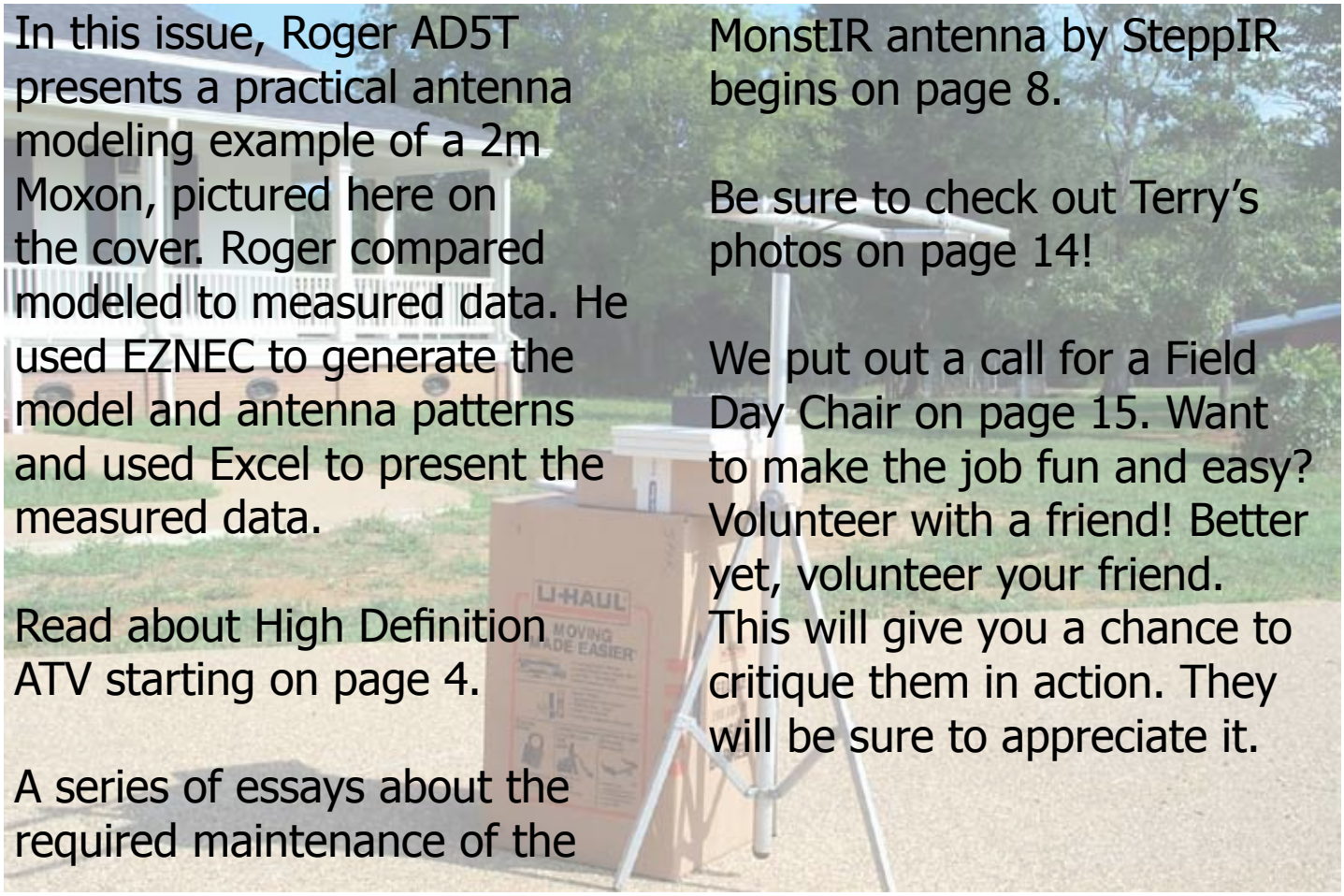
SCOPE

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

Our club logo (to the right) is in the process of being redrawn by Paul KB5MU. Thank you Paul for cleaning up and improving our club logo! Look for the new version soon.



In this issue, Roger AD5T presents a practical antenna modeling example of a 2m Moxon, pictured here on the cover. Roger compared modeled to measured data. He used EZNEC to generate the model and antenna patterns and used Excel to present the measured data.

