

ALL EARS

www.earsclub.org

The official bulletin of the Escondido Amateur Radio Society – N6WB January 2013

January's meeting details

Fred Brown, W6HPH, will give a presentation about his noise canceller that appeared in the January 2012 QEX magazine.

The device uses a second antenna to eliminate most man-made noise for HF radios.

See Matt's VP article for more details.

EARS Event Calendar - 2013

- Jan 10 Regular Meeting, 7:30 p.m.
- Jan 17 Board Meeting, 7:00 p.m.
- Jan 19 Monthly Breakfast, 8:30 a.m.
- Jan 26 [VE Testing](#)
- Feb 14 Regular Meeting, 7:30 p.m.
- Feb 16 Monthly Breakfast, 8:30 a.m.
- Feb 21 Board Meeting, 7:00 p.m.
- Feb 23 [VE Testing](#)
- Mar 14 Regular Meeting, 7:30 p.m.
- Mar 16 Monthly Breakfast, 8:30 a.m.
- Mar 21 Board Meeting, 7:00 p.m.
- Mar 30 [VE Testing](#)

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Welcome to January's ALL EARS

By Steve Venner, W6TAN



Hi everyone,

Welcome to January's ALL EARS.

First, let me wish all of you a...

HAPPY NEW YEAR!

It looks like 2013 is going to be a great year for EARS – with a super new VP conjuring-up all sorts of fun and interesting presentations for you.

Keep your eyes and ears open on the website, and for announcements in ALL EARS etc. for more details.

Until next month - 73,
Steve, W6TAN.

The 'dues' are due...

By Steve Venner, W6TAN

Note: The annual dues are due, so let the moths out of your wallets & purses, and hand over your \$15 to our treasurer - Teri Bloom, W6TRB.

Either - mail your checks to:

EARS,
PO Box 3243,
Escondido,
CA 92033

Or hand over your 'dosh' to Teri at January's regular meeting.

If you pay by check – don't forget to put your call-sign on the back.

The Presidential Prose

By John Musselman, N6EP



Another year is upon us and that means another year with our ham friends and our Club.

First, let me thank Robert, KI6SBL, for his service, and thank you, Rob, for always

caring about EARS.

You might have heard, but I'm actually only half a President. Jeff, AE6GM, is going to take the reins for the second half of the year. We flipped a coin for the job, but it landed on its edge. Well, actually, Jeff was my first choice, but his schedule was such that he is unavailable until mid-year. So I said I'd be the placeholder until he can take over.

I pointed out to Jeff that I will be the President during Field Day and he said (with a chuckle) that's OK with him.

I'd also like to thank Matt, N6EAJ, for taking on the office of Vice President. The VP is the guy who actually does the heavy work - he arranges the programs.

Matt already has the first three months of the year scheduled and the schedule looks pretty sharp to me.

I hope you can make the January meeting this Thursday to hear about a neat noise canceller.

Fred Brown, W6HPH, will show us how to get rid of local man-made noise with a second antenna and a noise cancelling circuit. You're going to like the February and March topics as well. Look for details shortly.

Anyway, welcome to 2013 and I'm looking forward to another great year for EARS and for ham radio. See you on the bands and at the Club meetings.

