SCOPE

Palomar Amateur Radio Club July 2017

Inside this issue:

2017 Field Day

Jim, NE60 shows Ham Radio to a new generation at the GOTA station at EARS Field Day

Keith KM6CXW, Paul KB5MU and Michelle W5NYV staff PARC's table at the North County Mini Maker Faire in

North County Mini Maker Faire®

It Appears By Spears

I hope everyone is staying cool in this hot weather.
There were two great events in June. First we had the North County Maker Faire in Vista. It was a great time and we talked to all sorts of people about ham radio. Please see Michelle's article on Page 10 for the wrap up.

Some members of PARC participated in Field Day with EARS. They appreciated our help.
In this issue Bernie, N6FN continues his series on Echo Link. On page 16 there is an interesting article on 630 meters from Bill N6PIG.

Be sure to join us on July 7th for the second part of David Hulls, KC6N presentation on Digital Modes
There will be no Scope in August as my wife and I will be on vacation during July.

Have a safe 4th of July.

73 de KM6CXW
Keith Spears

Presidents Corner

"Our Picnic will be in September again this year,!"

Greetings HAMs! I hope everyone is having a great summer, enjoyed their Field Day at one of the locations we joined up with (Poway or ARES), I've seen some great photos and heard exciting stories already. Our Picnic will be in September again this year, keep an eye out for more details coming soon. We felt the weather treated us better than it has in August, and we'll keep a close eye on other radio events in the community as we pick the date. Expecting to be the last weekend in September, so if anyone knows of a conflict, let me know!

Radio Scouting

Call out for help for Radio Scouting:

1) Need volunteer to test Kenwood TS 430S, and Yaesu FL 7000 linear amp with Yaesu 990 (as a system). Gear was donated to Scouts. Condition unknown.
2) Need volunteers to help replace 5 - 6 sheets of drywall in Scout Radio Room at Camp Balboa. Entails removing damaged drywall and replacing with new.
3) Need volunteer to test and repair grounding system in Scout Radio Room at Camp Balboa. Old ground strap appears to be severed.
4) Need volunteer to test and repair antennas in Scout Radio Room at Camp Balboa. Parts are there, but in disrepair.

See kk6frk@arrl.net if you are hankering to help.

Board Members and Committee Chairs

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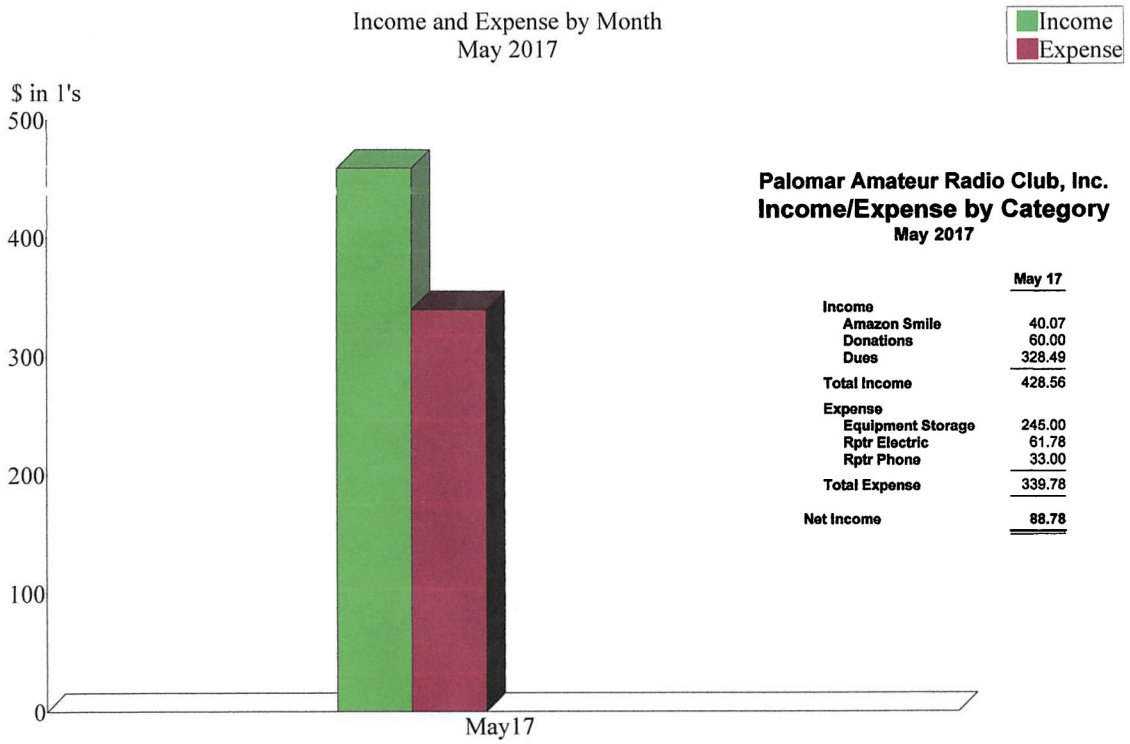
Repeater Site Chair	Mark Raptis, KF6WTN	(Acting)

Committee Chairs

Boy Scouts	Michael Palugod	mpalugod@yahoo.com
Digital ATV	Michelle Thompson, W5NYV	mountain.michelle@gmail.com
Echo Link	Bernie Lafreniere N6FN	N6FN@niftyaccessories.com
HF Remote	HF Remote SIG	hfremote@palomararc.org
Mesh Networking	Michelle Thompson, W5NYV	mountain.michelle@gmail.com
Operating Day	Tom Martin K6RCW	k6rcw@amsat.org
SANDARC Representative	John Walker AC7GK	ac7gkjohn@gmail.com
SANDARC Representative	Paul Williamson KB5MU	kb5mu@amsat.org
SD Microwave Group Liaison	Kerry Banke N6IZW	kbanke@sbcglobal.net

WANTED: Book "Ampilfing devices and low pass amplifier circuits", 1968, by Cherry and Hooper. Can buy or have many other books to trade.
Mike Zuccaro, AG6mQ, 858-271-8294 or mjzuccaro@aol.com"

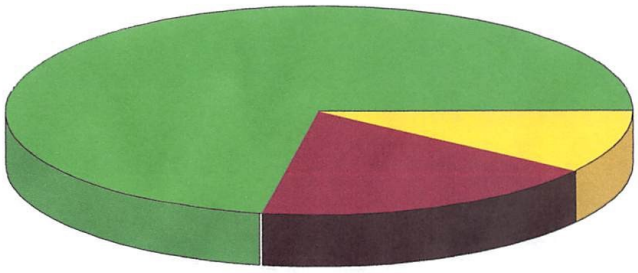


Palomar Amateur Radio Club, Inc.
Income/Expense by Category
May 2017

	May 17
Income	
Amazon Smile	40.07
Donations	60.00
Dues	328.49
Total Income	428.56
Expense	
Equipment Storage	245.00
Rptr Electric	61.78
Rptr Phone	33.00
Total Expense	339.78
Net Income	88.78

Expense Summary
May 2017

Equipment Storage	$ 245.00
Rptr Electric	61.78
Rptr Phone	33.00
Total	$ 339.78



By Account

July Program—July 5th

Join us as David Hull, KC6N gives an overview of digital voice technologies. The talk will be in two parts. The first part on the evening of June 7th will address the technical aspects of digital voice operation, what it does , why we might want to do it and how it works.