Read about High Definition ATV starting on page 4.

A series of essays about the required maintenance of the MonstIR antenna by SteppIR begins on page 8.

Be sure to check out Terry's photos on page 14!

We put out a call for a Field Day Chair on page 15. Want to make the job fun and easy? Volunteer with a friend! Better yet, volunteer your friend. This will give you a chance to critique them in action. They will be sure to appreciate it.

Save the Date

Club Meeting
6 January 2010

Monica Zech speaks about Amateur Radio at 7:30pm.

Board Meeting
13 January 2010

Palomar Amateur Radio Club board meeting at 7:00pm at W6GNI QTH

Hamcation!
February 12-14, 2010

http://www.hamcation.com/
Central Florida Fairgrounds
4603 West Colonial Drive
Orlando, Florida 32808

Classified Ads are Free for Members!

Club Reports

Membership

Three members reinstated their membership. Welcome back.

If the Post Office returns your SCOPE, and we have an e-mail address, we can often find out why the mail didn't make it. I also phone if this happens. It seems that sometimes SCOPE's are returned, even though the address is correct. Please check what is there, and send me a correction if appropriate. If you want your "special" e-mail address or phone number kept confidential, let me know, and it will not be printed.

The renewal reminder for our members receiving the SCOPE by Web is helping. As a courtesy reminder, we print the calls of expired members for two issues. Hopefully the x-members will see it on the web, and respond with the usual $20 check - to the Post Office Box.
Those on our list this time are: KI6IID, KC6VXY, K0DHE, KF6GOF and W6CD. We really do need and appreciate renewals.