73,

John
N6EP

Verbal from the VP

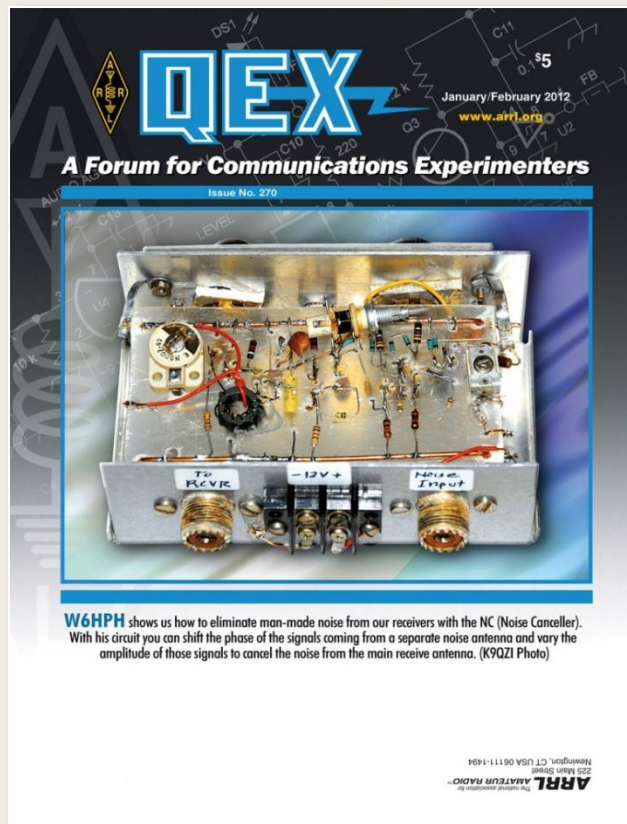
By Matt Tucker, N6EAJ



January's Presentation:

Fred Brown, W6HPH will give a presentation about his noise canceller that appeared in the January 2012 QEX magazine.

The device uses a second antenna to eliminate most man-made noise for HF radios.



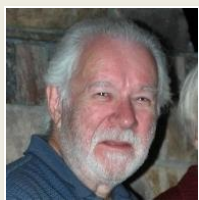
Fred has held the call W6HPH since 1949 and has been Extra class since 1966.

He earned a BS in Electronics from Cal Poly and an MSEE from the University of Illinois.

He has worked in the electronics industry most of his life and is the author of more than 50 articles published in amateur and professional journals.

PC Tip No.3

By Dick Kalkofen, K6KAL



USB Hubs 'Power Save' DISABLE:

Have you ever noticed that while your PC was running the disk light would come on for no apparent reason, chatter

awhile and then stop? There are any number of things that could be going on, but here we will outline how to stop one of the more annoying tasks.

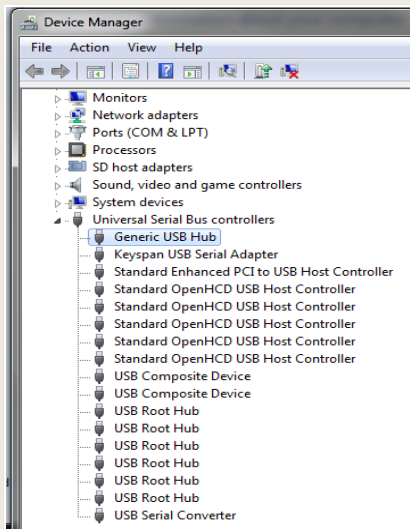
When windows is running normally, it will occasionally start a process that will check each 'USB Hub' on your system, to see if it can turn it off to save power. This is more noticeable on Laptops, which have a limited amount of battery life.

If you were monitoring DX, and or had your favorite logging software running, or even worse, you are 'Contesting' and Windows decides to run the Power Save check, your software may hang for a moment or longer while it checks the USB Hub settings.

Well fear not, we have a solution that will keep windows from messing with use while we are having too much fun.

In the last PC Tip, we located and used the Device Manager. Well here we go again...

With the Device Manager screen in front of us look for the 'Universal Serial Bus controllers' tab. Well you might say that you have no Hubs attached, but guess again.



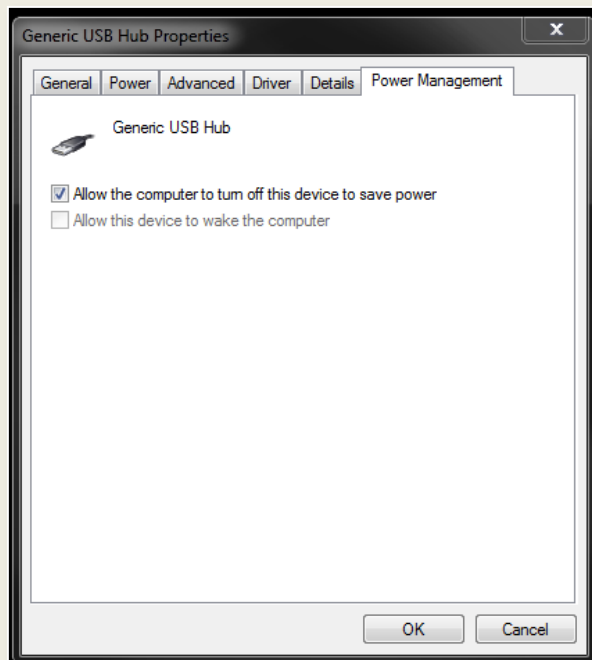
There can be six or more 'Internal' USB Root Hubs in use.