Dave will go over DSTAR, DMR and Fusion as well as provide an overview of the different radios available for the respective modes.

Dave Hull has been licensed since 1966 (originally in San Diego as WB6SHG) receiving the Extra as KC6N in 1979. Dave is recently retired from 45 years as an electrical engineer specializing in the fields of RF radio and digital modem design including the C$FM and GMSK modes will be discussing this evening. Dave holds a BSEE and an MSEE from SDSU and taught digital communications engineering the UCSD Extension for five years.

Upcoming Events

Wednesday, July 5th	7:30	PARC Meeting	Carlsbad Safety Center
Wednesday, July 12th	7:00	PARC Board Meeting	Poway Fire Station #3
Wednesday, August 2nd	7:30	PARC Meeting	Carlsbad Safety Center
Wednesday, August 9th	7:00	PARC Board Meeting	Poway Fire Station #3
Wednesday, September 6th	7:30	PARC Meeting	Carlsbad Safety Center
Wednesday, September 13th	7:00	PARC Board Meeting	Poway Fire Station #3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There is a difference. The HQ-129-X receiver is designed purely from a professional point of view. The treatment of every detail is based on professional requirements. As soon as your dealer has the HQ-129-X in stock, go in and look it over and try it—you will see, hear and feel the difference.
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Repeater Status

This list includes W6NWG repeaters operated by PARC and other repeaters open to use by PARC members. All W6NWG repeaters are located on Palomar Mountain and are open to all amateurs.

Frequency	TX	Tone	Call sign	Remarks
52.680	-	107.2	W6NWG	Back on the air. Performance tweaking in progress
146.730	-	107.2	W6NWG	System Fusion enabled. See Note 1
147.075	+	107.2	W6NWG	System Fusion enabled. See Note 1
147.130	+	107.2	W6NWG	System Fusion enabled. See Note 1
447.000	-	107.2	W6NWG	FM only for EchoLink
224.380	-	107.2	KK6KD	Americas Unidos. Down for repairs
224.900	-	107.2	WD6HFR	Convair/220 ARC
224.940	-	107.2	KK6KD	Sharp Hospital coverage
146.970	-	107.2	KA3AJM	Vista-Sponsored by MetroNET
146.175	+	107.2	N6FQ	Fallbrook ARC; linked to 445.600
445.600	-	107.2	N6FQ	Fallbrook ARC; linked to 146.175
145.050	s	N/A	W6NWG-1	Packet node; linked to metro 9600 net 1
146.700	-	N/A	W6NWG-3	Packet duplex repeater; Duplex 3

PARC operates an armature fast-scan television repeater. It's currently off the air. Currently there are not links to other ATV sites.

- ATV in: 915 MHz WBFM audio subcarrier 5.8 MHz
- ATV in 2441.5 MHz WBFM, audio subcarrier 6.0 MHz
- Intercom: 146.415 MHz NBFM simplex (tone 79.7). Currently not working.
- ATV out: 1241.25 MHz VSB, NTSC Standard

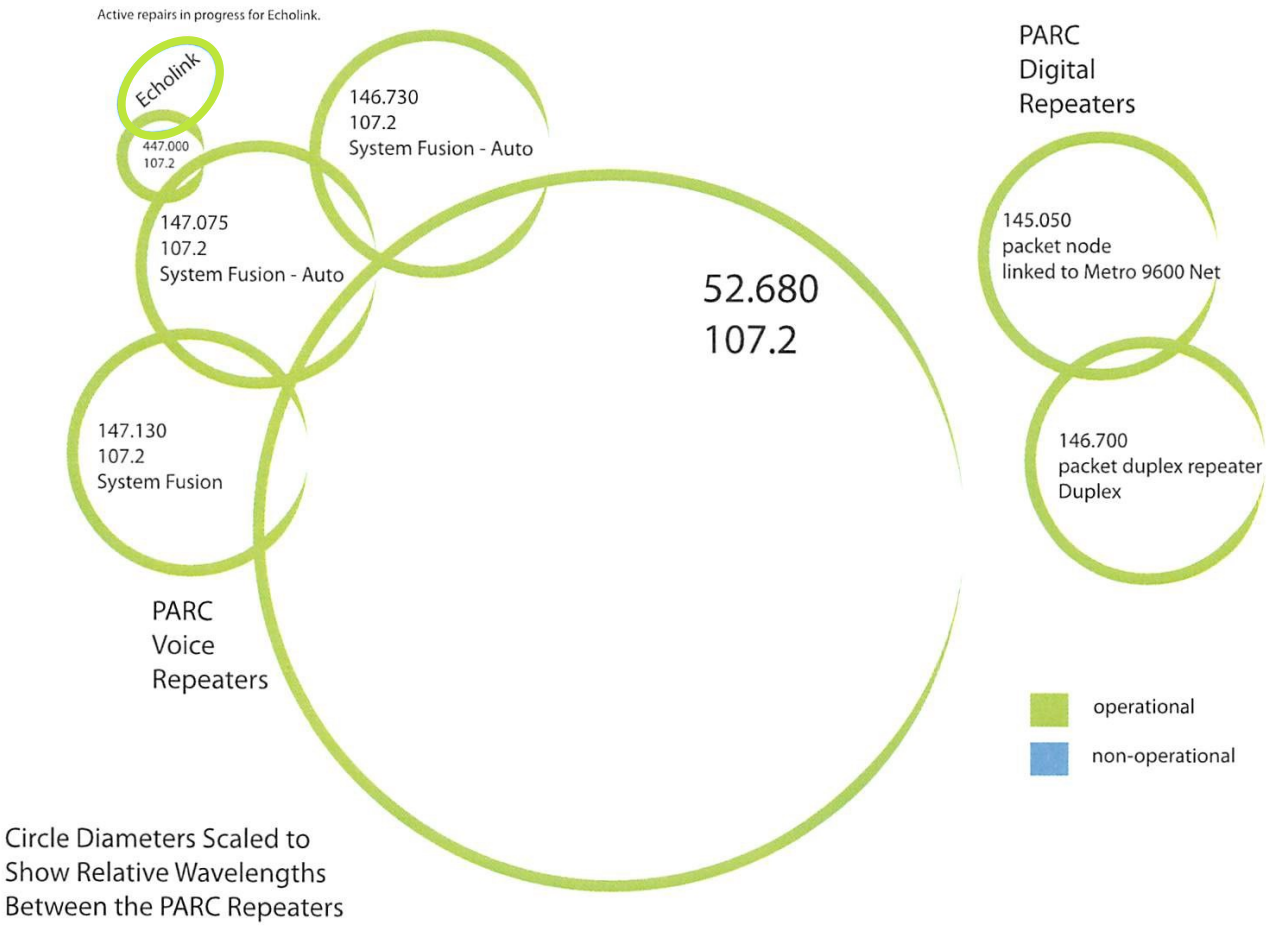
The PARC repeater site on Palomar Mountain is located at 5560 feet above mean sea level and 2132 above mean terrain. It covers most of San Diego County and beyond into Mexico and out to sea, and is shielded from the North.