Al
W6GNI

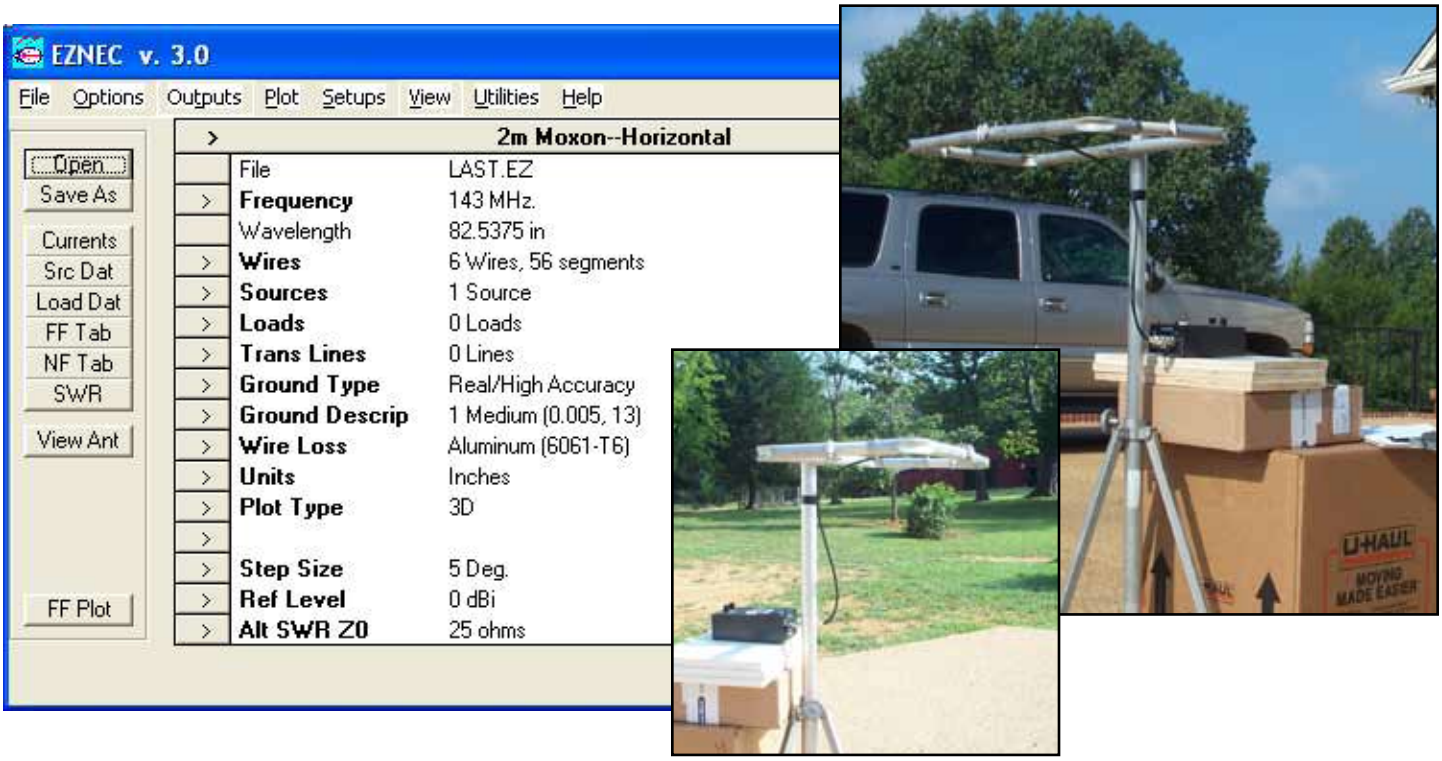
Fold and Staple

KB6NMK Jo
KB6YHZ Art
W6GNI Al @ Kathy
WA5ACE Sonny
KI6LLC Roni

Practical Antenna Models - The Moxon Antenna

by Roger AD5T

This article describes the EZNEC antenna modeling program and how it is used to optimize a 2m Moxon antenna. EZNEC is a program, developed and sold by W7EL. It is available from www.eznec.com. The version used for this article is 4.0. A free demo is available for download. The figure below shows the main screen of the program where the user inputs the antenna physical characteristics and selects the types of outputs desired. Photos of the completed Moxon are below to the right.



The primary input form is Wires, shown in the figure below, where Cartesian coordinates (x,y,z) are used to locate each wire in space. The wire diameter, which can be tubing sizes as well, and the number of segments, which are used in the program calculations, are also input by the user. The dimensions for this Moxon were based on a design at http://www.cebik.com/moxon/mvhf.html. The defining characteristics of a Moxon antenna are the compact size and excellent front-to-back ratio.

Wires

Wire Other

Coord Entry Mode Preserve Connections

Wires

No.	End 1				End 2				Diameter	Segs
	X (in)	Y (in)	Z (in)	Conn	X (in)	Y (in)	Z (in)	Conn	(in)	
1	8.125	-14.125	52.5		11.5	-14.125	52.5	W2E1	1	3
2	11.5	-14.125	52.5	W1E2	11.5	14.125	52.5	W3E1	1	21
3	11.5	14.125	52.5	W2E2	8.125	14.125	52.5		1	3
4	6	-14.125	52.5		0	-14.125	52.5	W5E1	1	4
5	0	-14.125	52.5	W4E2	0	14.125	52.5	W6E1	1	21
6	0	14.125	52.5	W5E2	5.58	14.125	52.5		1	4

continued on page 6

High Definition ATV

by Michelle W5NYV

We discussed amateur television (ATV) last month under the assumption that the television in amateur television was of a traditional analog NTSC format. What about high-definition ATV?

NTSC displays pictures consisting of 525 lines of resolution at 30 frames per second. Still pictures are first drawn on the odd numbered lines. Then, the same picture information is drawn on the even numbered lines. This odd-line then even-line drawing pattern is called interlacing, and the resolution using this technique is called 480i. 240 unique lines of information are drawn on each frame. The format was driven by a need to conserve transmission bandwidth.

The progressive scan format provides a picture quality improvement over interlacing, especially for large screens, where the interlacing becomes quite noticeable. Progressive scanning puts 480 unique lines of picture information into one picture frame, all at once, and is called 480p. Just going from interlacing to progressive scan improves the quality of the video, but that alone doesn't make it high-definition video.

High-definition video has a picture resolution of 1080i or 720p.

After an effort to design, build, and deploy digital satellite ground stations for AMSAT Eagle evaporated, those of us that had been greatly enjoying the technical challenge decided to continue on as a terrestrial microwave project.

We decided to call ourselves MEP, which stands for Microwave Engineering Project.

Project website:
http:// www.delmarnorth.com/microwave

We aim to design, build, test, and deploy a high-bandwidth duplex digital amateur radio system that is capable of both multiple-access and point-to-point communication. High-definition video is the central application. Automated station discovery and functions inspired by modern communication formats are also intended. The bandwidth is 10 MHz and the desired range for terrestrial applications is 50 miles.