An externally connected Hub will have a label like 'Generic USB Hub', while the internal hubs are labeled

something like 'USB Root Hub'.

Now for the easy part...

First let's do the external hub. Right Click on hub and select 'Properties'. From there select the 'Power Management' Tab. The top line should look like:



Simply uncheck the 'Allow the computer to turn off this device to save power' option, and then click OK.

Do this for the all your external hubs, and the USB Root Hubs. This will do it. While your battery run time may be reduced ever-so slightly, your running software will not 'Hang' while windows try's to save a few hundreds of milliamps.

Oh by the way, Windows also keeps a log of each device ever plugged into a USB port, and the driver that was loaded, and the power requirement of each device. A USB port has a published limit of 100mA each. That is why some vendors now make externally powered Hubs, to help with the system loading.

In some PC tips to follow, I will outline a utility that will allow you to manage the device log and drivers that Windows loads.

As always, EARS Club is not responsible for the Messing up of your computer by following any of these tips. Just blame it on your Fat Fingers!

Installing a Mobile Radio

By Matt Tucker, N6EAJ



Installing a Mobile Ham Radio: The Why and How

A handy-talkie (HT) is often the first VHF/UHF radio a ham buys.

They come with a power source and antenna, and can be used while mobile, at home, or for community service. I used my HT in my truck with an external antenna for several years.



Even though it only took about 30 seconds to pull the HT out of my backpack, slide it onto a mount, and screw on the coax, it was enough to keep me from listening while mobile most of the time.

I would only hook it up if I was expecting to talk to someone. I started talking on simplex frequencies where not having a repeater on a hill greatly reduced my range with the 5 Watt output of my HT. This led me to look into a dedicated mobile VHF/UHF radio.

I decided on the Yaesu FT-8800R. It covers 2m and 70cm, has dual receive capability, and a detachable

face plate for remote mounting. For safety and convenience, I wanted to mount the radio where it would be very easy to operate and see. I also wanted it to look like it came with the truck from the factory.

I had an empty plastic “pocket” below my stereo that I didn’t use so I decided to mount the new ham radio right below my car stereo. The Yaesu faceplate can slide off similar to a car stereo detachable face plate.

I had to cut a section of the plastic pocket out to give enough clearance for the faceplate. I also wound up mounting a piece of wood inside the pocket so I could easily use the faceplate mount that came with the separation kit. A Dremel tool, drill, and screwdriver were the only tools needed.



The detachable faceplate is connected to the main unit by a long cord. I had audio amplifiers underneath both my front seats so the main unit needed to go behind my rear seat (a double cab truck).

I already had large gauge power wires running to my audio amplifier under my front seat so I attached the power wires for the main unit there. I of course already had a fuse as close to the battery as possible for those large gauge power wires

(safety first!). Mounting of the main unit was easy since I had the metal back wall of the cab.



I decided to upgrade my antenna at the same time and bought a Diamond NR-73BNMO. The best antenna position would be on the roof, but I have very little clearance between my roof and the garage frame when I enter the garage.



I went with a compromise and put the antenna on the rear top corner of the bed. This lets the antenna radiate mostly unobstructed since the cab is a far away from the antenna as possible.

Since the radio is right there on my dash, turning it on is as easy as turning on my AM/FM radio. I find I listen and talk much more on the repeater and simplex frequencies than I use to. The high power output (50W 2m, 35W 70cm) gives me much more flexibility. Since the main unit is behind the rear seat, the built-in speaker can't put out enough volume for me if the engine is running. I ran the audio output of the FT-8800R to both a dedicated speaker and the AUX input of my car stereo. For general monitoring, I use the dedicated speaker that is in my center console (arm rest lifted for the picture).