Note 1: All Fusion enabled repeaters require a CTCSS tone of 107.2 Hz to access the repeater and also transmit a 107.2 Hz tone. Since the repeater output has a 107.2 tone you can enable CTCSS receive tone squelch on your transceiver which will eliminate interference from spurious noise and other repeaters. Control operators have the capability of setting the Fusion Repeaters to FM only operation. Consequently if you can't bring up the repeater in C4FM digital mode, try using normal FM mode. When in FM mode all Fusion repeaters have a 3 minute maximum transmit time, after which the repeater will cut off transmission until after the received signal drops. To prevent timing out the repeater after someone finishes talking, wait until you hear the courtesy beep which indicates that the 3 minute time ahs been reset. If a transmit timeout happens the repeater will provide a voice message indicating that the maximum transmit time has been exceeded.

Note 2: PARC no longer operates an autopatch or packed BBS

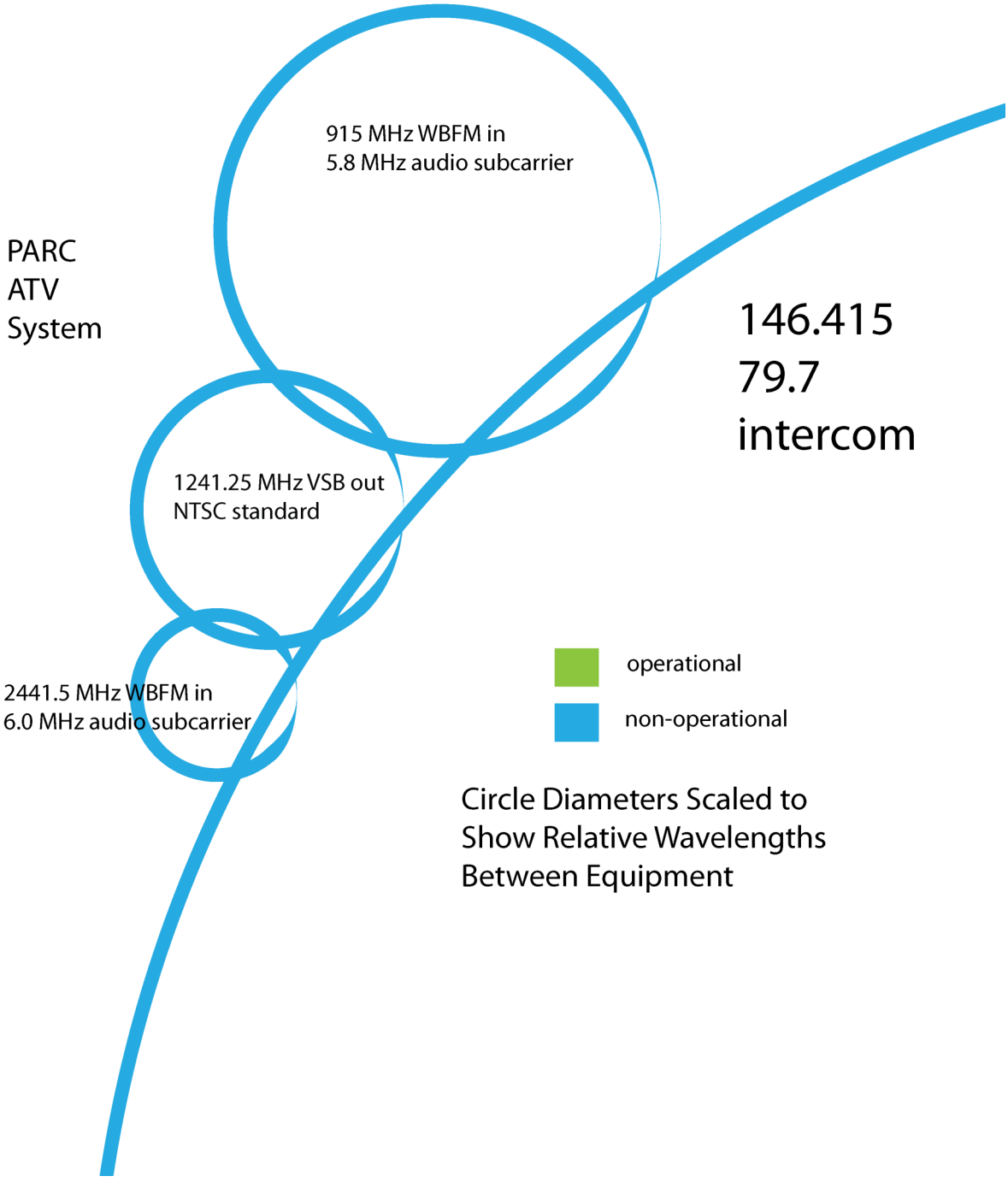
Another project is underway to investigate installing remotely-operated HF station at the repeater site as discussed. Join the Remote mailing list to participate.

Reported Repeater Status



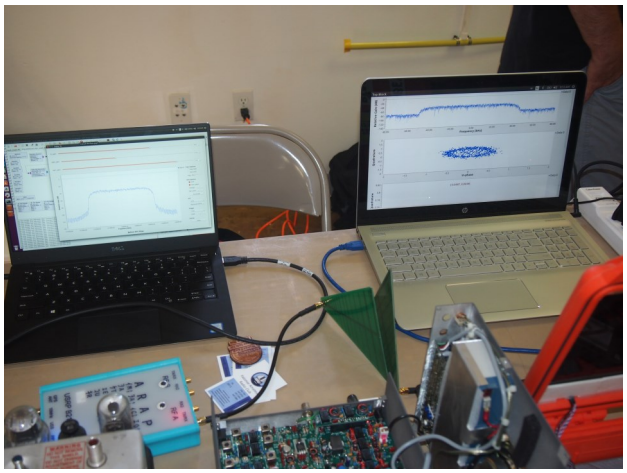
Thanks to Michelle Thompson, W5NYV for the repeater status graphics.

Reported ATV Status



North County Mini-Maker Fair—Michele Thompson W5NYV

Thank you very much to Keith Spears, Michael Gottlieb, Paul Williamson, Jim Campbell, Bob Janka, and Jon Studer for helping out with the Amateur Radio Fun booth at the North County Maker Faire at Antique Gas and Steam Museum!



This was a big success. We received a fun laser cut and embossed award from the organizers for the impressive array of amazing technology, and we have been strongly encouraged to continue any and all efforts to bring more amateur radio to more Maker Faire events in San Diego. We will be enthusiastically welcomed back next year at the North County Maker Faire, and many of us will be working hard on making the San Diego Maker Faire at Balboa Park an exciting venue for amateur radio. That event is in October.