Due to the amount of technology required, the number of patents required to comply with the various high-definition formats can be daunting. For this reason, it's important to choose a path that is as free of patent burdens as possible.

MEP decided to go with a video codec called H.264. This codec is widely used and has good performance. With H.264, the bandwidth requirements are greatly reduced. This means that the same video quality can be transmitted with a lower datarate, and therefore a smaller bandwidth. Or, you can think about it as being able to transmit a higher-quality video signal given the same datarate and bandwidth you may have been using before.

The H.264 codec utilizes many different patents that were granted to many different companies. In order to better promote and enable the technology, one organization manages a portfolio of patents that, in aggregate, allow you to implement H.264. So, instead of dealing with all the individual companies, you deal with this one technology licensing company. This company is called MPEGLA.

It took several conversations to explain how we were planning to use H.264. MPEGLA normally deals with commercial enterprises and not amateur radio projects. The negotiations hinged on whether or not the amateur radio operator who used our stations to communicate would be considered "end users". If they were considered end users, then they would not pay royalties. If MPEGLA was not convinced they were end users, and each amateur radio operator was considered to be a broadcaster, then they would trigger relatively large amounts of royalties owed.

It was emphasized by MEP during the negotiations that the nature of amateur radio was not broadcast and was non-commercial. This explanation resulted in MPEGLA agreeing with the interpretation of the license agreement defining amateur radio operators as end users. The group that creates the stations is considered to be a manufacturer, and pays royalties only after a large number of stations are sold.

The licensing adventure is only one small part of the journey. The system design involves everything from baseband to RF and requires an understanding of various communications protocols. To say we've made much headway would be very kind, but we do have a roadmap and intermediate goals.

The project is open source and open process. Open source means that all hardware and software is published. Open process means that the design process is done transparently. The project is open to participation and observation at all levels, and we welcome feedback, ideas, and criticism. Ω

November Board of Directors Meeting Minutes

The meeting was called to order at 7:07 PM by President Dennis Baca KD6TUJ. The meeting was held at the home of Al Donlevy W6GNI.

---Treasurer's Report
Georgia, KI6LAV presented the October Treasurers' report. Total assets are $12,392.14 and prepaid dues are $5,844. A motion was made to accept the treasurers' report by Loren AD6ZJ and seconded by Michelle W5NYV. Motion Carried.

General Meeting: December Meeting – Election and Social

Membership Report: Presented by Al W6GNI
Current club membership is 299.

Repeater Site/Technical Report:
- Mike, K6MRP gave the repeater site report. We still need to get 48VDC to 13.8V power supplies for all the units. We have decided on the Meanwell SD350C-12. It is fed from 48VDC and can deliver 13.8V at 27A. We can run two repeaters off of each supply. Loren AD6ZJ made a motion to purchase three 350W power supplies suitable to run 6 repeaters at a cost not to exceed $450.00. Motion was seconded by Mike K6MRP. Motion carried. Loren will order the power supplies.

Discussion items:
- Class and test for Marines. There is a desire to provide Ham classes for Marines. Dennis will talk to his contact about putting something together.
- Should PARC begin to design a new ATV system from scratch? Should PARC build a microwave beacon?

OLD Business:
- PARC Camper Trailer – The old trailer has been transferred to the tow yard is ready for termination. Interior pictures of the trailer will be in an upcoming Scope.
- 75th anniversary logo contest. Should we do one? Will discuss further
- Generator – Is now operating and Dennis is looking into propane conversion kit and will see about getting a used tank from a local supplier.

See SCOPE in color on our website at www.palomararc.org!

Repeater Down?

Hanging?

Let us know!