This lets me listen to music or podcasts through my car stereo speakers while still keeping an ear to ham radio activity. If I need more volume, I can switch the car stereo input to AUX and use my car stereo amps/speakers to get all the volume I need.



Power Inverters

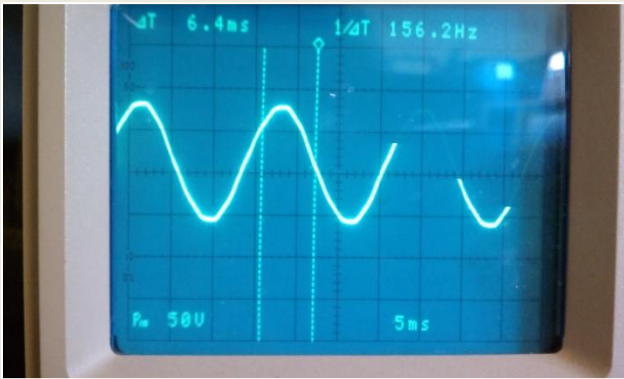
By John McNelly, AF6UA



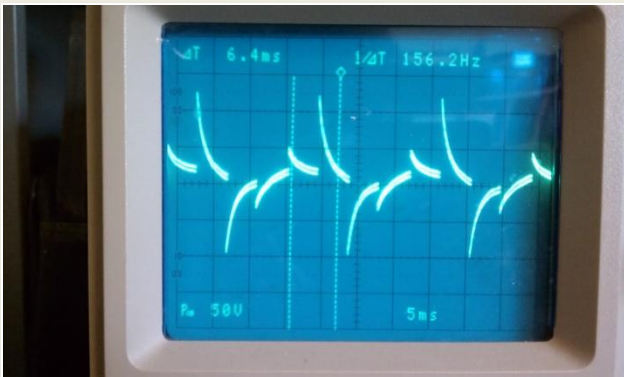
I recently obtained an inexpensive power inverter (call it about \$30 range).

Curious, I had Roger, K6EQ hook it up to his oscilloscope.

The first photo shows what AC power looks like coming from SDG&E -- a nice sine wave:



The second shows the "modified sine wave" put out by the power inverter:



So the story is - If you're going to use a power inverter for your radios, be sure it's a high quality one!

The Escondido Christmas Parade

Images provided by Matt Tucker, N6EAJ

For those of you who didn't / couldn't make it to see the Escondido Christmas Parade -- here's a couple of photos to remind you that it doesn't always rain:



Thanks to Bruce Woods for arranging the EARS participation.

The EARS Christmas Party

Information provided by John Belstner, W9EN

For those of you who didn't / couldn't make it to the EARS Christmas party at the Belstners', <ctrl-click> on the following link to take you to the photos to see what fun you missed:

<http://www.flickr.com/photos/10069928@N02/sets/72157632259673803/>

Emergency Services Update

By John McNelly, AF6UA



As a reminder - here's a handy list of local VHF/FM EMCOMM nets:

San Diego ARES

Sun 08:30 146.730 (-) 107.2 (PARC)

RACES

Mon 19:30 147.195 (+) 114.8

Escondido CERT

Tue 19:00 146.880 (-) 107.2 (EARS)

North County and Back Country CERT

Wed 19:00 147.030 (+) 103.5 (ECRA) (on 2nd & 4th Wednesdays).

You should be prepared to switch to 146.445 SIMPLEX as directed by the CERT nets.

If you want a signal report or to do simplex mapping of Escondido, feel free to join the weekly CERT net on Tuesday nights.

If you have any questions, please feel free to contact me:

John McNelly, AF6UA
(858) 449-3326
ears@mcnelly.org

Opportunity Drawing Update

By Teri Bloom, W6TRB



For the next drawing to happen, we have to sell another \$40 worth of tickets.

We're hoping that we can do that, and hold the drawing at January's meeting.

Still up for grabs is the Yaesu VX7R and accessories.

We hope to see you all there!

Current EARS Membership

By Steve Venner, W6TAN



This past month, there were no new members joining.

However, I should have mentioned in last month's ALL

EARS that there was one new member joining:

Bill Rubin, W6CBJ

Welcome aboard Bill!

