

# SCOPE August 2007

A newsletter by and for the Palomar Amateur Radio Club of San Diego, CA, USA.

Club Meeting "Radio Direction Finding" by K6VCR  
1 August 7:30pm at the Carlsbad Safety Center

Annual Picnic  
5 August 10am-6pm at San Dieguito County Park  
Picnic Area 4

Board Meeting  
8 August 7:00pm at W5NYV QTH



## President's Message

By Steve Early AD6VI

July has gone by quickly. We got a late start because Independence Day, July 4th, fell on the first Wednesday of the month, so in patriotic fashion, we rescheduled the PARC general membership meeting for the second Wednesday.

The July Program was on Handi-Hams, presented by Marcia De Runtz, KG6FIX. Marcia gave a good presentation on what Handi-Hams is and does. A local Handi-Hams net has been established on Sunday Evenings at 7:00pm on 147.130+107.2. In addition, Marcia is looking for help to re-establish the amateur radio station at the Vista Center for the Blind and to establish a new station at the San Diego Center for the Blind.

The August 1st program will be on radio direction finding in anticipation of the T-hunt at the PARC Picnic on Sunday, August 5th.

The picnic is a little early this year due to site availability and will be held on Sunday, August 5 from 10am to about 6pm in the San Dieguito County Park at picnic area 4 (same place as last year and 2005). Stop by, good times will be had by all.

In addition to the Sunday night Handi-Hams net, PARC is now hosting a SATERN (Salvation Army Team Emergency Radio Network) net on Thursday evenings, at 8:00pm on the 147.075 repeater. SATERN is a worthwhile program that supports disaster-affected communities in time of need. Looking down the road: The September program will be on PSK31 and will be presented by Ralph Smith, AE6SV. August through September - Repeater site refurbishment work parties. Watch the website for details.

I hope to see you on August first. Bring a friend!

### Picnic Notes:

We hope to operate the club's station in the Ten-Ten Summer QSO Party from the picnic site. We also plan a foxhunt (hidden transmitter hunt). Win a gift certificate prize in the annual drawing - number of tickets based on your participation in club activities this year. The club provides meat (probably hot dogs, hamburgers, chicken) and paper plates, cups, and utensils. Other courses are pot luck. Members whose last names begin with A through H, please bring salad or fruit. I through P, please bring beverages. Q through Z, desserts, chips, or cookies. Bring enough to feed yourself and about two other people. (Same as last year.) ☼

## Introducing SATERN

By Tom Carmody KJ6TDC

Last night, (July 18th), I attended your board meeting to ask permission to conduct a weekly Net for the Salvation Army Team Emergency Radio Network also known as SATERN.

Permission was granted and we will be running the Net on your 147.075 repeater on Thursdays at 8:00 PM. At 8:30 PM we then conduct the regular SATERN Net on 145.320 with a CTCSS tone of 107.2

I was also asked to submit an article about what SATERN does that will be printed in this month's SCOPE. The following information was obtained from the official SATERN web site which is [www.saturn.org](http://www.saturn.org).

Maj. McPherson, Art Evans, N9KQ and two Canadian hams, Harold Gibson, VE3NKU, and Ernie Reid, VE3BIX, started a SATERN net in June 1988. The purpose was to keep the lines of communication between the various Salvation Army Emergency Disaster Services (EDS) units open and to be able to provide efficient and rapid mutual aid in times of need.

That original 40 meter net has grown over the past 19 years into over 3500 members world-wide, dozens of VHF/UHF local and divisional nets, and 4 territorial nets. An international net, our flagship net, is on 14.265 MHz. The international SATERN net has become recognized by the emergency communications community in the same company with the HWN, the MMSN and the various MARS Nets, all of which provide communication in times of trouble.