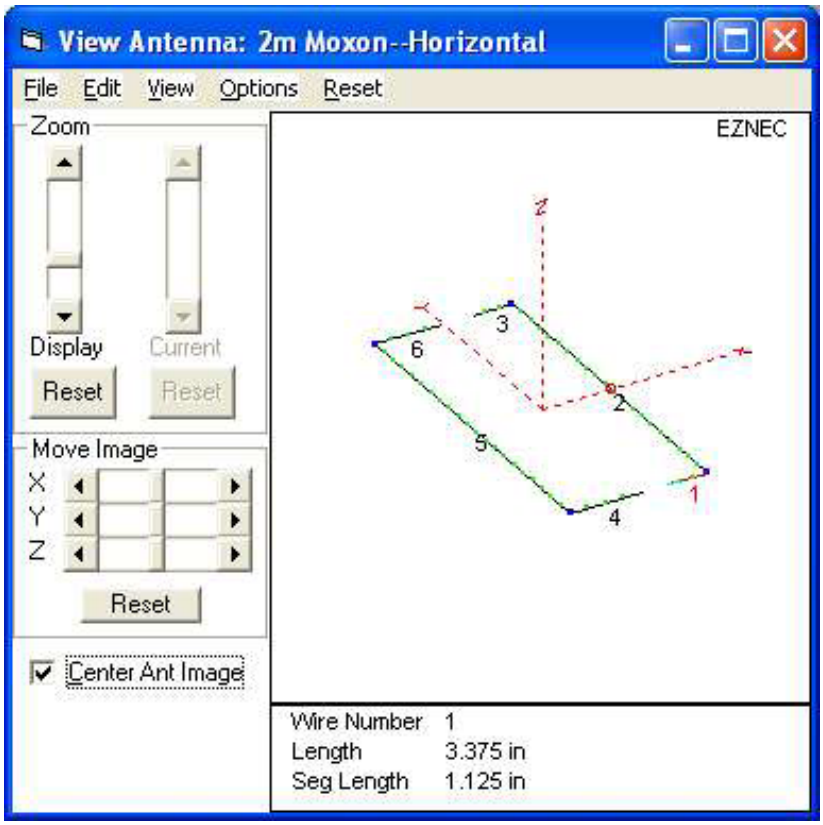
Send an email to: board@palomararc.org with your observation, the date, and time (approximation OK). Many ears make light work.

Upcoming General Meeting Topics
January 2010 Monica Zech
February 2010 - PARC 74th Anniversary
Month TBD - Lin Robertson KJ6EF – Vintage broadcast radios
Month TBD - KC6YSO – AM and other boat anchors
Month TBD - AK6QJ – Subject TBD
Month TBD – Ed Zeranski KG6UTS – Military radios

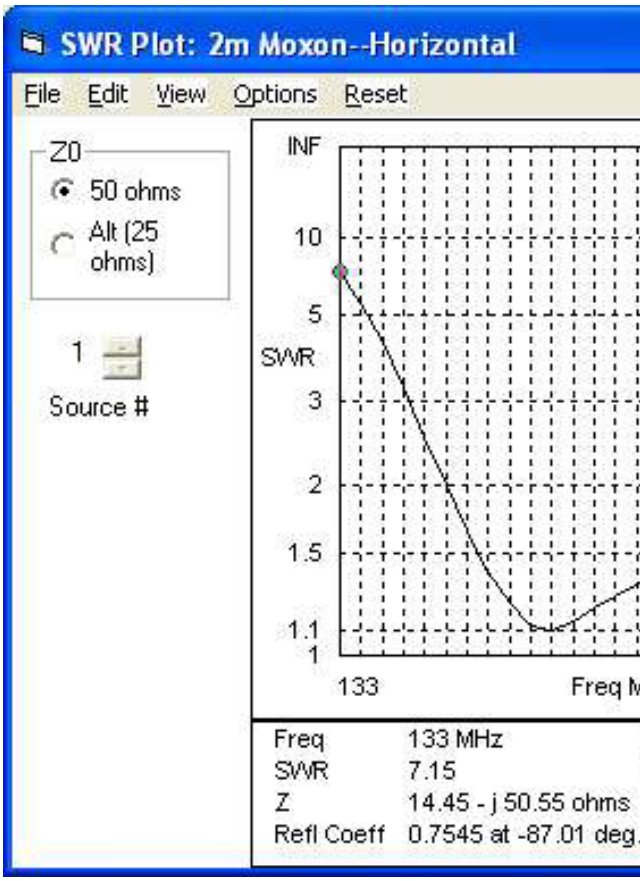
Board Members Attending November Meeting
President Dennis Baca KD6TUJ
Secretary Loren Hunt AD6ZJ
Director #2 Conrad Lara KG6JEI
Membership Al Donlevy W6GNI
Director #1 Paul Williamson KB5MU
Scope Editor Michelle Thompson W5NYV
Treasurer Georgia Smith KI6LAV
Repeater Chair Mike Pennington K6MRP

