their struggles with short-term rental market, New York and rent controls, San Francisco and Rent Controls, The 26-year-long shutdown of the California Theater right here in San Diego, and most dramatically the existence and ultimate bulldozing of the City of Kowloon.

That point, where planned isolation breaks down or when other management methodologies are enabled by technological advancement, is arguably upon us when it comes to spectrum management.

Spectrum is like land in that it's a finite resource and can be divided. If you want to use it, you can license it. If you follow certain rules, then you can use it without a license.

Spectrum is not like land because spectrum can be immediately re-used. I can't have a house one

day and then a water treatment plant the next day and then a restaurant the day after that on the same lot. But I can do something like this with spectrum. Spectrum is fundamentally different than land because I can immediately re-use it. Yes, spectral users like big radar installations are essentially permanent on the order of decades. However, if I decommission that radar, that spectrum is immediately, instantly re-usable. With no delay, no scarring, no environmental impact, nothing. It's as if the system never existed at all. The planned isolation land metaphor fails here completely because it doesn't allow for flexible, opportunistic, efficient re-use.

The cost to redevelop land means that re-use is simply not designed into the land management legal system. A similar approach to spectrum management hasn't caused much trouble and was a good way to manage spectrum for over 100 years. Radios were fixed, computing speed wasn't fast enough, and machine learning not powerful enough to re-assign or re-configure deployed radios. These limitations have changed, and spectrum allocation is directly affected.

There both is and is not a spectrum crisis. There is a lot of under utilized spectrum in the same way there is a lot of under utilized land. It's no mystery why almost no one wants to live in an active volcano, on an ice sheet, deep in a remote desert, underwater, or on an unstable cliff. It's no mystery why plenty of people pay large amounts of money to live in pleasant climates, in attractive surroundings, and near convenient man-made or natural resources. This means that land utilization, like spectral utilization, is very unevenly distributed. Plenty of people want certain bands. Other bands go relatively unused. In both cases, land and spectrum, the desirability is a question of physics.

Some bands provide better range. Some bands provide better bandwidth. Some bands behave reliably. Some bands fluctuate wildly. The process of staking out a claim on exclusive use within a band is a complex process of intense compromise. Our job as amateurs is to understand our value, communicate technical, educational, service, and political issues clearly, and advocate for the use of the spectrum we have. Use it or lose it, but understand it too!

It can be a tall order. Vast structures of unlicensed operation seem to rise up from nowhere. For example, the LoRa community is experiencing explosive growth. The number of LoRa radios is increasing because there is an Internet of Things (IoT) hole to fill with the sun setting of 2G without a ready replacement in 5G.

There are entire ecosystems of unlicensed radios that have come and gone. In some cases, the amateur bands were affected. In other cases, we never knew they were there.

With spectrum in increasing demand, an obvious solution is to simply monitor and measure it, and then allocate usage more efficiently. How hard can that be?

Well, as it turns out, that can be pretty hard! If you've ever worked with directional signals or with sets of heterogeneous signals, you know that depending on where you're located and which direction your antennas are pointing, you might entirely miss signals. They might be weak or strong, but unless you can measure in every direction at once, you will not see the true usage of the band.

In the case of heterogenous signal types, it's entirely possible to completely miss secondary users of the bands, no matter how good your antenna coverage.

One example of a monitoring system is the NTIA/NIST Spectrum Monitoring Pilot Program. The spectrum monitoring in this program is narrowly defined. For example, missions include "Find out what sort of interference this particular LTE system is experiencing."

When the clients are incumbent primary use licensees, you can imagine that these clients would like the results of the monitoring program to squash sharing, not enable it. There are plenty of competing interests out there, and shaping monitoring programs to show what you as an incumbent operator wants is all part of the process.

Spectrum monitoring is both technically and politically difficult. We've tried top down approaches to measuring broad swaths of spectrum. In 2003, the FCC tried an Interference Temperature program. It failed, primarily due to the massive number of required sensors and the difficulty of measuring all waveforms.

Monitoring works in limited ways on limited bands in limited areas. Even with those carefully constructed monitoring programs you will miss heterogeneous signals, secondary users, directional interference, and lots of other things. You do not in any way have total situational awareness.

This is the equivalent of only being able to check on green buildings for code violations but only on Thursdays, if the roof is black. You will miss all the other code violations, but you will have a pretty good chance of catching the Thursday green building with black roof problems.

There are bands where it's easier. I think HF would qualify here.

An Overview of the NTIA/NIST Spectrum Monitoring Pilot Program

M. Cotton, J. Wepman, J. Kub, S. Engelking, Y. Lo,
H. Ottke, R. Kaiser, D. Anderson
U.S. Department of Commerce
NTIA/ITS
Boulder, Colorado, U.S.A.
mcotton@its.bldrdoc.gov

M. Souryal, M. Ranganathan
U.S. Department of Commerce
NIST/CTL
Gaithersburg, Maryland, U.S.A.
souryal@nist.gov

Abstract—This paper provides an overview of a Spectrum Monitoring Pilot Program within the U.S. Department of Commerce. It provides background, motivation, goals, accomplishments, and plans for future work. We describe the development of a federated Measured Spectrum Occupancy Database (MSOD) architecture that allows organizations to host MSOD instances and contribute data to the overall program. We

of data types to suit their purposes. The means of acquiring the data also varies and there is no one-size-fits-all approach. With all these disparate sources, types, and methods, there is a need for infrastructure and standardization to aggregate and achieve full collective value of the data.

Pursuant to the 2013 Presidential Memorandum [6], NTIA

SPECTRUM MONITORING PROGRAM FROM NTIA/NIST.

So instead of monitoring and deciding, why not put the sensing in the radio? Make the radio listen first, then transmit if it's clear. Or, make the radio check a database first. What could possibly go wrong?

Well, this approach already has gone wrong, most notably with UNII vs Radar. The Unlicensed National Information Infrastructure (U-NII) radio band is part of the radio frequency spectrum used by IEEE-802.11a devices. It is also used by many wireless ISPs. In 2007, the FCC began requiring that devices operating in channels 52, 56, 60 and 64 (5GHz band) must use Dynamic Frequency Selection (DFS). This was to avoid communicating in the same frequency range as some radar. In 2014, the FCC issued new rules for all devices in order to avoid interference with government weather radar systems.

Well guess what? Devices where the sensing was disabled got out in the wild. How do you think that might have happened? It turned out that some of the devices were intended for markets without any radar. Instead of being enabled by default, the DFS firmware was disabled by default. These devices were not incredibly complex and the DFS functionality seemed straightforward enough. But, it failed when the disabled radios ended up being shipped to places that had the radar.