We had curious, educated, and engaged visitors of all ages visit our booth over the two days. Weather was warm, but our location in the Assembly Hall was relatively cool and comfortable. Food and restrooms were a few steps away, and we were located near robotics, steampunk, agricultural sensing technology, and home-brew video games. Just outside was solar stoves, solar "lasers" that cut through a variety of materials, cigar box banjo kit building, and several hands-on activities where participants got to take home a small item that they made themselves. Elsewhere in the Faire were many other exhibits ranging from art cars to "learn to solder" stations

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North County Mini-Maker Fair— Continued

where participants took home a blinking LED badge.

The people that come to Maker Faire are extremely friendly towards amateur radio. Many of them are young. A lot of them know or have heard about it, have licenses, or are studying for a license. Many used to do radio a while back, but don't do it any more. One of the more common questions is whether or not you still have to learn morse code. Another common question is whether or not they can experiment with digital modes.

It was a great pleasure to organize and staff this effort. Next year, I'd like to build on the success of the booth. The ideal would be an amateur radio village with multiple exhibits and operations. Since camping is welcome and encouraged on the site, and amateur operations are welcome, this could have a true Field Day feel. A special event station commemorating the Faire would be a worthy effort.

The noise floor for HF would be a challenge given the number of motors, fluorescent lights, and power supplies buzzing away during the Faire, but there's higher bands, and there are of course some digital modes that can make it though.

More soon, planning for San Diego Maker Faire at Balboa Park is ramping up.

-Michelle W5NYV

Mountain Top Report-John Kuivinen WB6IQS

"When working on an antenna tower due to safety requirements you have to silence all the transmitters on the tower."

On June 18, 2017 I went up to the mountain with Alex, KK6BAD, and a group of 220 repeater supporters to work on the Palomar Mountain radio site.

We installed a new 220 MHz 2-Bay antenna at the 60' level, ran the coaxial hard line cable and got everything on their new repeater working about 2:30 PM.

Since Alex had a friend that was also a commercial tower climber we also looked into why the 447 MHz repeater was acting so poor. He found that the center socket on the coaxial hard line cable had pulled back about 0.035" and was barely making contact with the center pin of the antenna cable. The pictures are hard to make out but the connector was corroded and stretched due to hanging on the tower for so long.

The brass fitting is the one that was at the top of the tower, the stainless steel fitting is a new "normal" N connector.

When working on an antenna tower due to safety requirements you have to silence all the transmitters on the tower. RF exposure can cause long term damage to body tissue. The repeaters were off the air all day.

I removed an extra Gas-Fet RF preamplifier on the 2 Mtr receiver path. This may stop the funny noise that has occasionally bothered the 146.730 repeater.

(Continued on page 13)

Mountain Top Report—Continued

When powering up the PARC repeaters most of them returned on OK but the 146.730 and 447.000 initially had a short circuit somewhere in the primary power cable. The switching power converters takes our primary voltage of 48 VDC and converts it down to 13.8 VDC. The short circuit caused the switching converter to short out and may have damaged the converter.

I replaced the switching power supply with a temporary 13.8 VDC AC analog supply that we keep on the site for such an emergency. The replacement supply got these two repeaters back on the air. In the near future we will have to check out the 48 VDC power supply to see if can be salvaged.

As it was now about 4 PM I decided to "call it a day" and restore the 447 MHz repeater to its' original antenna (which I suspect is bad!). Murphy was definitely looking me over this weekend. One bad cable fitting and an antenna that has about a 3:1 VSWR at our repeaters' frequency. Better a poor something than a total nothing however. Alex has assured me that in a few weeks or a month we can re-schedule the tower climber for a better look at the 447 repeater antenna and possible replacement.

John Kuivinen, WB6IQS
Vista, CA

"I replaced the switching power supply with a temporary 13.8 VDC AC analog supply that we keep on the site for such an emergency. ."

He who has the most toys wins!

"This is what happens when the Sun Spots are not with you"

Membership Report

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@palomararc.org.

Check the status of your membership 24/7 at **Member List**. If you don't find your name and callsign on that page, then your dues have lapsed. If you have questions, send email to Membership@palomararc.org.

Polo Shirts

We're ordering Polo shirts! Some of you already have orders in with me from the last meeting, please be ready to pre-pay for them so we can get the order placed ASAP! We need 20 shirts to get the price I've been quoted. If we end up with 30+ then the price goes down and I'll have a little change for those who have pre-paid once your shirts come in!

Base price: $21.00 includes printing on the front, PARC logo on one side and your name/ callsign over the pocket. Add $2.00 for 2XL, $3.50 for 3XL, or $5.00 for 4XL

Add $5.00 if you also want the logo printed large on the back.

73 de K6JPE
Joseph Peterson

What does it take to get on 630 meters.

Email KQ6LY@HOTMAIL.COM

At some point in the future the FCC will open the 630 meter band for general amateur radio operators. The rules are unknown at this point but power and bandwidth will be limited. Here is what I think will get you on the air to start since equipment is not readily available. Most likely CW or JP65 will be the most efficient for making successfully logged QSOs.

Antenna.

A quarter wave antenna for 475Khz wants to be over 500 feet tall. No ham I know has such a tall antenna. At these lengths, horizontally polarized antennas like dipoles become cloud warmers and do not propagate well. If you have a ground mounted antenna with a buried wire ground plane, you can resonate it with a series inductor at the bottom. Here is a table showing approximate inductance needed for resonance, antenna efficiency, and estimated EIRP power.

Antenna	Inductance to resonate	Radiation resistance	Radiation efficiency	power to reach 1w EIRP	Power to reach 5w EIRP
43 foot vertical	470uH	0.177ohm	0.30%	350	1700
BTV-5	890uH	0.055ohm	0.09%	1100	5600
wire 40ft vertical with a 50ft T on top	400uH	0.357ohm	0.61%	175	820
100 ft tower with Multiband yaggis	155uH	2.1ohms	3.60%	30	140