The unique service that SATERN provides is that we "find lost people". We have become the premier Health and Welfare Net. Through our web site at [saturn.org](http://saturn.org), and a bank of telephones in the Elk Grove, IL EDS Center, incoming requests for information about loved ones in the

midst of various disasters are received and handled in a rapid and efficient manner.

For example, in the two weeks following landfall of hurricane Katrina in September 2005, SATERN received over 61,000 requests for information on loved ones and put 25,000 families back in touch with their friends and relatives who had been out of touch.

In addition to providing long distance H&W support to the public, SATERN members are found at many local emergencies and disasters as volunteers with The Salvation Army EDS responses. We provide tactical communications to keep the food and supplies coming where they are needed, and often we are also there, as trained food handlers and EDS volunteers, helping to serve those in need, providing food and refreshments to the emergency responders and the families involved in the emergency and dispensing clean-up kits and other supplies to those who have lost so much in a disaster.

SATERN continues to evolve through the inspiration and initiative of its members and has specific future goals.

### 1) Miniaturization

As Hams interested in emergency communications, we are constantly looking for ways to pack more communication capability into smaller packages, requiring smaller power packs.

### 2) Digital Modes

SATERN members are experimenting with the latest digital modes of communication (WinLink, D-Star, etc.) to improve the dependability and speed of the support communication that we provide.

### 3) Propagation

Some of our members are investigating various prediction software packages to help improve the reliability of our HF capabilities. Several members are working on NVIS antennas to determine their

*continued on page 6*

## July Meeting Goodie Givers

Mark KI6FVH, Wild Bill WB6BFG, Ellen N6UWW, Michelle W5NYV, Marvin KD6YJB, Paul KB5MU

## July Fold & Staple

Art KB6YHZ & Janet, Jo KB6NMK, Al W6GNI & Kathy

## July Membership Report

New Members Joining PARC: None! Zero, Zip! However 5 members reinstated their membership.

If you are reading this on the web site because you didn't get a SCOPE in the mail - how about joining, or rejoining PARC? The club needs the support of many hams to keep Palomar Mountain repeating back what goes up there!

Our membership is still dropping. Bring a friend, and let's sign them up. Maybe too much internet/cell phone competition? But, there are many aspects to ham radio, new ones every year. The digital modes are really neat! How many other hobbies can brag about having their own satellites up?

As a reminder, in accordance with the by-laws, the year for participation points is August 1 through July 31. So, the points for attending the August 1st, 2007 club meeting will be starting points for year 2008. The fold and staple crew will get their points added in 2007, since this newsletter was prepared and mailed July 25th.

Al  
W6GNI



My membership lapsed?!

## Club Classified Advertisements

Personal equipment ads are free to members and could be bumped after 3 months. Make up your ad like the ones on this page and send to SCOPE@PALOMARARC.ORG.

Commercial ads in big boxes: \$2/col. inch/month. We will squash your ad copy to the number of inches bought.

**(7.22) Wanted: Transport for amateur UHF antennas to San Francisco Bay area. Fred Brown, W6HPH. Tel. 760-741-1328. w6hph@yahoo.es**

**(6.30) Cushcraft R-8 Vertical Antenna, New In Box, \$375.00 (New \$550.00). IC-756PRO II Transceiver with IC-PS125 Power Supply, Never Used, Purchased Feb. 2005 from HRO, Original Cost \$2399, Will Sell for \$1975.00. Selling because of CC&R Issues. Call John N6LMY rohring@sbcglobal.net or (760) 602-5041**

**(4.1) A-50-5S Cushcraft 5-el 6m beam - condx: bent boom and bent 2 elements, fixable, on the ground, \$25.**

**Miscellaneous aluminum tubing from Sommer beam: come and get it. Peter KQ6AA potifar@pacbell.net or 760-917-2264**



Try [www.palomararc.org](http://www.palomararc.org)

## Time to Upgrade!

### *How a Typical Vintage Novice Station Moved into General Class Usage*

By Ron Pollack

In the last couple of articles, we discussed some of the early Novice transmitters, receivers, and accessories that were available in the early and mid 1950s. Novices were restricted to crystal control, 75 watts input, and CW on several of the HF bands. Privileges were also available on AM phone and CW in a part of the 2 meter band (No FM repeaters in those days!) Initially, Novices were restricted to portions of 80 meters and 11 meters (it was a ham band then!). Very quickly, the frequency allocations were changed to 80, 40, and 15 meters. 15 had just been opened for amateur use.