TV white space re-use is another example. Sensing the environment then deciding whether or not to transmit based on the results of the sensing works unless you're in a band with directional signals. You can't intelligently decide what you can't reliably measure. The directionality problem is the case for TV white space sensing situations. In Europe, the sensing-before-transmitting autonomy approach was eventually disallowed. The radios have to consult a database. In the US, the hybrid approach of sensing along with a database lookup has been problematic, but sensing is still allowed.

The 3.55-3.7 Citizens Broadcast Radio Service band (CBRS) database is an example of the database lookup solution to spectrum sharing. The database is not live yet, but your radio will have to consult this database before you it transmit. Learn more about this band here <https://www.fcc.gov/rulemaking/12-354>

What about those smarty pants 5G people? How are they going to tame 24-40GHz? Transmissions are short range and much more line of sight. Massive amounts of money have already been spent already on spectrum in these bands by companies you have never heard of and some you have.

Traditional planned isolation means massive amounts of spectrum wholly devoted to short range directional digital transmissions. Base stations everywhere! How to efficiently use this spectrum?

Global database? So 20th century.

No database, with individual radios sensing their environment and then deciding it's OK to transmit? With short-range directional signals there may be plenty of problems.

There's a third way. Radios mesh together and establish a local adaptive spectrum sharing database. This way has many challenges and is actively being developed. See our Mesh Special Interest Group column on page 23 for more about mesh.

There has to be a better way, right? Yes, there is! And the Defense Advanced Research Projects Agency (DARPA) wants all of us, hams definitely included, to help figure it out!

DARPA's Spectrum Collaboration Challenge is a competition. \$2 million will go to the team whose machine-learning radio system is best at collaborating with other contenders to expand the spectrum's signal-carrying capacity. Collaboration here means more than just not causing interference to legacy radios. It means helping other radios, legacy or intelligent, pass their traffic while you at the same time try to pass yours. Working together to make the entire spectrum used as efficiently as possible is the goal. Read about the competition here <http://www.darpa.mil/news-events/2016-07-19a>

"The competition will unfold in three year-long phases beginning in 2017 and finishing, for those teams that survive the two Preliminary Events, in a high-profile Championship Event in late 2019."

These competitions do not produce finished products. Much like the DARPA self-driving car competition and this past summer's Cyber Grand Challenge where computers competed to patch software, the point is to show the that the functionality is possible.

Assuming successful spectrum collaboration techniques and algorithms continue to be developed, how do these developments affect our radio landscape? What does it mean for ham radio?

The reality of future radio may mean that any QSO between any set of operators is accomplished with custom waveforms, coding, and protocols that adapt to the specific and particular radio environment.

Instead of the spectrum display showing traditional recognizable signals, the spectrum near an urban area may simply have a higher noise floor. Wideband signals spread using codes or other spreading techniques seamlessly map over each other, providing interference-free highly efficient communications.

This assumes some things that don't happen right now. It assumes that I can identify who or what I want to communicate with, and it assumes that there is a negotiation of some sort. The radios may do this autonomously. It may involve a database. The ability to simply tune around and monitor communications is altered. In some situations, it's not possible.

This has a large affect on amateur communications. Our ability to monitor directly enables our ability to self-enforce the rules. If communications are so custom, so efficient, and closed to opportunistic or unplanned monitoring or tuning-around, then this aspect of amateur radio is rendered impossible by

the technology.

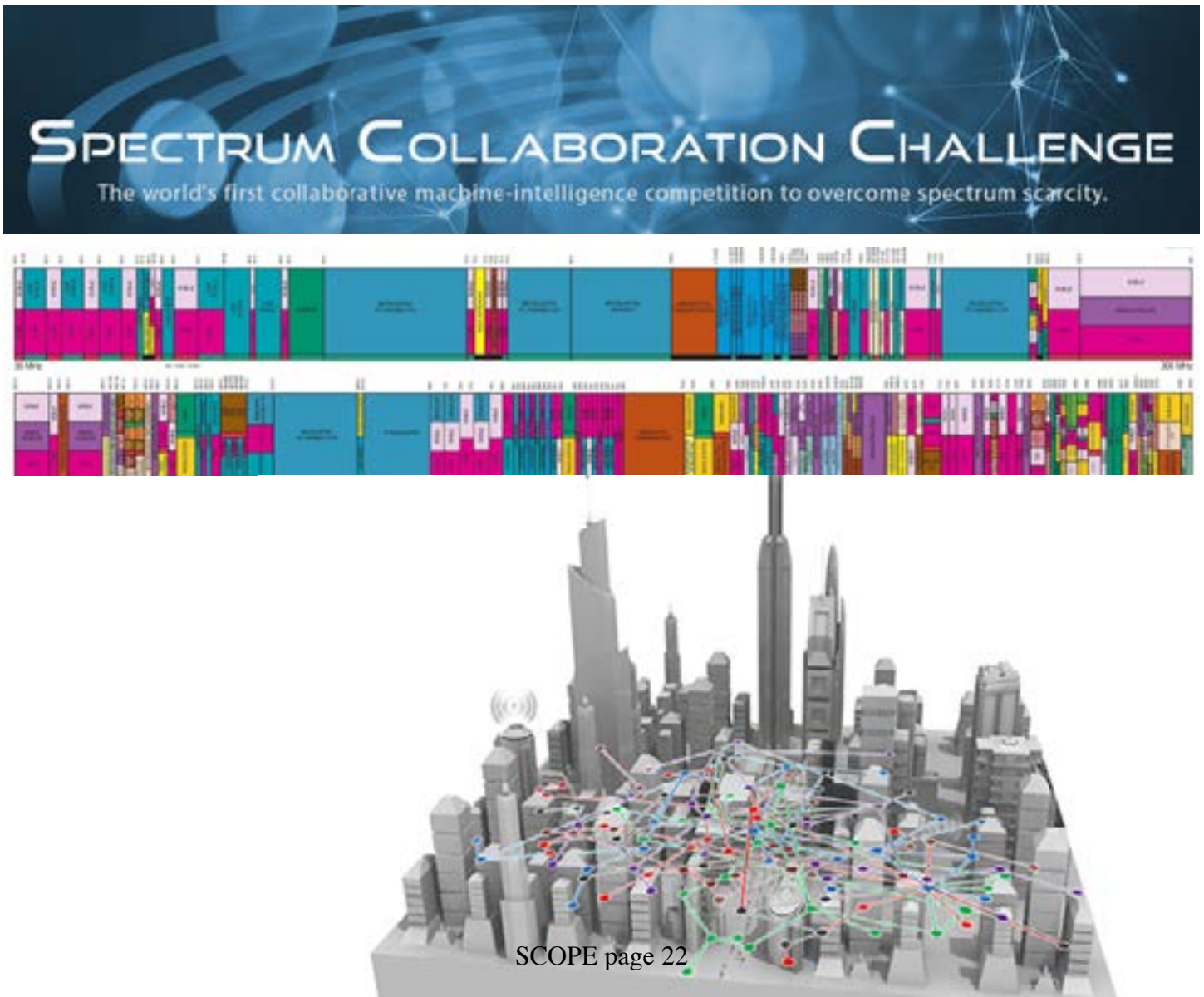
One solution is to not allow machine learning and adaptive waveforms, modulation, and coding in amateur communications. Categorize amateur radio as a legacy service that others have to work around.