Therefore, the current EARS membership as of 31st of December, 2012 is:

- Life: 51
- Paid: 79
- Total: 130

Note: The annual dues are due, so let the moths out of your wallets & purses, and fork over your \$15 to our treasurer - Teri Bloom, W6TRB.

Either - mail your checks to:

EARS,
PO Box 3243,
Escondido,
CA 92033

Or hand over your 'dosh' to Teri at January's regular meeting.

If you pay by check – don't forget to put your call-sign on the back.

EARS Elmer List

By Steve Venner, W6TAN



Here is the current list of those kind soles who have volunteered their Elmer services:

(Note new addition of Ron Pollack, K2RP)

1. Harry Hodges, W6YOO

- *Award programs such as WAC, WAS, DXCC, VUCC, IOTA, etc. to include card checking.*

2. Dick Kalkofen, K6KAL

- *Software development and hardware interfacing.*
- *Radio to PC communications.*
- *Logging Software: WinTest, Writelog, DX4Win, N1MM, Ham Radio Deluxe and many others.*
- *Digital mode software, link FLdigi, MMTTY for PSK, RTTY, WISPR, JT65 etc.*
- *Kit building (WinKeyer USB, FA-SM CW/Voice Keyer, Idiom Press Voice Keyer.*
- *Antenna setup and tuning.*

3. Matt Tucker, N6EAJ

- *General electronics (analog), power supplies, audio, batteries.*
- *PSK31 and similar digital modes.*
- *Operating and setting up the computer/radio interfaces.*
- *Basic antennas (VHF for home or car), HF dipoles and multi-band doublets / antenna tuners.*

4. Mike Hightower, KF6SJ

- *HF and in particular, digital modes of PSK31 and JT65.*

5. John Musselman, N6EP

- *HF, electronics, contesting, "other"...*

6. Marvin Munster, W6MJM

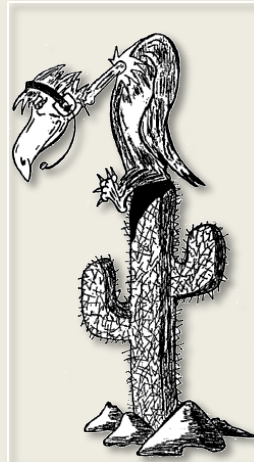
- *Emergency Power Sources, Batteries, Solar, etc.*
- *DC Cables and Hook-Up*
- *Coax Cables and Connector Assembly*
- *DC Power Distribution*

6. Ron Pollack, K2RP

- *Antique and tube equipment (boat anchors)*

Yuma Hamfest

Information provided by Marvin Munster, W6MJM



This is just a reminder that the 2013 ARRL Arizona State Convention will be held early in the year, in conjunction with the Yuma Hamfest on February 15-16, 2013 in Yuma, Arizona.

For those not familiar with the Yuma Hamfest, it is one of the largest hamfests held in the ARRL's SW Division, and

now in our ninth year, is the only multi-day convention-style Hamfest held in Arizona.

We feature vendors, tailgating, RV camping on site, seminars held in parallel tracks in two separate buildings, amateur license testing, DXCC card checking, the famous Buzzard BBQ dinner, an antenna clinic and transmitter hunt, a huge grand prize drawing, hourly door prizes, a hospitality area, the "Country Store" consignment sales area, and much more.

Our use of a fairgrounds venue allows us to control costs for both vendors and attendees. We feature \$5 admission, \$50 vendor spaces, and a \$10 catered dinner.

We anticipate similar marketing and attendance for 2013. Please check our website at www.yumahamfest.org for more information.

We have several new options for those staying in a motel, so check out that page on the website.

You can contact me by email at info@yumahamfest.org or by phone at 928-305-1034 if you have any questions.

If you have a seminar that you would like to present, please contact us about that as well.