Novice licenses were issued for one year only, and were not renewable. If a novice didn't upgrade to Technician or General during that year, he was off the air! It was a "one time only in a lifetime" license. Upgrading to General required a 13 WPM code test and a more complex written exam.

Of course, many novices were successful in upgrading their privileges. As soon as the coveted General ticket came (which, at that time, afforded all amateur privileges), most hams couldn't wait to get on phone, use a VFO, and usually run more power. Along with these changes usually came a better receiver for the station.

Of the three restrictions lifted upon receipt of the General Class, perhaps crystal control was the most inconvenient. In the novice bands, everyone was "rockbound," and the custom was to call "CQ" and tune the band for replies. (Of course, with some of the primitive receivers like the R55 and AR2 we showed earlier, the selectivity was so poor that you were listening to most of the band anyway!) But by the mid 50s, most general class ops were using VFOs, so most replies were on the same frequency.

Many novices also wanted to try "phone" on the HF bands, too. SSB was in its infancy, and AM was the predominant voice mode.

Many novices had planned ahead, and obtained novice transmitters with phone capability and/or built in VFO so they would be ready to use their general class privileges.

Pictured is a typical mid to late 1950s station as might have been used by someone who had recently upgraded.

One very popular transmitter, introduced in 1956 by Heathkit was the DX 35 shown in the photo on page 5. Its 65 watt CW input was near maximum for a novice, but there was a "controlled carrier" (screen) modulator built in for AM. In place of the sweep tube or 807 final in some of the low power units, the DX 35 employed a 6146 final in a very conservative circuit. The pi network output matched a wide variety of loads, making a separate antenna tuner unnecessary in most cases. The kit price was \$57. While there was no VFO included, Heath offered the VF1, introduced in 1952 (designed for the AT1), for \$19. The VFO was designed to be powered by the transmitter, and an auxiliary power socket was provided on the DX35 to match. In addition, the transmitter had sockets for 3 crystals as well as a VFO input. These were switch selectable from the back panel. In contrast, many of the "CW only" novice transmitters had to be modified to use a VFO. If crystal control was desired, usually the mod had to be removed, or a switch added. Many times there was no provision for power connections. This was true of the DX 20. Perhaps Heath didn't want to include many features in the DX 20 in order to make the DX 35 more attractive.

As we discussed, there weren't many decent receivers available in kit form in the 1950s, so most hams used factory manufactured ones. The one in this photo  
*continued on page 5*



*continued from page 4*  
 is a National NC109, introduced around 1957. It was an order of magnitude better than the 5 tube jobs that many novices started with in terms of stability, selectivity, and sensitivity. It had 11 tubes, a calibrated bandspread scale for the ham bands, and a crystal filter with 6 positions from 3.8 Hz down to 50 Hz for sharp selectivity. There is a stage of RF amplification as well as 2 stages of IF. Recognizing the oncoming popularity of SSB, National included a separate product detector for CW and SSB use. The receiver was priced at \$200, and was very popular. The setup pictured above is fully functional, and is used frequently, especially during the "Classic Exchange" contests, where multipliers are based on the age of the equipment, and the same station may be worked multiple times using different equipment.

The receiver is quite common, but the DX 35 is less so, having been built for only 2 years, 1956 and 57. Far more common is the DX40, which replaced the '35 in 1958

and was manufactured until 1960, when it was replaced by the more stylish DX60. There were several minor differences, but the greater popularity of the DX40 was probably due to the much longer production run. The VF 1 VFO pictured is very common, having been introduced in 1952 and produced until 1961.