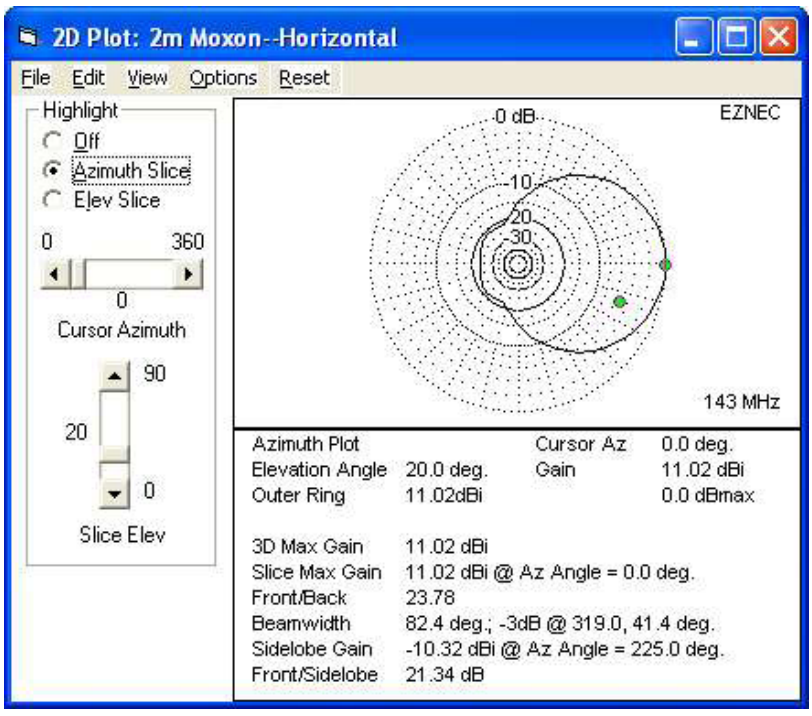
continued from page 3

The figure below shows a view of the antenna based on the inputs in the Wires table. This view is useful in finding if the antenna is properly described.

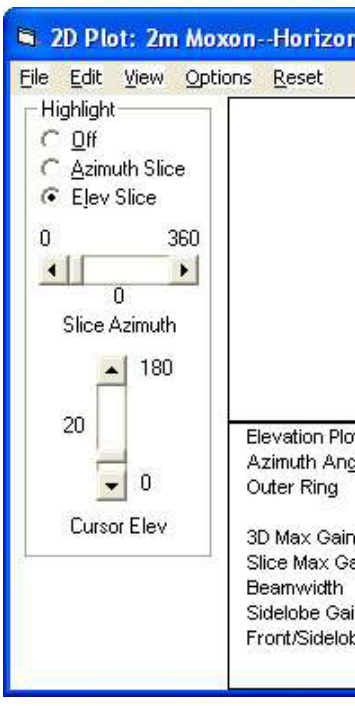


SWR plots are a useful output of the progra
The SWR response of the Moxon from 133 t
in this figure below.