Roger Hunt (K7MEX)
Director, Yuma Hamfest
2013 Arizona State Convention

Technical Challenge

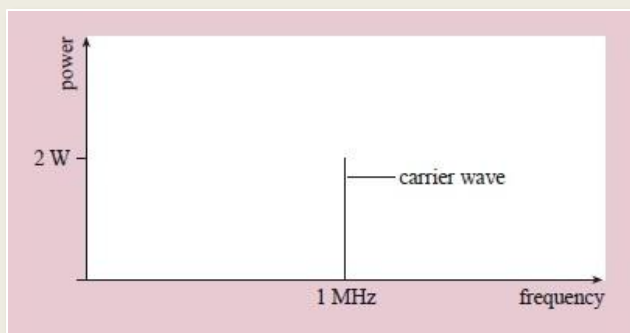
By Steve Venner, W6TAN



This month's Technical Challenge is to do with spectral efficiency.

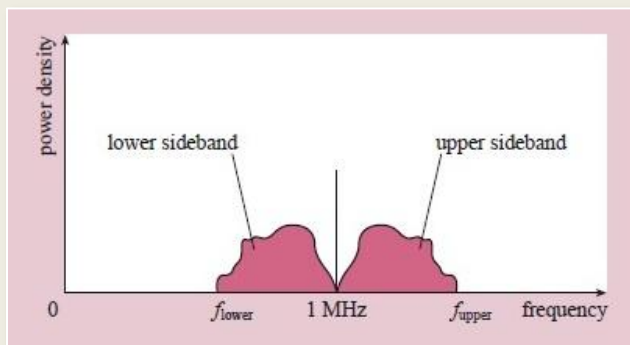
We start with saying that the modulation of any property of a sinusoidal carrier wave, whether amplitude, frequency or phase, affects the spread of frequencies occupied by a carrier.

An unmodulated sinusoid occupies a single frequency as shown in the following figure:



In the above figure, there is only a single frequency - that of the unmodulated carrier, which in this case has a frequency of 1 MHz.

If the unmodulated carrier shown above is amplitude modulated with speech or music, then it will have a wider frequency spectrum than when it is unmodulated:



In the above figure - you can see that there are now lobes on either side of the carrier frequency.

These are called sidebands. There is an upper sideband above the carrier frequency, and a lower sideband below it.

For normal quality analogue communications, a typical a.m. transmission will occupy about 6 KHz, and for your normal SSB QSO - this will occupy about 3 KHz. CW & data modes occupy even less.

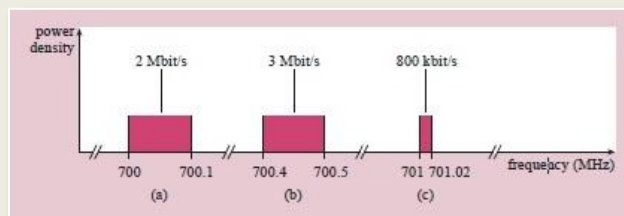
However, in this day-and-age of digital communications (for cell-phones for example) - high data rates are required for most phone applications.

Higher data rates can always be achieved by using more of the frequency spectrum, i.e. by having a wider bandwidth. Unfortunately, this comes at a cost (both financially and otherwise).

Spectral efficiency is therefore an important performance measure of how well a data transmission system uses the frequency spectrum - an efficient system being one that uses relatively little of the spectrum whilst still giving a useful data rate.

Spectral efficiency is measured in bits per second per hertz.

The following figure shows a frequency axis with a series of frequency channels and some information relating to the data rate of a transmission in that particular channel:



Your challenge is to calculate the channels' spectral efficiencies.

For (a) the bandwidth is $(700.1 - 700) \text{ MHz} = 0.1 \text{ MHz}$. The data rate is given as 2 Mbit/s, so the spectral efficiency is:

$$2 \text{ Mbit/s} \div 0.1 \text{ MHz} = 20 \text{ Mbit/s/MHz} = 20 \text{ bit/s/Hz}$$

Therefore - what is the spectral efficiency of channels (b) & (c)?

Hence which of the three transmissions is most spectrally efficient?