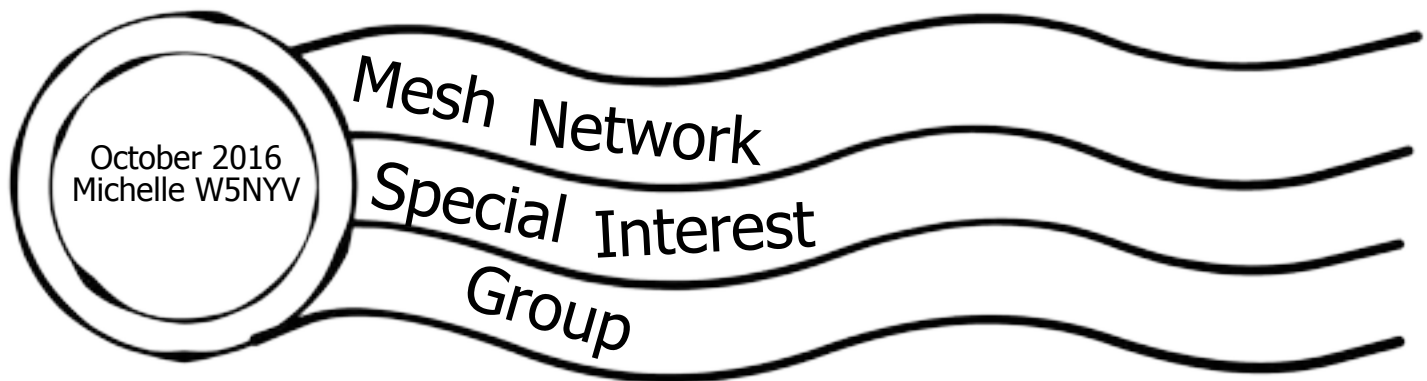
Of course, this directly conflicts with the reason we are in the radio service in the first place. However, this attitude is unfortunately common even within amateur radio circles. Interest in analog modes to the exclusion of digital modes is something we've all seen. It's nothing to be proud of.

If we do allow adaptive radio architectures to run free on the amateur bands, then we have to come up with a way to allow monitoring of custom, adaptive communications. This is an exciting area of research and experimentation. Deterministic emission types mean monitoring is trivial. Non-deterministic emission types mean monitoring can be very challenging. If you can't even detect a signal is there, if the signal is indistinguishable from noise, then you have the ultimate stealth radio. You can then transmit whatever you want.

The aims and purposes of the DARPA Spectrum Collaboration Grand Challenge directly affect the future of spectrum sharing and therefore our place as an amateur service within the complex fabric of licensed and unlicensed services. It's imperative to get educated and involved in the process.

If you want to participate in the DARPA competition, you can! Teams are forming all over the world for this competition. I'm involved with the team from Virginia Tech. Want to find a team or get more information? Sign up here: <https://spectrumcollaborationchallenge.com/>





Are we hams interested in mesh networks? We should be for several reasons! Not the least of which is that mesh networks are becoming more important in dynamic spectrum allocation techniques. See the TAPR DCC Report on page 18 for a summary of the spectrum allocation tutorial given at DCC.

Mesh networking is a big part of the spectrum collaboration scene in both commercial and research environments and was discussed in the tutorial.

From a 5G development perspective, where millimeter wave frequencies mean short range directional communications, the dynamic spectrum allocation choices are planned isolation (how we've always done it), going through a central database before being allowed to transmit, or making independent sensing/actuation decisions. None of these approaches fully utilize the crowded bands. There is an alternative and it is a local adaptive spectrum sharing database enabled by mesh networking.

When we talk about cognitive radio, or local sensing and decision-making to avoid interference, and we don't want to pre-plan who we talk to, then we quickly confront mesh technologies.

Anything worth doing is all about trade-offs. Mesh is an excellent example. Flexibility is purchased with complexity. Maneuverability is purchased with stability. Stability can be bought back with more complexity.

Nodes in a mesh network have two jobs. First, connect with neighbors. Second, forward traffic out the backhaul. This is different from a traditional network where routes are generally static and nodes may have one or the other roles but not usually both. In a mesh network nodes can come and go. Ideally, the network adapts to node loss and heals on its own.

There's a variety of ways to deploy mesh, but almost all of them that hams experiment with rely on WiFi and TCP/IP. Routing protocols designed for static routes are not necessarily ideal for dynamic ones. Half-duplex wifi cards mean your throughput goes down by half for each hop. Black hole routing, jamming, and routing contention or routing flaps are major issues for mesh. Interference has been the primary performance degradation in deployed commercial mesh networks.

One of the biggest obstacles is how random access protocols cause latency stackups in multihop networks. You can increase your throughput in some cases by tolerating latency, but when you run out of margin on the latency, things can stop working.

All of these facts mean that mesh is a very active and very rewarding area of research. There are several generations of mesh networks. Some of these networks were based on military mesh networks designed for deployment in the field. Some networks are designed explicitly for certain types of traffic or for commercial deployments to enable specific applications.

There are no clear winners yet in security protocols for mesh networks. Security through obscurity, whether hardware obscurity, or spectral obscurity, has been the most reliable way to exclude bad actors. If mesh networks are to be used for local spectrum collaboration, and if those services need to be secure, then there is plenty of work available for motivated designers!

High Speed Multimedia for Amateur Radio

Build a High Speed Amateur Radio Microwave Network

Using commercial off-the-shelf equipment and developing their own software, groups of hams have created high speed wireless Amateur Radio digital networks with wide area coverage.

The possible uses for these high speed data networks in the Amateur Radio community are endless. Virtually any service that works on the regular Internet can be adapted to an Amateur Radio high speed multimedia (HSMM) network, including video conferencing, instant messaging, voice over Internet protocol (VoIP), network sensors and cameras, remote station control, and many other services. With the capability to send real-time video and data files, the public service and disaster support aspects of Amateur Radio are expanded tremendously.