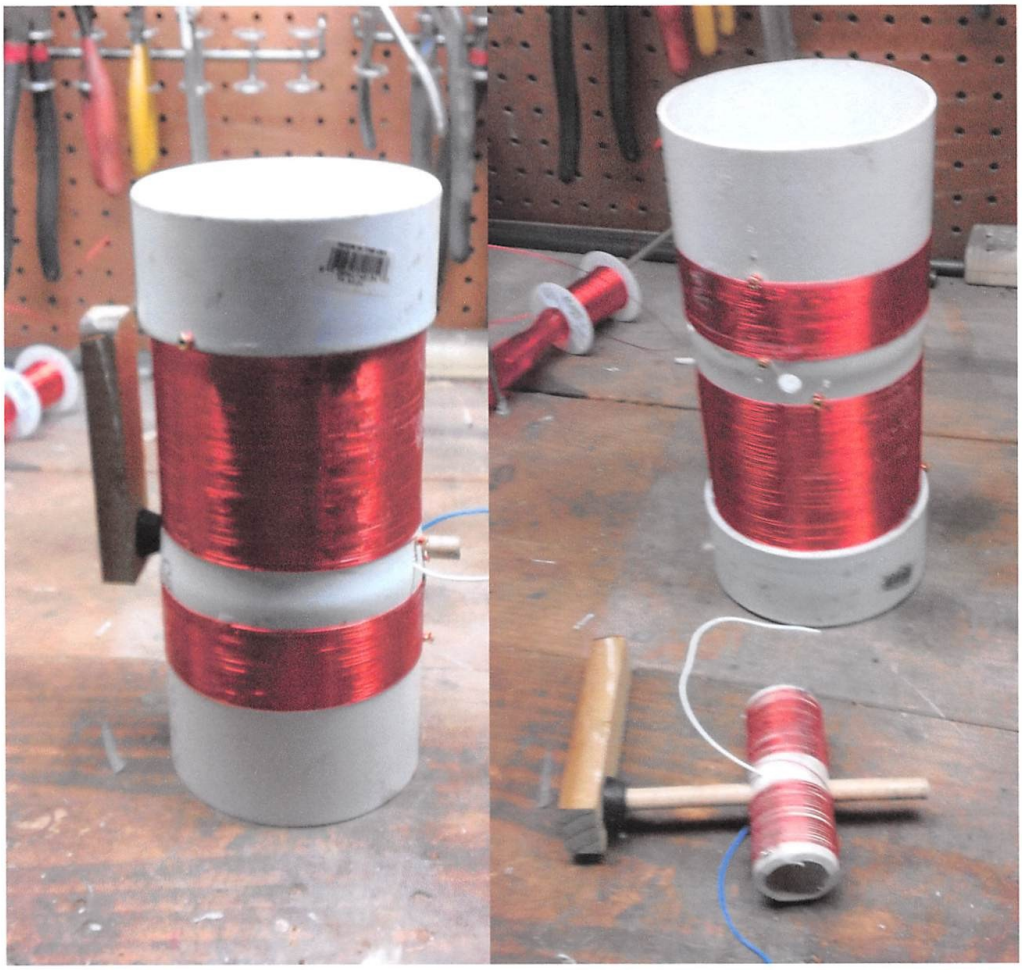
As you can see from the table above only the largest towers have a reasonable chance of achieving a 5watt EIRP limit. This is in part because the resonating inductor could melt if power exceeds a few hundred watts. However, most hams operate 1s unit below the legal limit on many ham bands. A wire vertical antenna with top had driven with 200+ watts will achieve more than 1 watt EIRP.

I created an Excel spreadsheet calculator that estimates the antenna impedance, efficiency and inductance necessary to derive the above table information.

The tuner.

It seems the best way to tune your antenna is with a Variometer. This instrument is a variable inductor that works with an outer coil and an inter coil. As the inter coil is rotated it either adds or subtracts from the outer coil. Here is one of the prototypes that I had made. There are a number of articles on how to build variometers. https://wg2xka.wordpress.com/the-variometer/ is one of those.

Here is one of the prototypes.

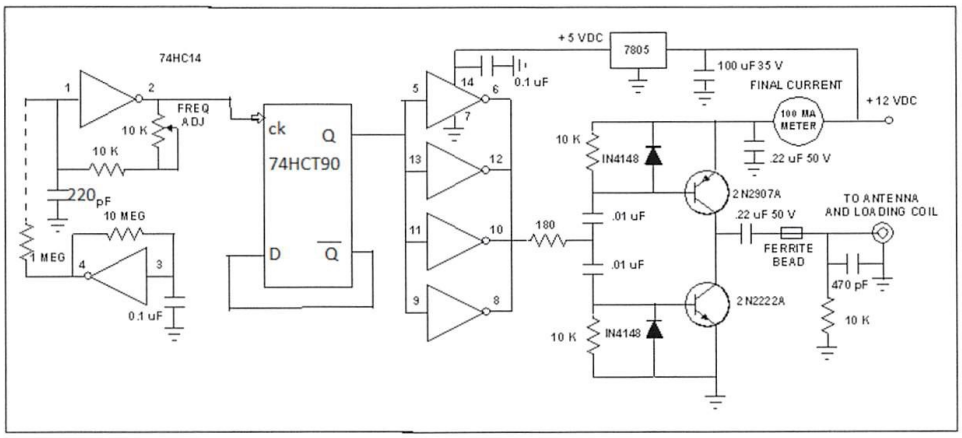


Before you start building you will need to estimate the inductance necessary. There are many variables, wire / pipe size, length, top hat length. I created an Excel spread sheet that calculates this, but if you build a variometer with excess turns with taps on both top and bottom you can just select what is necessary to tune.

My final design was an old 1 gallon paint bucket. I used 16 gauge wire. There were 40 turns on the top with a tap every 5 turns. There were 35 turns on the bottom, with a tap at 15. The inter coil was 1.5 inch PVC pipe with 20 turns on each end. This made a total of 40 turns with a wood dowel through the center. The wood dowel rotates.

Tuning the antenna.

There are modifications to the MFJ 25x analyzer to enable it to tune below the 160 meter ham band. I built my own wave meter similar to the one found at http://www.lowfer.us/k0lr/test-tx/test-tx.htm I added a divide by 2 (74hct90) to the original circuit as I had found that the waveform without the divide by 2 was not symmetrical and when used at the base of the antenna the oscillator was unstable at resonance. A side benefit of the wave meter was that the meter deflection value could be compared to a 100 ohm potentiometer at the same meter deflection value. Measuring the pot with an ohm meter will give you the feed impedance of the antenna. Most of this impedance is ground loss but should be at or below 20 ohms.



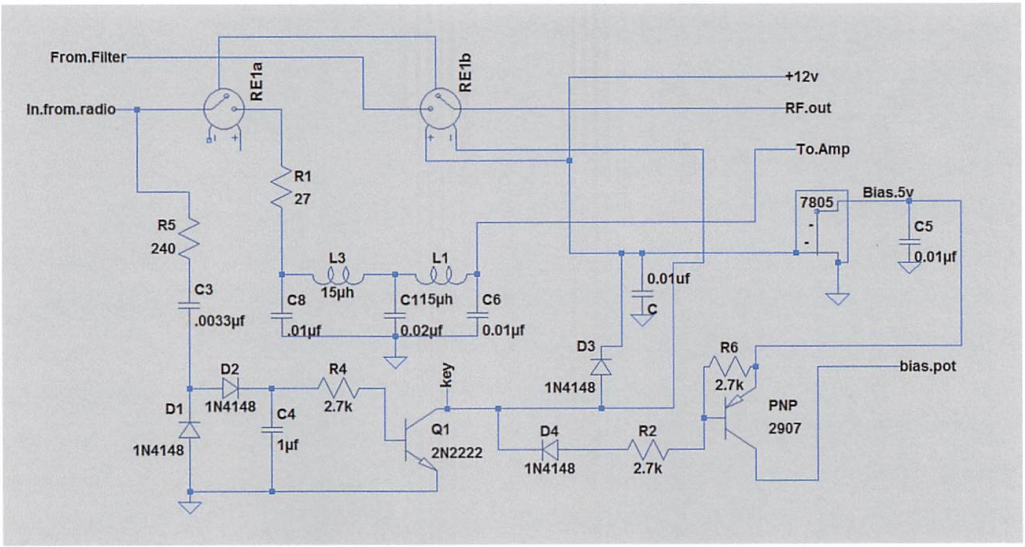
Impedance matching

The ground loss of 20 ohms and the antenna radiation resistance of approximately an ohm means that the antenna has about 21 ohms feed impedance. To match that to a 50 ohm coax I needed a 5.7:1 impedance step down transformer. I found a transformer design that could be selected for 1.14, 2.25,4, 5.75 or 9:1 ratio this will provide 47,45,25,21 or 9 ohms output. I did confirm that I had the best 50 ohm match when the 21 ohm tap was used. Place the transformed at the base of the antenna feeding the matching inductor.

http://www.ad5x.com/images/Articles/MultitapRevA.pdf Remember that the radio connects to the Hi Z and the antenna connects to the low Z ½ tap I used type 61 material as I think it was a better option at 475Khz. Here is a link on how to build.