General Information

EARS Club Officers for 2013:



President (Jan-Jun)
John Musselman, N6EP
(760) 747-5303
n6ep@arrrl.net



Vice President
Matt Tucker, N6EAJ
(760) 839-1205
mail4tucker@gmail.com



Secretary
Michael Hightower, KF6SJ
(858) 613-9240
mike@hightower.com



Treasurer
Teri Bloom, W6TRB
w6trb@earsclub.org



Emergency Services Coordinator
John McNelly, AF6UA
(858) 449-3326
ears@mcnelly.org

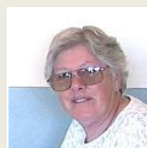
Officers at Large:



Dirk Reschly, N6SUN
(760) 743-5839
n6sun@earsclub.org



John Belstner, W9EN
w9en@arrrl.net



Jo Ashley, KB6NMK
(760) 741-2560
kb6nmk@amsat.org

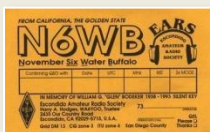


Bruce Woods, KI6YFH
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bewoods75@yahoo.com



Marvin Munster, W6MJM
(760) 747-2223
w6mjm@amsat.org
+ *Property Manager*

About ALL EARS:



ALL EARS is the official bulletin of the Escondido Amateur Radio Society.

An e-mail subscription to **ALL EARS** is FREE!

You don't need to be a member. Just drop a note to:

allears@earsclub.org

Permission is given to copy any article contained in ALL EARS when not otherwise copyrighted, and provided proper credit is given.

Note: The deadline to submit material for the bulletin is by the 1st Thursday of the month.

Non-elective:



Past President
Robert Kitson, KI6SBL
(760) 715-2876
ki6sbl@earsclub.org



Historian
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(760) 743-4212
w6yoo@cox.net



Webmaster and Newsletter Editor
Steve Venner, W6TAN
+44 1895 636099
w6tan@earsclub.org

General Information cont'd

SUNDAY EVENING NET

EARS Sunday evening net is every Sunday at 8 p.m. local time. You can get the latest information on club activities there.

Just tune in to the club's 2m repeater at 146.88 MHz, negative offset and PL of 107.2, check in and say "Hi!".

SECTION NEWS

The latest happenings around San Diego are available at the official website of the ARRL San Diego Section:

<http://www.arrl.org/Groups/view/san-diego>

EARS PINS

EARS 2010 Board had EARS lapel pins made. They are yellow 1" circles with the EARS Logo in the middle.

They are only \$5.00 each, so get yours today by contacting: Robert Kitson; ki6sbl@earsclub.org

AMATEUR RADIO LICENSE RENEWALS AND CHANGE OF ADDRESS

To renew your license or supply the FCC with a change of address, use NCVEC Form 605 (obtainable from Harry, W6YOO).

Attach a photocopy of your license and mail to:

SANDARC VEC,
5511 Maryland Drive,
La Mesa,
CA 91942-1519.

Note: You **MUST** include your FRN Number.

There is no charge for this service.

HAM RADIO LICENSE PLATES

All California hams may receive their call sign on their license plate.

Use DMV Form REG17A. The cost is \$21.00 and is a one-time fee.

VE TESTING

A SANDARC Volunteer Examiner team administers license examinations on the last Saturday of each month at 9:00 a.m. at:

The LDS Church,
1917 East Washington Avenue,
Escondido,
CA 92025.

Contact Harry, W6YOO, at (760) 743-4212 or w6yoo@amsat.org to schedule an appointment.

SANDARC

"EARS" is a member of the San Diego Amateur Radio Council, an association of San Diego area Amateur Radio clubs.

Among other things, SANDARC runs the local Volunteer Examiner program (SANDARC-VEC), and manages the ARRL southwestern Division Convention when held in San Diego every fourth year. See www.sandarc.net

CLUB REPEATERS

"EARS" operates three repeaters in the Escondido area.

- 146.88 MHz, minus offset, PL 107.2
- 224.14 MHz (AE6GM repeater), minus offset, PL 156.7
- 449.24 MHz, minus offset, PL 127.3

The 2m and 70cm repeaters are local in nature and primarily serve the immediate Escondido area.

ECHOLINK

The 2m repeater is tied to the EchoLink system as node 2846.

See the Club website, www.earsclub.org for information on EchoLink.

There is also a listing of local EchoLink codes in the members section of the website.

General Information cont'd

EARS WEB PAGE

"EARS" is on the Internet!

You can read about upcoming activities, get links to other ham radio sites, read back issues of All Ears, or update your call or address.

The site is updated regularly. Check it out at

www.earsclub.org

EARS REFLECTOR

These are free services that keep members up-to-date via e-mail.