This book introduces HSMM networking, explains the basics of how it works, and describes the various technologies in use today. Later chapters explain in detail how to deploy your own HSMM network, along with various applications to put it to work. Well illustrated step-by-step instructions will guide you through the process of installing and configuring software needed to get your HSMM network up and running.

Includes:

- Introduction to High Speed Multimedia
- High Speed Multimedia Technologies
- HSMM Equipment for Amateur Radio
- TCP/IP for HSMM
- HSMM Applications
- Security and Filtering
- Backup and Redundancy
- Deploying HSMM Networks
- The Future of HSMM

Special Member Price! Only \$24.95 (regular \$27.95)

Also available:

[High Speed Multimedia for Amateur Radio, Kindle Edition.](#)

[Arduino for Ham Radio](#) by Glen Popiel, KW5GP

Product Details

Softcover: 256 pages

Publisher: The American Radio Relay League, Inc.; First Edition (March 2016)

Language: English

ISBN: 978-62595-052-9

Product Dimensions: 7 1/2 x 9 inches

Shipping Weight: .91 pounds



Author: Glen Popiel, KW5GP

ISBN: 978-62595-052-9

Item No.: 0529

Price: \$24.95

Quantity:

[Add to Cart](#)

[Add to wish list](#)

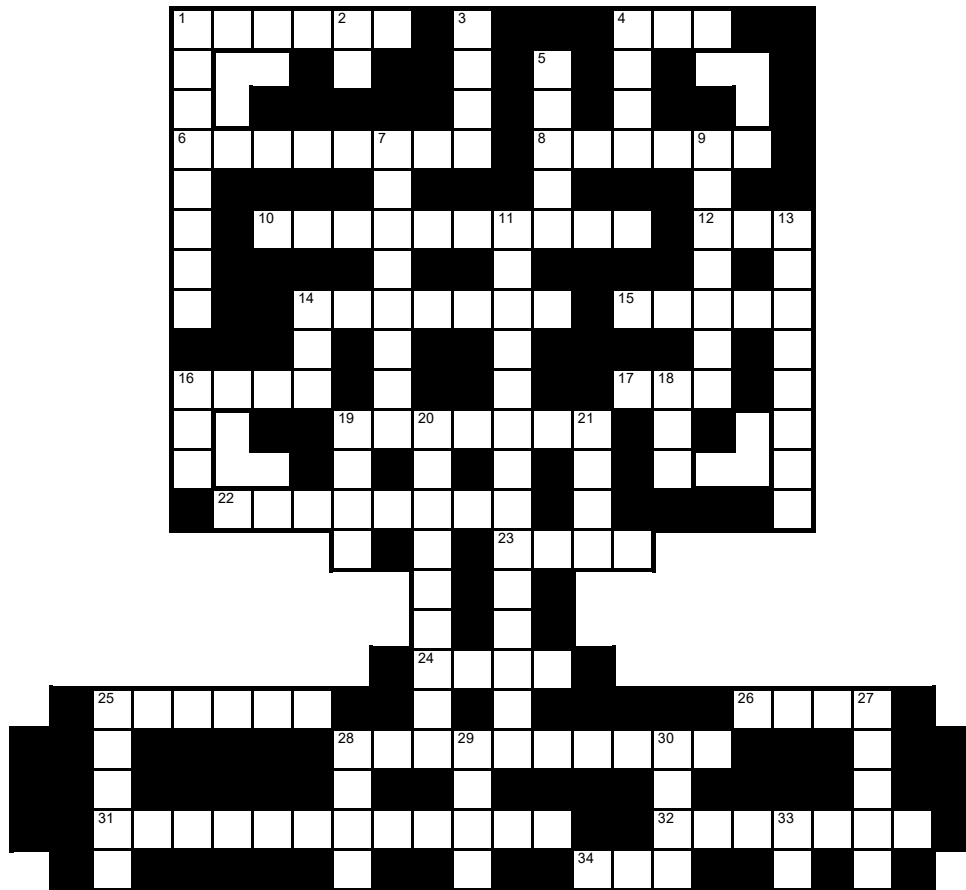
Share With Friends:



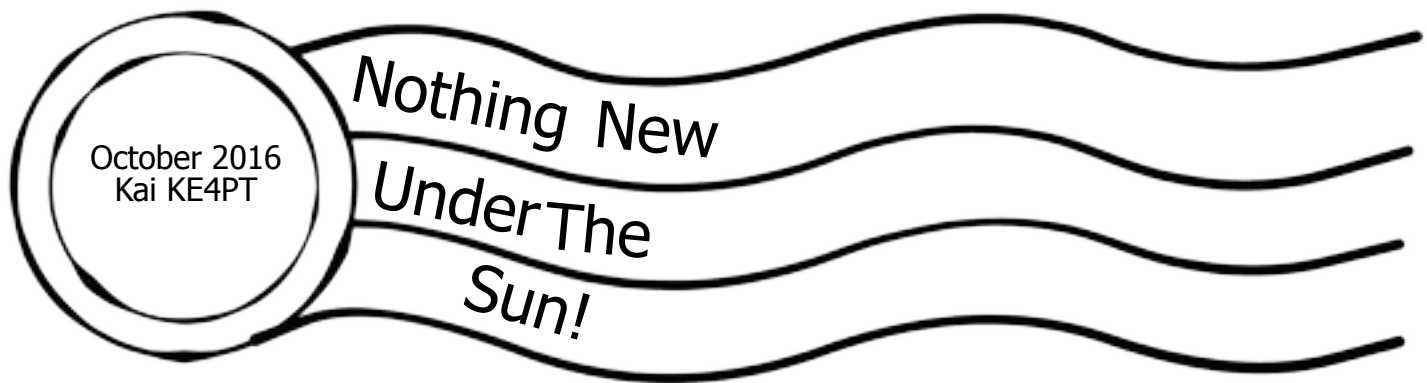
One of our mesh SIG members recommended this book! Check it out at <http://www.arrl.org/shop/High-Speed-Multimedia-for-Amateur-Radio/>

Across

- 1 What the letters seem to come from on the screen (6)
- 4 CD follower (3)
- 6 Episode IV: "Etiquette and ____" (8)
- 8 Admission (6)
- 10 Also known as Clover Key (7,3)
- 12 Air rifle ammo (3)
- 14 If it's useful, it must have some ____ (7)
- 15 Commonly known as a line (5)
- 16 A standard for defining generalized markup languages for documents (4)
- 17 Acronym for a computer screen (3)
- 19 You watch them on TV (7)
- 22 Loss due to logistics (8)
- 23 Not RISC (4)
- 24 Clickable image (4)
- 25 Sewer line? (6)
- 26 Start of many addresses (4)
- 28 Set of ones and zeroes that makes sense. (6,4)
- 31 A mapping of letters and numbers to their identifying codes. (9,3)