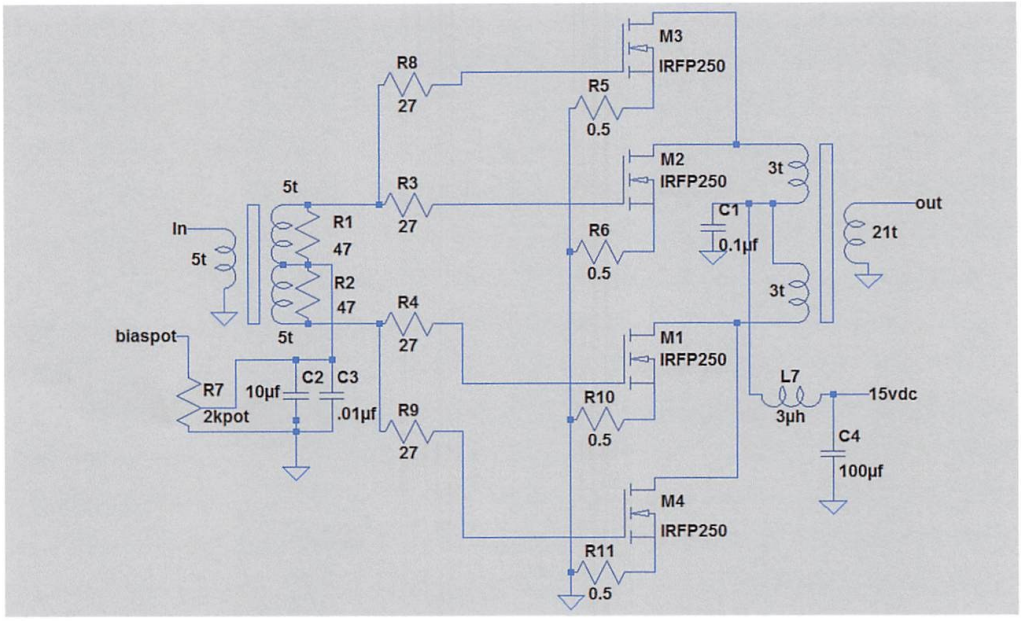
Power detector, pre filter relay

The below circuit was developed to enable my IC7100 to be the exciter for this project. The IC7100 was never designed to transmit at 475kHz, and when the RF output is increased above 20% only the second and third harmonic increase with 475Khz maxing out at 25 watts. The spectral output is distorted on the negative ½ of the sign wave. Because the RF from the IC7100 is distorted I developed a filter that has a reasonable VSWR at the 2nd and above harmonics. The original filter had a 2:1 VSWR as there was considerable energy at 950kHz and 1450Khz which caused the output to fold back due to VSWR. The rest of the circuitry switches to transmit automatically. The power detector is a voltage doubler that drives a 2n2222 transistor. The transistor energizes the relay and drives a PN2907 the provides 5v bias to the PA board.



The amplifier

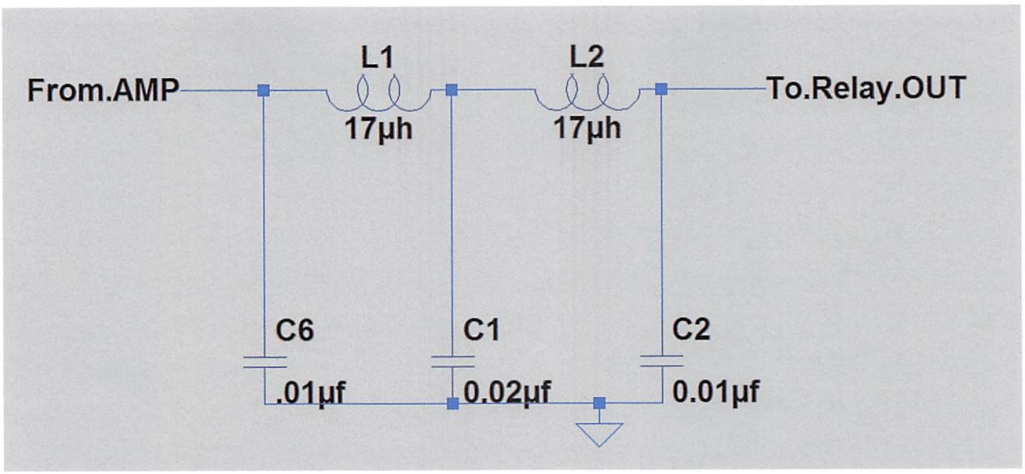
The amplifier is made from old recycled PC power supplies. The ones that I got were 400 watt rated. The input transformer core was one of the RF choke's, the output transformer core was from the main transformer. The devices were IRFP250b. The bias voltage is about 3.3VDC



The design was adapted from http://www.w7iuv.com/630_amp/630_amp.pdf. I chose different devices and run at a much lower DC voltage. I used a Pentium fan cooled heat sync with thermal insulators. The devices run about 35F hotter than ambient at the end of the 30 second JT65 transmit cycle. So in the summer in my shack I would expect them to be 140F, well below the IRFP250B maximum junction temperatures. I set the power level to 15% on the ICOM 7100 to get 180 watts out. Though the amplifier is capable of more output power (225watts) it is limited by the 30 second transmit cycle of JT65 and heat buildup

Output filter

The below filter was made to ensure that the harmonic would be suppressed. I used ¾ inch PVC pipe with a wood end glued into the bottom for mounting. I used 35 turns of 24guage insulated wire. The top 3 turns are overlapping. This filter reduces the second harmonic 37dB. This might not be enough but when they release the regulations I will check. The antenna is also narrow band and will provide additional rejection



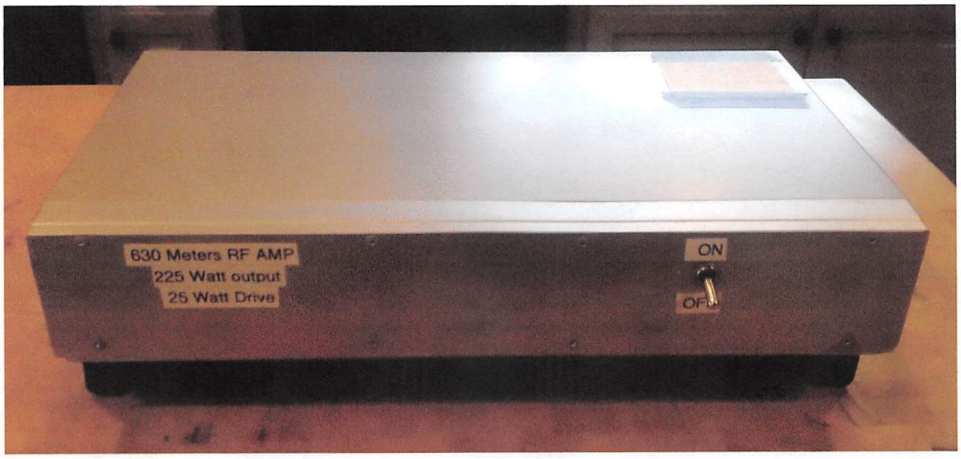
Other stuff

The power supply is a 12/15volt DC switch mode supply rated at 20 amps. The fan from the rf devices forces air flow under the supply for cooling.