The only thing missing that the newly minted General wanted was more power! In the 50s, this meant either an amplifier or a big leap in cost for a higher power transmitter, so many were satisfied with the 75 to 90 watt limit available in lower priced transmitters.

Thanks for the nice comments I've received. I hope to continue writing these columns until I run out of equipment! That seems unlikely, as old radios have a way of following me home! Recently I found a Hammarlund HQ129X in my car trunk, and shortly thereafter there was a Collins 75A4 in there. Wonder how they got in there? ✨

*Introducing SATERN*  
*continued from page 2*

utility in regional emergency communications.

3) Training

Our Members are encouraged to become associated with their divisional HQ EDS groups and avail themselves of the excellent opportunities provided by TSA for learning new skills that will increase the usefulness of the volunteers at disaster sites. There are also training opportunities for new Net Control Stations for our International Net and the Regional Nets. We are always looking for experienced hams who may be interested in learning to become regular NCSs.

4) Establishing Communication Hubs

As our members become DHQ EDS volunteers, it is natural that they want to set up a ham station in DHQ and in the canteen on which they may be serving. This is happening in many DHQs as more and more SATERN members sign up to help on site in disasters.

If you are interested in learning more about SATERN, visit our web site at [satern.org](http://satern.org). Explore the various windows, see pictures of some of our members and some of our recent activities, learn more of our history and emergency communications basics and, if you are not yet a member, complete the on-line application form to become a SATERN Member. Of course, you are always welcome on any of our nets. Their times and frequencies are all listed on the web site.

For further information contact:  
US and International:  
Maj. Pat McPherson  
WW9E  
[patrick.mcpherson@usc.salvationarmy.org](mailto:patrick.mcpherson@usc.salvationarmy.org)

You can also contact me and I will try to help you any way I can. I am the net control for SATERN in San Diego County. Tom Carmody, KJ6TDC,  
[tomcarmody@cox.net](mailto:tomcarmody@cox.net), 760-789-4993 ✪

**July PARC Board Meeting Minutes**  
The Abridged Version

**Discussion Items:**

1. Field Day Close Out– Field Day is over and bills are coming in. Score needs to be submitted by July 21. We need to get next years site lined up this fall. The DMV site is still a very strong candidate.

2. Repeater site refurbishment- Dan has already tightened some bolts. Difficulty in getting galvanized bolts with same specifications as existing bolts. We also need unistrut supports for coax.

3. Mailing list for board members – it was suggested the list of members on the Board mailing list be reviewed.

4. Picnic – Picnic will be held on August 5<sup>th</sup> at San Dieguito county park, site 4. This coincides with the Ten-Ten contest for which we want to man a station at the picnic. Hours are from 10 AM to 6 PM. Cooks will be KG6RCW, W6GDK and KI6DER.

**General Meeting for August –** Direction finding by K6VCR

**Repeater – Tech** The building seems to be running a bit warm, so there will be a work party on July 29 to do preliminary work on tower and to paint the roof of the building white.

**Site report –** Brush looks pretty good for fire hazard mitigation. A few branches into guy wires need to be trimmed.

**New Business**

1. Autopatch – some members have been asking about control codes for auto patch. The system has been down for some time, and we need to study how to update the system.