- | | | |
|---|--|---|
| 32 Equipment that turns images into digital files. (7) | 9 Keep clicking for more options (7) | 20 Game with a buzzer and tweezers (9) |
| 34 A protocol that transfers files between computers over a network (3) | 11 Creates the illusion of depth (8,6) | 21 Got a lot of these then you are a fast processor (4) |
| | 13 The librarian takes this long to find your book, if the book was data, and the library was a hard drive (4,4) | 25 Follow (5) |
| Down | | 27 Control ____ (5) |
| 1 Quip, part 3 (8) | 14 www.yahoo.com , e.g. (3) | 28 Information unit (4) |
| 2 MacOS, Windows, Linux (2) | 16 language for managing data in a relational database (3) | 29 Private non-profit that has standards (4) |
| 3 Web wouldn't work without it (4) | 18 How you find the domain name (3) | 30 Speech problem (4) |
| 4 Not CISC (4) | 19 language that looks like line noise (4) | 33 Not in R, not in S, not in ____ (2) |
| 5 An orderly pile (5) | | |
| 7 By your command, the machine understands (8) | | |



The "Damped wave emissions" are permitted under 47 CFR 15.517 (i). Here is the "chain" of regulations about the now-permitted damped wave emissions:

Spark is outlawed in:

47 CFR 2.201 - Emission, modulation, and transmission characteristics.

§ 2.201 Emission, modulation, and transmission characteristics.

The following system of designating emission, modulation, and transmission characteristics shall be employed.

(f) Type B emission: As an exception to the above principles, damped waves are symbolized in the Commission's rules and regulations as type B emission. The use of type B emissions is forbidden.

Spark is outlawed in Part 15:

General Part 15 Technical Requirements

The following regulations apply to all Part 15 devices:

§ 15.5 General conditions of operation.

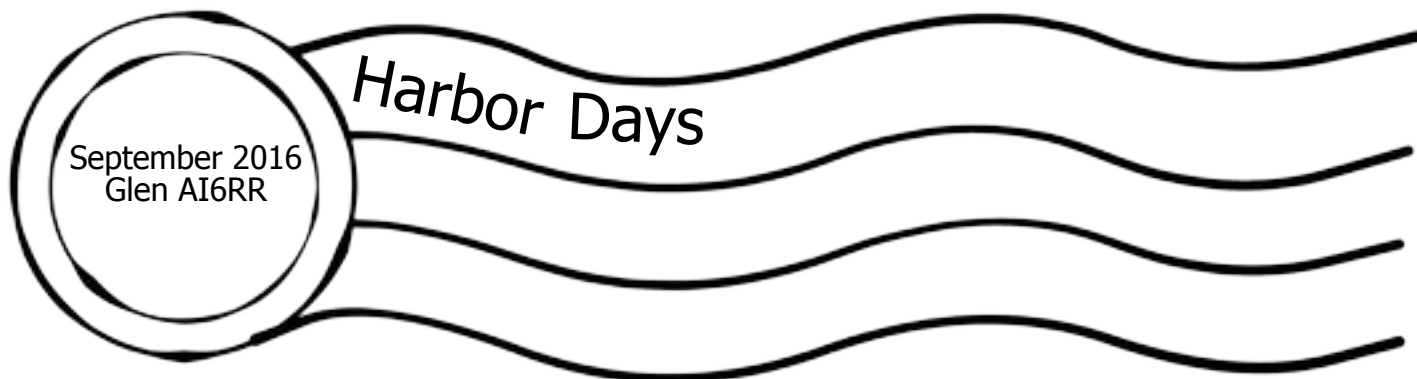
(d) Intentional radiators that produce Class B emissions (damped wave) are prohibited.

Ah! but under the UWB subpart F, spark is again permitted!

Section 15.517 Technical requirements for indoor UWB systems.

(i) The prohibition in Sections 2.201(f) and 15.5(d) of this chapter against Class B (damped wave) emissions does not apply to UWB devices operating under this subpart.

So, **spark has returned and is permitted** under Part 15 Subpart F (UWB), specifically Section 15.517(i)!



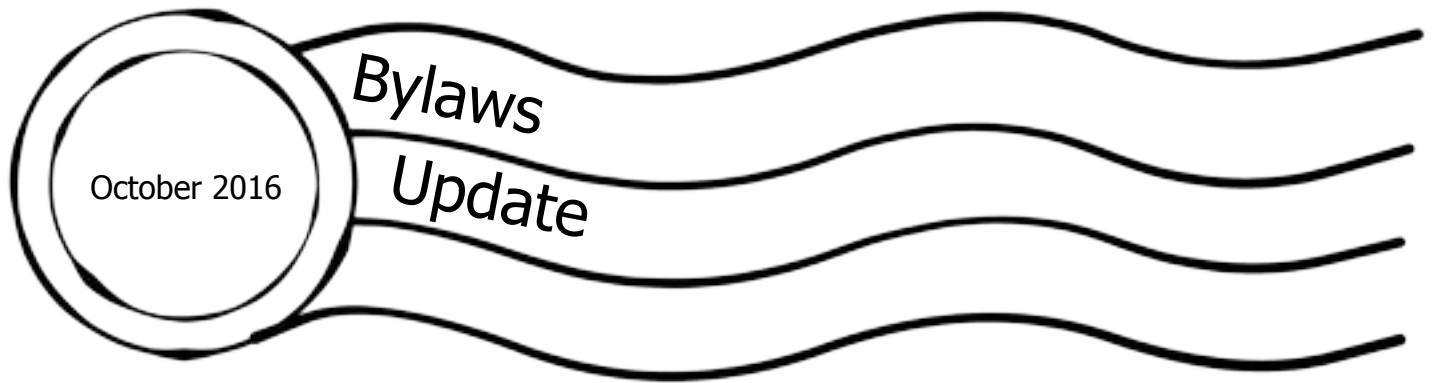
Thank You to club members who staffed the PARC booth at the 2016 Oceanside Harbor Days event on Saturday, September 24th and 25th.

Jim Keller	W6YXY
Glen Christensen	AI6RR
Bob Brehm	AK6R
John Walker	AC7GK
Michael Palugod	N6PIH
Gary Kent	W6GDK

and to Joe Peterson K6JPE for delivering the canopy, chairs and table.