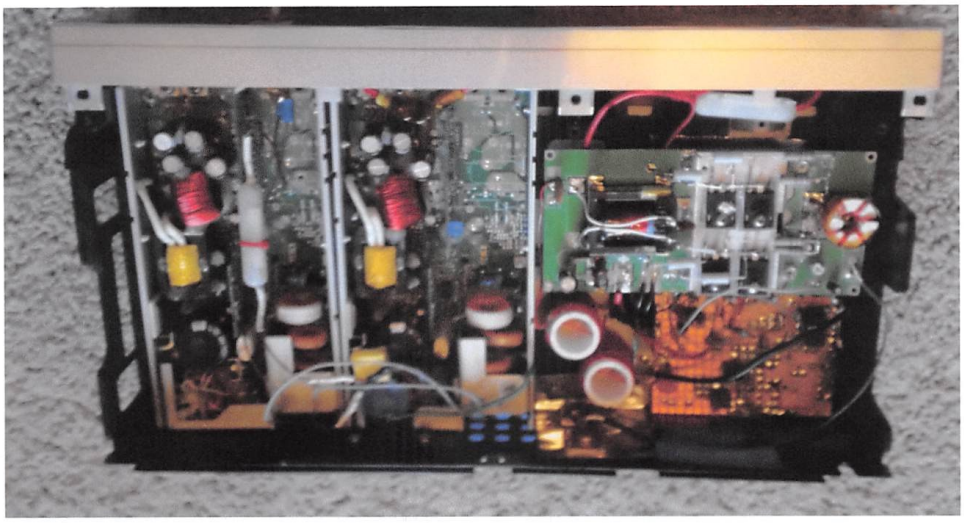
With 15 watts drive the output is 180W PEP.

Chassis and pictures of finished product

The chassis is an old VCR with all the internals removed. An aluminum plate was installed to cover all the holes and slots.



Internal picture showing layout



Donate to PARC by Shopping at Amazon

As publicized earlier this year, PARC is now a not-for-profit charity, and funds donated to PARC are deductible for income tax purpose if you itemize.

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.

Accessing EchoLink With Your Radio

By
Bernie Lafreniere, N6FN

In the last several issues of the SCOPE we explored how the EchoLink system allows you to make contacts using simplex links, repeaters and computers as gateways to the EchoLink VoIP network. This month we explore using DTMF equipped transceivers for making contacts over the EchoLink network. *This is the method to use when making EchoLink contacts from our 447.000 repeater.*

It is important to realize that you do not need to install software on your computer or have your callsign validated to be able to use EchoLink from DTMF equipped transceivers. However, you do need to have at least a basic understanding of how EchoLink contacts are made over the EchoLink network. Like any other aspect of ham radio there are conventions and procedures that are to be used that ensure a pleasant operating experience for everyone.

DTMF Keypad Commands

Providing you are within range of either an EchoLink equipped simplex link or repeater, you can use your DTMF equipped VHF/UHF transceiver to connect to: individual users, repeaters and conference servers. Using your radio's DTMF keypad to enter commands, you can check the status, bring-up and close connections to distant EchoLink nodes. (The differences between types of EchoLink nodes were covered in an earlier SCOPE article.)

Sysops that control RF simplex and repeater Links can either accept EchoLink's default DTMF commands, or create their own DTMF commands. Most nodes, including our 447 repeater, use the default commands shown below.

Commonly Used DTMF Command Codes

DTMF Code	Command	Description
*	Play ID	Plays a brief identification message
#	Disconnect	Terminates current connection
06+num	Query by Node Number	Looks up a station by Node Number and reports back its call sign and status.
08	Status	Determines if the node is already connected. Reports call signs of connected stations.
09	Reconnect	Reconnects to the station that was most recently disconnected.
Number	Connect by Node Number	Connects to an Internet station by specifying the node number, either 4,5 or 6 digits.
9999	Test Server	Connects to the Echo Test Server

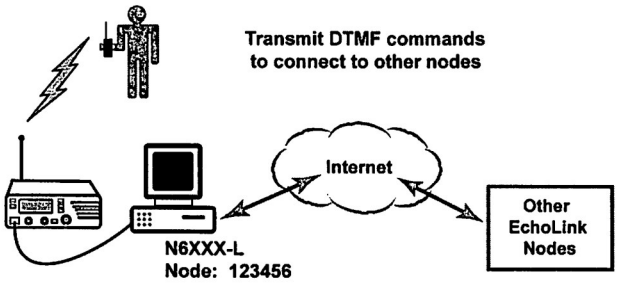
Note: For terminating a connection, some Sysops have selected to use **73** instead of EchoLink's default **#** symbol.

Initiating a QSO with a Radio

To initiate a QSO via radio, you first need to locate an RF simplex or repeater link to use as a gateway for accessing the EchoLink network. Besides the EchoLink node on our PARC 447.000 repeater, links for other areas you might be interested in can be found using the Internet resource listed below.

- The searchable by lat / lon, grid square, city, state or country *EchoLink Node Status* directory located at **http://www.echolink.org/links.jsp** Results sorted by distance.

Once the RF link's frequency, offset (if any) and access tone have been determined, for future convenience they should be programmed into your transceiver's memory as usual. This frequency will be used as your gateway for gaining access to the EchoLink network.



Simplex Link Gateway Operation

Secondly you will need the callsigns and node numbers for any individual users, repeaters or conference servers that you wish to connect to. These can be looked up using the web page mentioned above, or by searching the station list in the EchoLink software installed on your computer or smart phone. When using a DTMF keypad, it's simpler to use the station's node number rather than its call sign. Since you will presumably be using your transceiver when you are without Internet access, information for stations to be contacted should be determined and recorded in advance.

If you don't remember how to activate DTMF tones on your transceiver, you may need to consult your radio's user manual or its Nifty Guide. Unless your transceiver's DTMF capability has been turned off, or set to autodial from DTMF memories, the typical procedure for sending DTMF tones is to hold PTT down while pressing the desired DTMF keys.

Once you have your radio setup and know the node number of a station you wish to call, the following example outlines the steps to be followed to initiate a contact. If this is your first EchoLink experience, you may want to first connect to EchoLink's test server. It is accessed in the same manner as any other node and provides a convenient method for testing EchoLink and for hearing how your own voice will sound over the network.