2. SATERN - Satern would like to hold a net on the 147.075 repeater on Thursday at 7:30 PM. KK6LJ from MARA was asked to attend the meeting so we could coordinate the use of that repeater for emergency use and nets. ✪

## Contest Corral

Contest	Time and Date
TARA Grid Dip Shindig	0000Z-2400Z, Aug 4
10-10 Int. Summer Contest, SSB	0001Z, Aug 4 to 2359Z, Aug 5
National Lighthouse Weekend QSO Contest	0001Z, Aug 4 to 2359Z, Aug 5
European HF Championship	1200Z-2359Z, Aug 4
ARRL UHF Contest	1800Z, Aug 4 to 1800Z, Aug 5
North American QSO Party, CW	1800Z, Aug 4 to 0600Z, Aug 5
RSGB RoPoCo 2	0700Z-0900Z, Aug 5
SARL HF Phone Contest	1300Z-1630Z, Aug 5
ARS Spartan Sprint	0100Z-0300Z, Aug 7
WAE DX Contest, CW	0000Z, Aug 11 to 2359Z, Aug 12
Maryland-DC QSO Party	1600Z, Aug 11 to 0400Z, Aug 12 and 1600Z-2359Z, Aug 12
NAQCC Straight Key/Bug Sprint	0030Z-0230Z, Aug 15
SARTG WW RTTY Contest	0000Z-0800Z, Aug 18 and 1600Z-2400Z, Aug 18 and 0800Z-1600Z, Aug 19
ARRL 10 GHz and Up Contest	0600 local, Aug 18 to 2400 local, Aug 19
Keyman's Club of Japan Contest	1200Z, Aug 18 to 1200Z, Aug 19
Russian District Award Contest	1400Z, Aug 18 to 0800Z, Aug 19
ARCI Silent Key Memorial Sprint	1500Z-1800Z, Aug 18
North American QSO Party, SSB	1800Z, Aug 18 to 0600Z, Aug 19
New Jersey QSO Party	2000Z, Aug 18 to 0700Z, Aug 19 and 1300Z, Aug 19 to 0200Z, Aug 20
Run for the Bacon QRP Contest	0100Z-0300Z, Aug 20
ALARA Contest	0600Z, Aug 25 to 1159Z, Aug 26
Hawaii QSO Party	0700Z, Aug 25 to 2200Z, Aug 26
SCC RTTY Championship	1200Z, Aug 25 to 1159Z, Aug 26
YO DX HF Contest	1200Z, Aug 25 to 1200Z, Aug 26
Ohio QSO Party	1600Z, Aug 25 to 0400Z, Aug 26
SKCC Weekend Sprint	0000Z-2400Z, Aug 26
SARL HF CW Contest	1400Z-1600Z, Aug 26

## Contest Comments

Send your comments and scores to [scope@palomararc.org](mailto:scope@palomararc.org)

Something for everyone this month from straight HF CW and SSB contests to 10 GHz and up. Like playing with 5 watts? There is some of that also. Complete rules may be found in QST CQ, NCJ, and Worldradio magazines and on the Web. CU in the contest! 73, Harry, W6Y00

### IARU HF World Championship Report

Call: NX6T ( at N6KI ) Ops: KB5MU, W5NYV, N6KI. Class: MS Mixed HP. QTH: CA.

Operating Time (hrs): 9

515 Qs Total

Total Score = 143,689

Invited a few hams over for practice and fun. Not much on 15 after starting at almost 2 PM. Paul, KB5MU and Michelle, W5NYV worked afternoon and early eve. N6KI worked late night and early Sunday AM and had some nice grayline EU contacts on 20 and 40. Dennis N6KI

## Block KOJPK with Tone Decode

By Paul Williamson KB5MU

It's summertime, and radio propagation up and down the coast is hot. That means that in some parts of our area, you can hear a strong signal from the KOJPK repeater on Rio Hondo Peak (see map on page 9), which shares the 146.730 MHz frequency with our own W6NWX repeater on Palomar Mountain. The signal may be too strong to eliminate by adjusting the squelch control on your transceiver. As long as W6NWX's signal is substantially stronger, this doesn't cause any problem when there's activity on our repeater. Local activity will cover up the unusual signal from KOJPK. But when our repeater falls silent, you'll be stuck listening to conversations on the other repeater. It can be fun to hear signals from far away, but often you'd rather hear only your friends on the local repeater.