Glen AI6RR





Proposed Bylaws Amendment 2016-A

Purpose

To make the Bylaws compatible with the club's new 501(c)(3) status.

Discussion

The existing Bylaws specifically call out the California law for mutual benefit corporations. The club is no longer that type of corporation. This amendment eliminates references to that specific law.

In addition, the text of Section 3(a) doesn't make any sense; it quotes inappropriately from the law by referring to "this law". In fact, Section 3 doesn't do anything but repeat things already stated in the Articles of Incorporation.

Text of Amendment

Delete the entire text of Section 3 and replace with the following:

The purpose of this corporation shall be as stated in the Articles of Incorporation.

In Section 4(d), replace the text:

the California Nonprofit Mutual Benefit Corporation Law

with the following:

California law.

In Section 7(o), replace the text:

the California Nonprofit Mutual Benefit Corporation Law

with the following:

California law.

In Section 8(h), replace the text:

the California Nonprofit Mutual Benefit Corporation Law and any other applicable laws

with the following:

applicable laws

In Section 9(d)(3), replace the text:

required by Section 8210 of the California Nonprofit Mutual Benefit Corporation Law

with the following:

required by law

Proposed Bylaws Amendment 2016-B

Purpose

To make the Bylaws consistent with current practice with regard to memberships and renewals.

Discussion

The existing Bylaws evolved from an old scheme whereby every membership expired at the end of the club's fiscal year to a newer scheme in which memberships can expire at the end of any month. Remnants of the old scheme remain, encouraging members to pay prorated monthly dues to make their expiration dates line up with the club's fiscal year. This is no longer considered helpful.

The existing Bylaws set an explicit dollar amount for dues, but then give the board the power to change it. This has led to some confusion with respect to the effective dates of dues changes.

The existing Bylaws encourage members to prepay for two or more years in advance, but do not set any limits on prepayment or explain what happens to prepaid memberships when the board changes the dues.

Text of Amendment

In Section 5(a), replace the text:

The annual membership dues for both Full and Associate Members shall be \$12.00 (which shall include a subscription to the newsletter).

with the following:

The annual membership dues for both Full and Associate Members shall be set by the board.

In Section 5(a), replace the text:

The \$12.00 dues

with the following:

The dues

In Section 5(a), replace the text:

Members are encouraged to pay dues in increments of two or more years at one time. At any time after paying dues for the first year, a member may pay additional dues at the rate of \$1.00 per month in order to make his membership expire at the end of the corporation's fiscal year. Members are encouraged to do so.

with the following:

Members may pay dues for one or more whole years at a time, but not more than ten years beyond the date of payment.

In Section 5(b), replace the entire text:

(b) The amount of the annual dues may be changed from time to time by the board. Any change will be effective for the following fiscal year.

with the following:

(b) The board may change the amount of the annual dues from time to time. Any change will be effective for new memberships and renewals beginning at the start of the following fiscal year. Prepaid dues will be honored at the annual rate in effect when they were paid.

Proposed Bylaws Amendment 2016-C

Purpose

To permit the club's newsletter to be published exclusively online.

Discussion

The existing Bylaws require a monthly newsletter to be "sent" to members, with a strong implication that it is printed on paper and mailed. Since this has become cost prohibitive, we need to make it clear that online publication suffices.

Text of Amendment

Replace the entire text of Section 15,

(a) The corporation shall publish a monthly newsletter titled SCOPE. The cost of a subscription to SCOPE shall be \$3.00 inside San Diego County and \$4.00 outside San Diego County. The cost of a subscription shall be included in the dues of members. Nonmembers may be allowed to subscribe to SCOPE with the approval of the board. The board may authorize the Editor to omit publication of SCOPE for a particular month.

(b) The board may authorize the Editor to distribute the newsletter electronically. Members who opt not to receive the newsletter by mail shall be deemed to have received the newsletter electronically, and this shall satisfy all requirements for notice or publication in the newsletter specified in these bylaws. No reduction of membership dues shall apply for members who opt not to receive the newsletter by mail.

with the following:

(a) The corporation shall publish a monthly newsletter titled SCOPE.

(b) The board may authorize the Editor to publish the newsletter in any form, including online electronic distribution, or in multiple forms.

(c) The cost of a subscription to the newsletter in at least one form shall be included in the dues of the members. No dues reduction shall apply for members who opt not to receive the newsletter in such form.

(d) Nonmembers may be allowed to subscribe to the newsletter with the approval of the board.

(e) The board may authorize the Editor to omit publication of SCOPE for a particular month.

(f) Regardless of the form of publication, placement in the newsletter shall satisfy all requirements for notice specified in these bylaws.

Proposed Bylaws Amendment 2016-D

Purpose

To correct nonsensical grammar in a sentence about life memberships.

Discussion

The existing Bylaws Section 5(c) contains a sentence that doesn't make sense:

The board shall fix the amount of such dues so as to take into account in a degree suitable to the board the relative age classes such dues on accurate life expectancy factors.

This sentence is apparently intended to give the board permission to consider the age of the prospective life member when setting the cost of life membership, but aside from the admonition to use "accurate" life expectancy factors, it doesn't really impose any requirements or grant any special permissions.

Rather than try to wordsmith this sentence to be grammatical, this amendment simply removes it. The remaining sentence of Section 5(c) covers the subject adequately.

Text of Amendment

In Section 5(c), delete the text:

The board shall fix the amount of such dues so as to take into account in a degree suitable to the board the relative age classes such dues on accurate life expectancy factors.

Proposed Bylaws Amendment 2016-E

Purpose

To remove the unnecessary suggested order of business for regular meetings.

Discussion

There is just no point in listing this in the Bylaws. We don't follow it anyway.

Text of Amendment

In Section 7(b), replace the entire text:

(b) The suggested order of business for regular meetings is:

(1) Call to order.

(2) Pledge of Allegiance.

(3) Secretary's Report.

(4) Treasurer's Report.

(5) Committee Reports.

(6) Announcements.

(7) Introductions.

(8) Old Business.

(9) New Business.

(10) Program.

(11) Adjournment, followed by social period.

with the following:

(b) (reserved)

Proposed Bylaws Amendment 2016-F

Purpose

To create a defined procedure for the board to grant or withhold approval for presidential appointees.

Discussion

There has been a bit of controversy about what it means that the president makes appointments “subject to the approval of the Board”. In particular, does this mean that the board has to take explicit action to approve each nomination, or does it just mean that the board has an opportunity to disapprove each nomination?