To subscribe to either one of the reflectors, go to the EARS website and click on the Yahoo or Google Group links at the bottom of the main page.

CHANGE OF ADDRESS OR CALLSIGN

Please let us know if you change your address, call-sign, telephone, license class, e-mail, etc.

We want to keep our records up to date, so please contact any club officer with the updated information.

CLUB BADGES

Let everyone know that you are a member of EARS, and avoid having them guess what your name is.

Get your Club Badge from:

Glaser Bailey,
2015 S. Escondido Blvd,
Escondido,
CA 92027
(760) 743-5551

MONTHLY BREAKFAST

EARS members meet socially the third Saturday of each month at 08:30, at:

Due to the fire at Spires, until further notice, EARS breakfast will be at the old venue:

Westside Cafe,
9th and Redwood.

ARRL LETTER

The ARRL Letter, a weekly e-mailing of Amateur Radio related news, is available to ARRL members free of charge directly from ARRL HQ.

To subscribe for e-mail delivery, ARRL members first must register on the Members Only Website, www.arrl.org/members.

The ARRL Letter is also available to all, free of charge, at www.arrl.org/arrlletter where it is posted each Friday after it is distributed via e-mail.

EARS HATS, SHIRTS AND JACKETS

Hats, shirts and jackets are available with the EARS logo.

Order them directly from:

Print World,
107 S. Andreasen Dr.,
Escondido,
CA. 92029
(760) 747-6443

Just let them know you are a member of EARS.

Emergency Services

MONTHLY ARES® MEETING

The San Diego section ARES® meets on the second Saturday of each month at 8:00 a.m. at:

Scripps Memorial Hospital,
Nobel Room,
Schaetzel Building,
9890 Genesee Ave,
La Jolla,
CA 92037.

Parking is available in the first lot to the right after the guard shack. The parking fee is \$4.00 and is antenna friendly.

If interested, go to www.sdgares.net or contact Steve Early, Section Manager, (619) 461-2818, or via e-mail at ad6vi@arrl.org.

EMERGENCY SERVICE NETS

Amateur Radio Emergency Service (ARES) San Diego

Sunday, 08:30 146.730 (-) 107.2

Community Emergency Response Team (CERT) Escondido

Tuesday, 19:00 146.880 (-) 107.2

Followed by 146.445 SIMPLEX, as directed

Community Emergency Response Team (CERT) North County and Back Country

Wednesday, 19:00 147.030 (+) 103.5

Followed by 146.445 SIMPLEX, as directed (on 2nd & 4th Wednesdays)

Radio Amateur Civil Emergency Services (RACES) San Diego County

Monday, 7:30 PM 147.195 (+) 114.8

Escondido Amateur Radio Society

Membership Application and Renewal Form

*Call _____

*Last Name _____

*First Name _____

*Street Address _____

*City _____ *State _____ *Zip _____

Home Phone _____

Cell Phone _____

*Email _____

License Expires _____

EARS Family Members _____

License Class _____

First Licensed _____

Old Calls _____

Date of Birth _____

ARRL Member (Y/N) _____ Life Member (Y/N) _____

Amateur Related Interests _____

ARRL, RACES, ARES, SATERN, Red Flag, HF, VHF, UHF, Packet, EchoLink, D-Star, T-Hunt, ATV, Field - Day, Contests, Antenna Design, Equipment Building

Are you willing to run for a club office (Y/N)? _____

Note: Fields marked with a (*) are required.

A Telephone number is requested, but may be unlisted in the roster if you prefer.

Membership Rates:

One year \$15.00
 Family membership \$4.00
 Lifetime membership \$150.00
 Lifetime membership (family) \$38.00

Mail this form with payment to:

EARS,
 PO Box 3243,
 Escondido,
 CA 92033,

Or give it to the treasurer or any other club officer at a regular club meeting.

Checks please, it is safer than cash, and you have a record!

Membership is from January 1 to December 31.

After July 1, membership to the end of the year is ½ the annual fee.

Special rates apply for family membership for each additional licensed amateur radio operator in your immediate family and for lifetime membership.

For membership confirmation, include a self addressed stamped envelope with this form.