Example – Establishing EchoLink Connections to Other Stations

While this example establishes a connection to the Test Server, the procedure will work for any station you wish to contact. In step 4, use the node number of the station you wish to contact, instead of 9999 for the Test Server.

1. First listen to make sure the local RF simplex link or repeater frequency you intend to use as your gateway is not already in use.
2. To verify that EchoLink is running on the link you are using as a gateway, use your DTMF keypad and send the **08** command. If EchoLink is up and running, the response should be "**Not Connected**" or "**Connected to XXXXX**" where XXXXX is the call sign of any EchoLink station that may already be connected.
3. If a station is connected, announce your presence and see if you get a response. If not connected, announce your intention to access EchoLink, saying something like: "N6XXX accessing EchoLink". Wait a moment to see if any stations respond before proceeding with entering DTMF commands.
4. To establish a connection, enter the Test Server's node number: **9 9 9 9**. After a short delay, you should hear EchoLink responding with "**Connecting to Conference E C H O T E S T**", followed a little later by "**Connected**" if you were successful. If the specified node is not currently on-line, you will hear "**Not Found.**" Wait until you hear the **Connected** response before transmitting your call.

   If you hear a **Disconnected** right after trying to connect, the node may have a firewall or Internet problem. You will have to try a different node.
5. After a few seconds you should hear the Test Server's greeting: "**Welcome to the EchoLink Test Server ...**" For other nodes, you may or may not get a greeting.
6. In the case of the Test Server, if you make a voice transmission, after a short delay it should be echoed back to you. For other contacts, first listen to make sure that there is not a QSO in progress. When clear, you can make your call on the connected node. Remember to pause an extra amount of time between transmissions and to ID as you usually would when working through a repeater.
7. To terminate the connection, press **#**. You should then hear EchoLink respond with "**Conference E C H O T E S T Disconnected**". (Some nodes may use **73** instead of **#**.)

Important: It's your responsibility to terminate any connections that you might establish. When operating mobile and approaching the fringe area of the node you are using to access EchoLink, make sure you terminate the connection before you are out of range. (As a side note, if necessary anyone can terminate a connection by transmitting the DTMF **#** code, or if applicable **73**.)

In addition to EchoLink articles that appeared in prior issues of the SCOPE, further information can be obtained by visiting **http://www.echolink.org/** Also, I have authored a book for EchoLink titled *Nifty E-Z Guide to EchoLink Operation*, which you might find helpful and is available from Amazon as well as from most ham radio retail outlets and the **www.niftyaccessories.com** web page.

Ham Jam

I wanted to let my fellow club members know of the upcoming HRO Ham Jam. The ARTTT team will be there showing off their tower trailer along with a member of the AREDN Group to demonstrate the uses of the Amateur Radio Emergency Data Network and how Amateur Radio is coming into the 21st century. This is an exciting event and all are encouraged to attend. Last year had a great turn out of clubs and Amateur Radio Operators. I met new friends and old friends and one member even won a Gift Certificate!

This event is like a mini ham-fest! Come on out and enjoy the day with your fellow radio operators.

It's time for our annual Ham Jam when we welcome manufacturers, ham clubs, ARRL and more for our day-long event. This year we are happy to welcome ABR, Alinco, Bioenno, Comet/Daiwa, Gordon West, Icom, Kenwood, Powerwerx & Yaesu.

There will be two prize drawings - one at noon and another at 3PM.

There will be a few forums and of course, ham radio test sessions!

Hope to see you there!

Ham Radio Outlet Anaheim
July 8th 10 AM – 5 PM

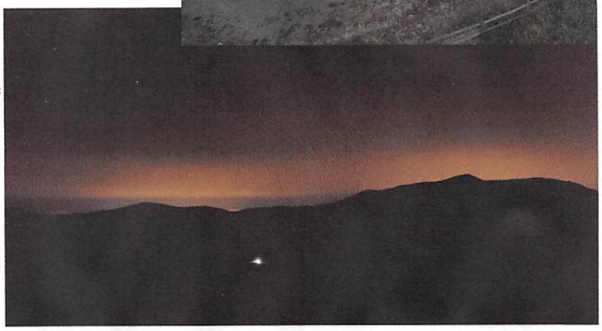
Ham Radio Outlet - Anaheim
933 N Euclid St, Anaheim, California 92801

Field Day 2017
Experience of Greg Gibbs KI6RXX

The weekend of June 23rd-25th was spent like most 4th full weekends in June have been for me in recent years, participating in ARRL Field Day. Field Day is always a reoccurring event on my calendar.

This year however PARC chose not to hold a field day of their own and left me in search of another location to attend. There where many great choices in the county this year including Fallbook, EARS, Six Shooters+ARES to name just a few, but this year I decided to take a different approach.

Field Day 2017 for myself was spent atop a High Mountain participating in a 1A station with other PARC club members and friends. There was at least 7 of us. Setup was easy, owing partially to a single station setup and partially to the fact the station traveled on a self contained setup. The setup was a work of ARTTT.



To the original spirit of Field Day this deployment was remote, located high within the Laguna Mountains off of Sunrise Highway. The only lights to be seen at night were that of the Stars, and the glow of the cities 50+ miles away. To those driving through the area we were the only bright light for miles, a shiny star on the ground so to speak.

Being remote is not without its own challenges however. The group had to pack in 100% of the supplies it would need for the weekend, and pack out 100% of the supplies it brought in (along with a little extra garbage cleanup from the area.). Temperatures were warm as were most other Field Day sites in the county, but a misting station provided cooling during the hottest hours of the day. In honor of Gina's traditional cooking, I attempted to grill a Tri-Tip. It was OK... but there where no potatoes. :-(

Radio Operations were much like any other field day, except for the constant muscle memory of wanting to identify as "W6NWG". I repeatedly caught myself saying "QRZ, Whiskey Six, correction Kilo Golf..." due to all the years I have operated at PARC Field Day's.

Overall though it was a great experience, and an enjoyable change from previous years, though my constant attempts to use the PARC's call sign make me hope that next year the PARC Board will choose to hold a Field Day for its members.

A special thanks is due to Terry Runyon, K3PXX for generously lending us his famous Bird Cage for our setup to protect us from the harsh winds and sun. I also wish to extend to him my support and wishes for a speedy recovery after another vehicle crashed into his on the freeway just days before Field Day.

I hope that other club members were able to have as much fun as we did this year on FD. Here's wishing for a fun and exciting Field Day 2018! If we start planning

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Editorial Policy

The Scope welcomes and encourages members to submit articles, photos, stories, equipment reviews and any other items of interest to ham radio.

The Palomar Amateur Radio Club reserves the right to edit all submissions for content and length.

Please submit documents in MS Word format and photos as JPEG or GIF. Flyers may be submitted in PDF.

All submissions need to be received by the 20th of the month.

Send submissions to:

scope@palomararc.org

The Back page is a place for ham radio humor. If you have a joke, cartoon or just a fun story about ham radio, please share it with me.