Arguably, the plain language suggests that explicit action is required. However, common practice has been that the board doesn’t bother to pass a motion approving each appointment. This amendment makes it clear that board inaction grants board approval.

Text of Amendment

Add a new section at the end of Section 8:

(w) An appointment or designation made by the President shall be deemed to have the approval of the board upon the adjournment of the next regular board meeting, unless the board adopts a resolution withholding such approval.

Proposed Bylaws Amendment 2016-G

Purpose

To allow the board to conduct business by email.

Discussion

The existing bylaws have no provision for the board to do any business by email.

They can do business in a regular or special meeting. Meetings can be held by radio or teleconference, but they cannot be held by email because of the requirement that all participants be able to hear one another.

Alternately, they can do business by unanimous consent in writing. If you grant that email is “in writing”, then it’s possible to do business by email, but only if every single director responds (and agrees), and there’s an extra paperwork burden to archive the written consents as if they were meeting minutes. This is a very cumbersome way to do business.

Some other amateur radio organizations are more flexible. For example, TAPR’s bylaws allow the board to be continuous session “by the use of telecommunication systems”. AMSAT’s bylaws allow the board to hold “telegraphic consultations”, with requirements for notice and minutes.

This amendment simply reduces the requirement from unanimous to majority and clarifies that email counts. The requirement that the agreements be filed with the minutes is retained.

Text of Amendment

In Section 8(v) replace the text:

If all the members of the board consent in writing

with the following:

If a majority of the members of the board consent in writing or by electronic mail

Proposed Bylaws Amendment 2016-H

Purpose

To remove fixed dollar amount limits on spending without board action.

Discussion

The existing bylaws specify fixed dollar amount limits for the size of the treasurer's petty cash fund (\$25), and for the largest expenditure that can be made without board approval (\$50). After 24 years of inflation, these limits are starting to seem a little low.

This amendment allows the board to change the specified dollar amounts.

Text of Amendment

In Section 9(d)(2), replace the text:

The treasurer may maintain a Petty Cash Fund of not more than \$25.00, to be used for incidental expenses. No expenditures in excess of \$50.00 shall be made without approval by the board.

with the following:

The treasurer may maintain a Petty Cash Fund of not more than \$25.00 (or a different limit adopted by the board), to be used for incidental expenses. No expenditures in excess of \$50.00 (or a different limit adopted by the board) shall be made without approval by the board.

Proposed Bylaws Amendment 2016-I

Purpose

To recognize the club's webmaster as a standing committee chair, eligible to be designated a board member.

Discussion

The board consists of the four elected officers (President, Vice President, Treasurer, and Secretary), plus two elected directors, plus zero to three (typically three) of the chairs of specific standing committees. Originally, these three committee chairs were fixed: the editor of the newsletter, the membership chair, and the repeater chair. Later, in 1997, the repeater chairman job was split up into a Repeater Technical chair and a Repeater Site chair, and the President was given the power to designate which three of the four chairs would serve on the board, with the approval of the board.

The newsletter is discussed in the bylaws, but the newsletter editor is barely mentioned. The other three jobs are not mentioned at all, except where they are listed as standing committee chairs eligible to be designated to the board. None of them have defined responsibilities.

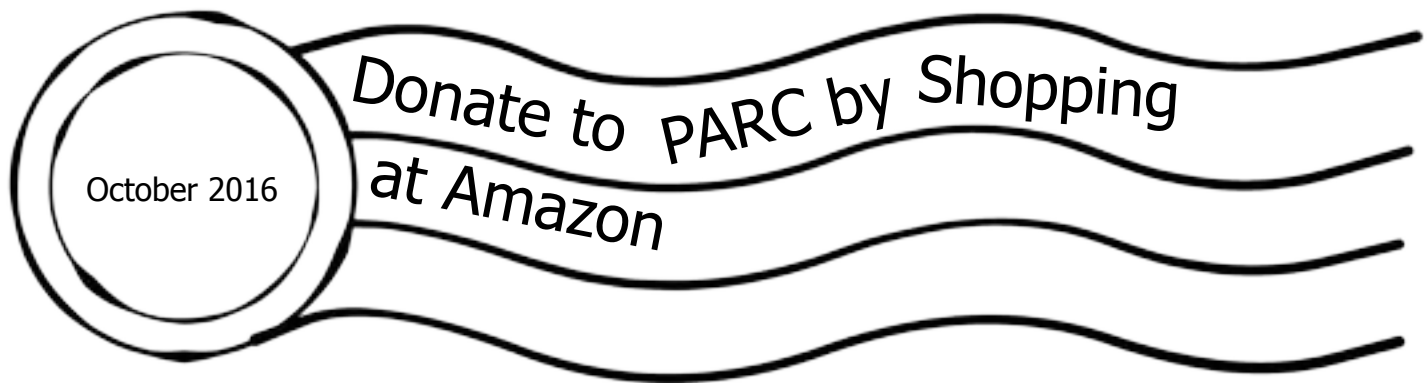
There are potentially lots of committees, and they are all important to the success of the club. Only a few of those committees operate year in and year out, and have a direct impact on most club members. Since these bylaws were written, technology has changed and now it may be seen that the club's web site is in the same category as its newsletter. Both are vital to the club, and the editor of the newsletter and the webmaster of the web site need to keep abreast of a wide variety of club activities so they can report them to the members.

This amendment adds the webmaster to the list of standing committee chairmen who may be designated to serve on the board by the President.

Text of Amendment

In Section 8(t), add the following item to the numbered list:

(5) the Webmaster



As publicized earlier this year, PARC is now a not-for-profit charity, and fund donations to PARC are eligible for tax deduction itemization for those who are eligible for such a tax itemization.

PARC also announced that in cooperation with Amazon, it is now possible to shop on Amazon at NO cost increase, and have Amazon distribute a percentage donation to PARC.

This is done by shopping on www.smile.amazon.com.

If you choose to avail yourself of this opportunity, when shopping on www.smile.amazon.com, specify Palomar Amateur Radio Club as your charity of choice for donation.

For more information:

http://smile.amazon.com/gp/chpf/about/ref=smi_aas_redirect?ie=UTF8&ref_=smi_se_ft_abt_saas

amazonsmile
You shop. Amazon gives.

Shop Now



Want to help PARC earn more awards?

Contact board@palomararc.org about using the club call sign in upcoming contests or operations!

We aren't that far from getting several more shiny stickers!

At right is the overall picture of our club call sign's Logbook of the World WAS record.

Notice that 20m Phone and 20m CW are pretty close to having all 50 states.

Which states are missing? See the image at the bottom of this page. We need Hawaii for 20m Phone and Nevada for 20m CW.