There's an easy way to do that. If your radio is fairly new, it probably contains a tone decoder. If you turn on the tone decoder, your radio will remain silent unless it detects a particular low-pitched tone superimposed on the received signal. This is called CTCSS, for Continuous Tone-Coded Squelch System, or sometimes PL after the Motorola trade name Private Line. It's the same technique most repeaters use to limit access to stations intending to use that repeater. When used that way, you set your transmitter to emit the tone and the repeater's receiver detects it. That's usually designated "Tone" on the transceiver's display. For our purposes, though, we want the opposite: the repeater emits the tone on its transmitted signal, and your rig detects it. This setting is often designated "CTCSS" or just "CT" on the transceiver's display.

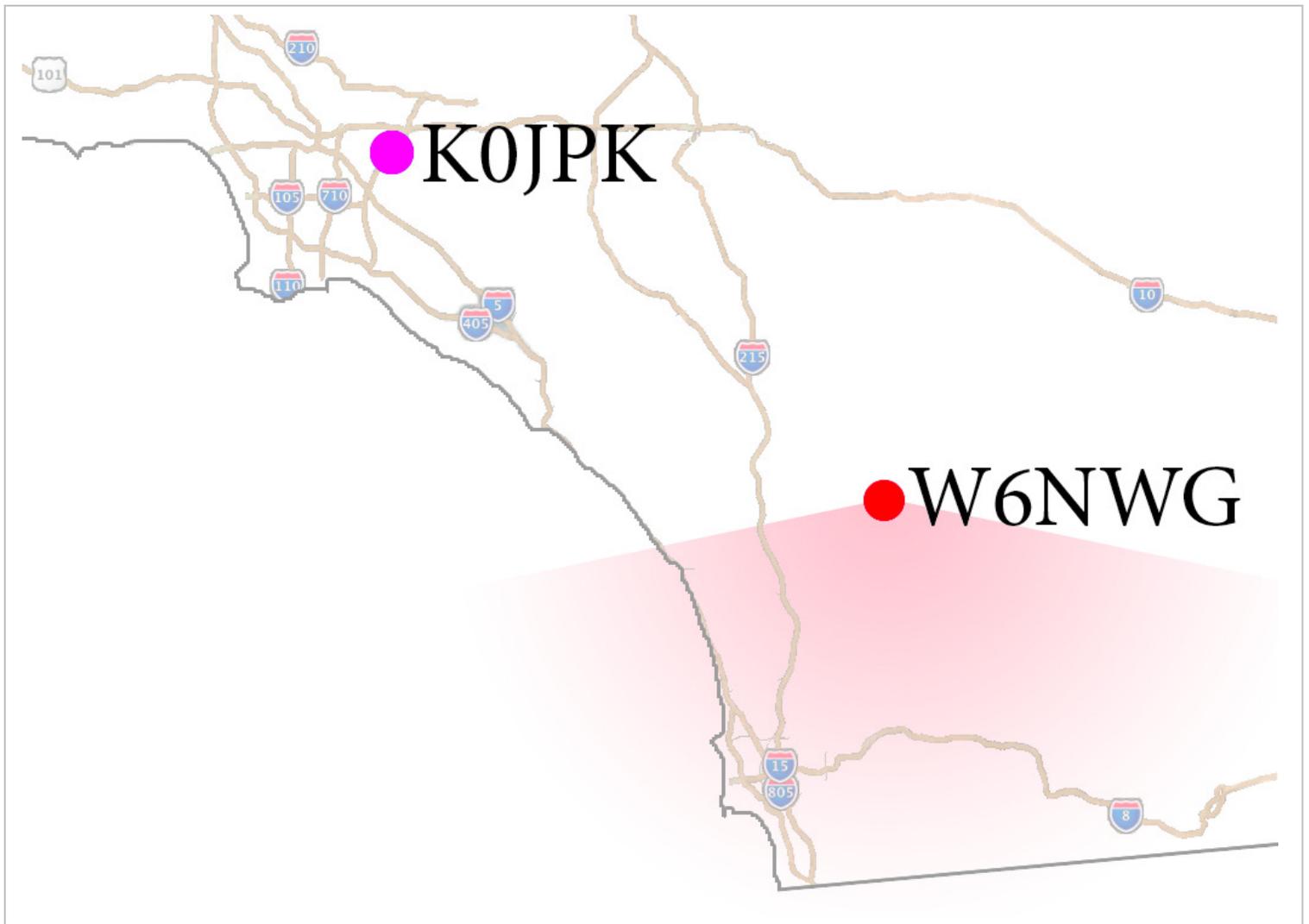
Besides turning the feature on, you must also tell the transceiver which of the common tones to detect. This may be a separate setting, or (commonly) a shared setting with the radio's tone encoder. Set it to 107.2 Hz. Some older radios will require you to look this up in a table to