Think you can bag these states to give us two more awards?

The cost of the award will be covered by a donor. Want to help?

- 1) arrange for permission to use W6NWG by writing the board about your plans.
- 2) submit a log of the contacts to the board. Uploading to LoTW and application for awards will then occur.
- 3) get accolades from the club!

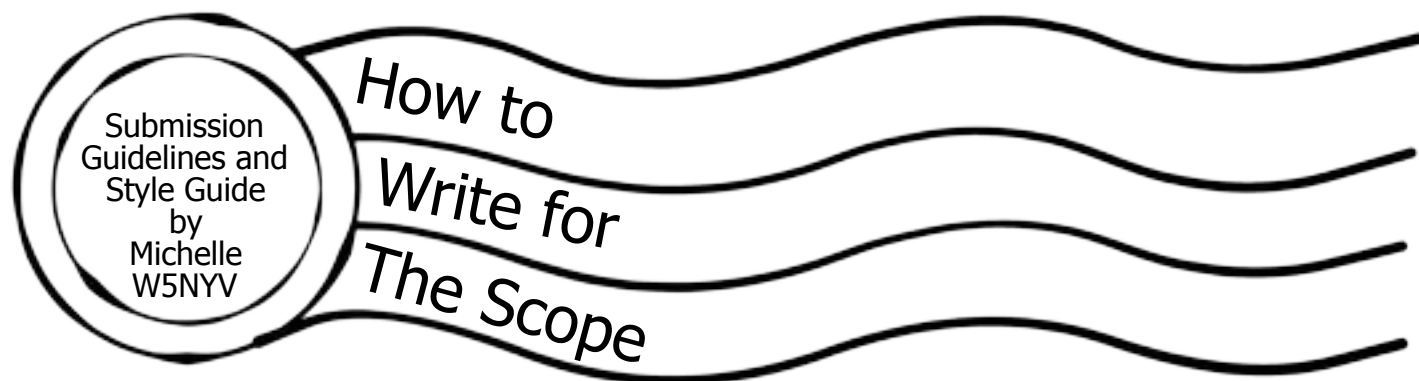
Your Logbook WAS Account (W6NWG WAS)

Account Status

WAS Award	New LoTW QSLs	LoTW QSLs in Process	WAS Credits Awarded	Total
Mixed *	0	0	50	50
80M	22	0	0	22
40M	39	0	0	39
20M *	0	0	50	50
15M	40	0	0	40
10M	6	0	0	6
CW *	0	0	50	50
Phone *	0	0	50	50
80M Phone	15	0	0	15
80M CW	13	0	0	13
40M Phone	19	0	0	19
40M CW	38	0	0	38
20M Phone	49	0	0	49
20M CW	49	0	0	49
15M Phone	23	0	0	23
15M CW	37	0	0	37
10M Phone	5	0	0	5
10M CW	1	0	0	1
Triple Play	100	0	0	100
5-Band	157	0	0	157

* = Award has been issued

20M Phone	49	<input type="checkbox"/>	The 20M endorsement sticker to be affixed to your Phone WAS certificate. Missing: HI
20M CW	49	<input type="checkbox"/>	The 20M endorsement sticker to be affixed to your CW WAS certificate. Missing: NV



Submission Guidelines

Article submissions in most modern file formats are accepted. Plain text in the body of an email, with attached full resolution photographs, is most preferred. Dropbox and several other file transfer services are supported.

Sending a fully-formatted PDF, so that the author can control formatting and exact wording, is also accepted. We use Tahoma font for body text, but will accept PDFs with other fonts. If any editing is necessary, then it will be negotiated with the author, and will then be the responsibility of the author.

For 2016, the Scope theme is postal marks and radio-related stamps. Postal theme artwork is welcome! Scans of amateur radio stamps, stories about stamps in general, interesting or quirky postal marks, fun things to do with the mail, puzzles about stamps, interesting stamp-related narratives, stories about current mail technology, QSL cards, QSL bureaus, and QSL collections are all very highly desired throughout 2016.

We want to publish articles about amateur radio and amateur radio related events and interests. Amateur radio covers a very broad swath of subjects. Contesting, technical experiments, narratives about the hobby, stories about how you became a ham, suggestions for an interview, ideas for more puzzles and games, experiences in community service, emergency communications, tours and travelogues of places of interest to amateur radio operators, mobile installation articles, ham shack articles, good operational practices, ideas for what PARC should be doing in 2016, and many other subjects are what we want to print in the Scope every month.

Articles that misrepresent a person, subject, or event will not be printed. Articles that are attack pieces, demean groups or individuals, or ridicule others will not be printed. The editorial staff

of the Scope, in coordination with the Palomar Amateur Radio Club Board of Directors, has the final say on what is published in the club newsletter. Being a member of the club does not guarantee that a submitted article will be published. No payment is given in exchange for any article. Copyright remains entirely with the original author.

Style Guide

Time: Use 24-hour time in the following format.

"We started the event at 9:00 and began tear down at 16:00."

Name and Call Sign: Name is followed by call sign with no commas.

"Michelle Thompson W5NYV began writing the article."

After the first name and call sign is listed in an article, the style is to shorten it to first name and call sign with no commas.

"Michelle W5NYV was writing all day."

Do not use ellipses unless you know exactly how to use ellipses.

Ellipses... are not... the same thing... as a comma... or a pause...

Capitalization should be used for proper nouns. Proper nouns are the names used for an individual person, place, or organization. They are spelled with initial capital letters. For example, Michelle, New Mexico, and Boston Red Sox.

"And... that's it! That's All there is To It!"

What's the next step? Write an article, or propose one. If you need help, just ask! Mail to: scope@palomararc.org

You can join or renew your membership, find a repeater listing, find contact information for the board all on the club's web site <http://www.palomararc.org>

Editor: Michelle Thompson W5NYV

Submissions: scope@palomararc.org

Questions? Ideas? Comments? W6NWG@amsat.org

Featured Program:

For the October 5th meeting, Palomar Amateur Radio Club will have the annual club auction.

Set-up of the Carlsbad safety center for the auction will start at 5:30 PM, Wednesday October 5th. Hams wishing to sell items may enter the Carlsbad safety center between 6:00 PM until 6:30 PM. Buyers may examine the merchandise between 6:30 PM and 7:00 PM. The auction will begin at 7:00 PM.

We look forward to seeing you at the Carlsbad Safety Center, 2560 Orion Way, Carlsbad, CA.



CATCH 'EM ALL AT THE AUCTION!

Sign up for the PARC Email Lists:

<http://www.palomararc.org/mailman/listinfo>