find a code number, but newer radios will just display the value 107.2 directly, making this setting very easy - once you've figured out how to get at the feature in the first place. You may need to consult your radio's manual (or a third-party cheat sheet) to find the feature hiding among the button functions or in the menus.

On some radios you can't enable the tone decoder without also enabling the tone encoder, and that's fine. Even though you don't usually need to transmit a tone to access the 146.730 MHz W6NWX repeater, it does no harm to transmit it anyway - and you'll be ready when the control operators have to enable the repeater's tone decoder to eliminate interference, as they have recently done.

This trick doesn't work on every repeater. It requires the repeater to transmit (or pass through) the tone and most repeaters don't do that. The W6NWX repeaters do, specifically to allow this trick to work. If you tune off to another repeater, you'll probably need to disable the tone decoder in order to hear anything. It can be very confusing if you forget! Most radios retain the tone encode and decode settings with each memory location, so make use of the memories for repeater access and you shouldn't need to worry much about the tone settings.

In some locations, on some occasions, the KOJPK signal can be almost as strong as the signal from W6NWX, or even stronger. At those times, you won't be able to hear the Palomar repeater clearly, and the tone decoder trick won't help. Your only recourse in that case is to move to a better location or use a directional antenna to favor the signal from Palomar Mountain over the one from up north. A small yagi antenna may be a practical solution if you live in an area where KOJPK is especially strong. In most parts of the county, though, all you need is the tone decoder built into your radio. ☼



Map edited by KB5MU

## Radio Direction Finding Fundamentals

by Michelle Thompson W5NYV

In anticipation of the August club meeting program, here's a short introduction to RDF (radio direction finding). RDF dates back to World War I. During the cold war, several very large circular antenna arrays were constructed in order to locate high frequency radio signals. Current research involves using software-defined radios and multi-channel multi-array antennas to accomplish the direction finding functions.

RDF is often employed to track down transmitters that are causing harmful interference. PARC members have used RDF techniques to identify "jammers" in the past.

Transmitter hunting is also done for fun and sport. There are several groups in southern California that have regular transmitter hunts and all levels of expertise are welcome. For more skilled and competitive RDF enthusiasts, the USA/IARU Region 2 Championships of Amateur Radio Direction Finding is scheduled for September 14-16 in the forests near Lake Tahoe. The next World Championships is in 2008 as the competition is held only in even-numbered years.

## Repeaters Sponsored by PARC

Frequency	Tx	Tone	Call Sign	Remarks
52.680	-	107.2	W6NWG	
146.730	-	107.2	W6NWG	Autopatch; see note 1,
147.075	+	107.2	W6NWG	Autopatch; see note 2
147.130	+	107.2	W6NWG	Autopatch; see note
447.000	-	107.2	W6NWG	Autopatch; see note 2
224.380	-	107.2	KK6KD	Americas Unidos
224.900	-	107.2	WD6HFR	Convair/220 ARC
224.940	-	107.2	KK6KD	Sharp Hospital Coverage
446.140	-	123.0	WB6FMT	Vista
146.175	+	107.2	N6FQ	Fallbrook ARC; autopatch; linked to 445.600
445.600	-	107.2	N6FQ	Fallbrook ARC; autopatch; linked to 146.175
145.050	(s)	None	W6NWG-1	Packet node; linked to Metro 9600 net
146.700	-	None	W6NWG-4	Packet duplex repeater; Duplex; PALBBS use OK

PARC also conducts the following ATV (amateur fast-scan television) operations:  
 ATV in: 915 MHz WBFM, 2441.5 MHz WBFM  
 Intercom: 146.415 MHz NBFM simplex (tone 79.7)  
 ATV out: 1241.25 MHz AM

## Regular Nets Sponsored by PARC

Day	Time	Frequency	Name	Manager
T/Th/Sa	2000	146.730	NTS Traffic Net	Marvin KD6YJB KD6YJB@arrl.net
Sunday	0830	146.730	ARES Net	Jo Ashley KB6NMK@arrl.net
Sunday	1900	147.130	Handi-Hams	Marcia De Runtz KG6FIX
Sunday	2045	147.075	MARA	Glenn Jones KG6JDF@amsat.org
Monday	1915	146.730	RACES Sub-net	
Monday	2100	146.730	Microwave Net	Kerry B.
Tuesday	1900	147.130	Red Cross Net	Ted tthompson@sdarc.org
Tuesday	2100	146.730	Off-Road Net	Dick Wilimek KA7AYTrwilimek@cox.net
Thursday	2000	147.075	SATERN	tomcarmody@cox.net
Thursday	2100	146.730	Ham Help Net	
Friday	2100	146.730	Hiker's Net	Ed KF6DXX@juno.com
Nightly	>2200	147.130	Facetious Group	

## Contact Information

Board of Directors Position	Call Sign	Contact Information
President - Steve Early	AD6VI	619-461-2818 ad6vi@amsat.org
Vice President - Tom Storer	KI6DER	ki6der@amsat.org
Secretary - Gary Kent	W6GDK	858-679-0578 w6gdk@arrl.net
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Director - Tom Martin	KG6RCW	619-778-3866 rbg4@aol.com
Director - Dennis Baca	KD6TUJ	760-722-0251 kd6tuj@amsat.org
Scope Editor - Michelle Thompson	W5NYV	w5nyv@amsat.org
Repeater Chair - Dan Bubke	K6NKC	k6nkc@amsat.org
Membership - Al Donlevy	W6GNI	760-630-3096 w6gni@amsat.org

<sup>1</sup> The 146.730 repeater transmits a CTCSS tone of 107.2, but does not usually require any tone for access. When necessary, an access tone of 107.2 can be enabled. A 107.2 tone is always required for autopatch access.  
<sup>2</sup> PARC autopatches are closed, for members only, and always require an access tone of 107.2. For PARC autopatch access info, email [autopatch@PalomarARC.org](mailto:autopatch@PalomarARC.org).

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This month's General Meeting will be held on August 1<sup>st</sup>, 2007 (The first Wednesday of each month) at the Carlsbad Safety Center. The subject will be "Radio Direction Finding". Talk-in on 146.730 MHz repeater. Meeting starts at 19:30. Ridesharing and coordinating for dinner beforehand often occurs on the repeater on Wednesday afternoons. Everyone is welcome! The Palomar Amateur Radio Club serves the Amateur Radio community of San Diego County California with repeaters located on Palomar Mountain. The club has monthly meetings, Field Day festivities, an annual auction, and many other fun and interesting functions. All are welcome at our club meetings and on-the-air interactive radio nets which now feature discussion groups on hiking, microwave, off-roading, as well as traditional message traffic and emergency communications nets (RACES - ARES - MARA). 73 and hope to CU you on the air! -NN3V (past president of PARC)