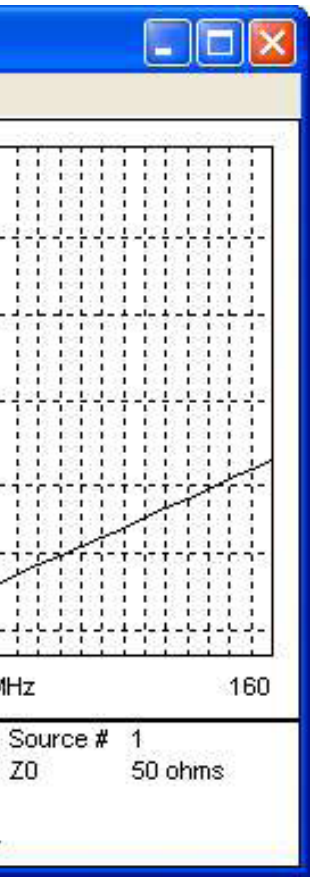




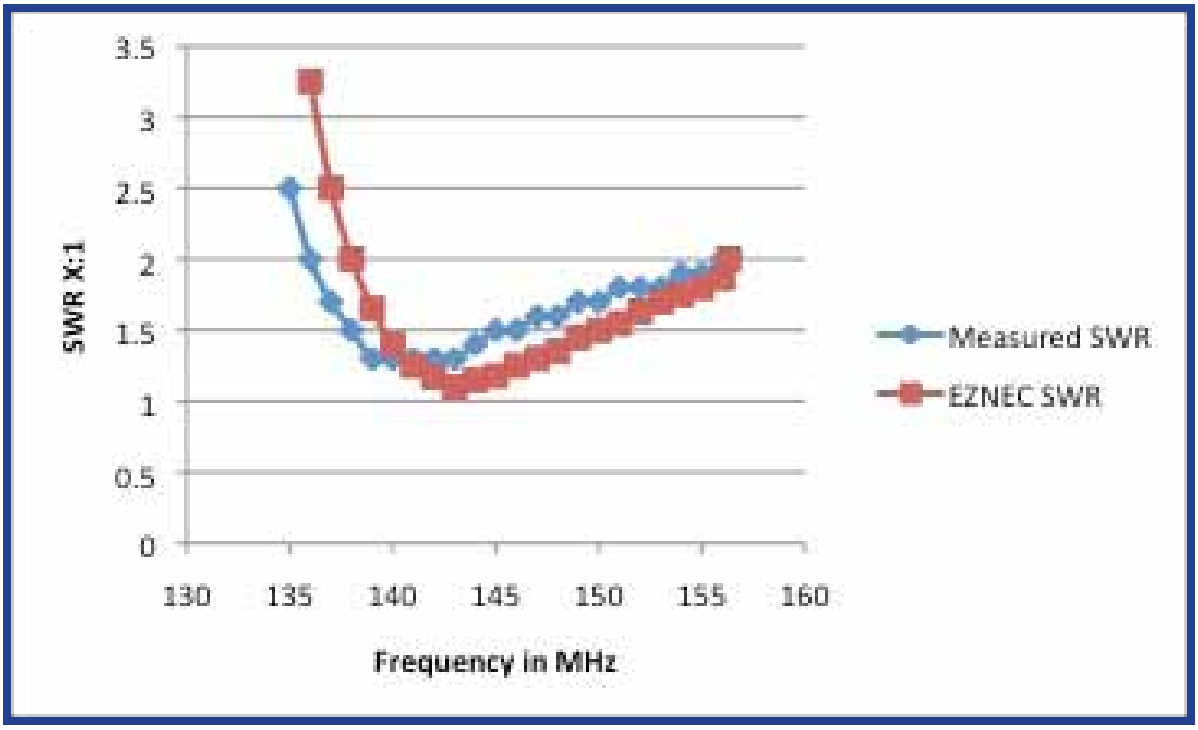
The azimuth pattern of the Moxon at about 50 inches above ground can be seen to the left. Azimuth patterns are antenna patterns viewed from above. The elevation pattern can be seen to the right. Elevation patterns are the antenna pattern as if you are looking at it from the side. Together, they give a good idea of the overall antenna pattern of the model.

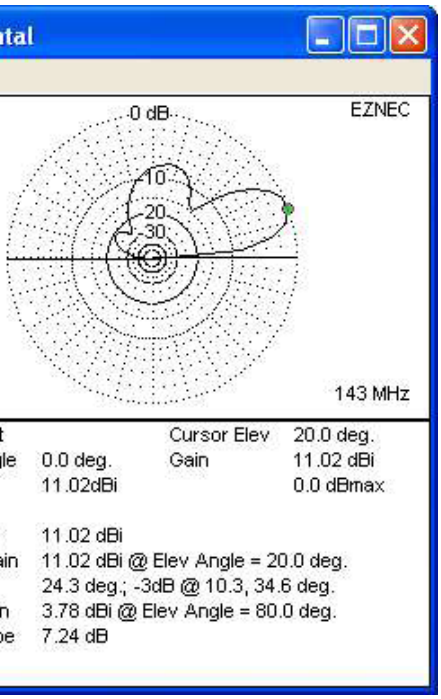


m.
to 160 MHz is shown

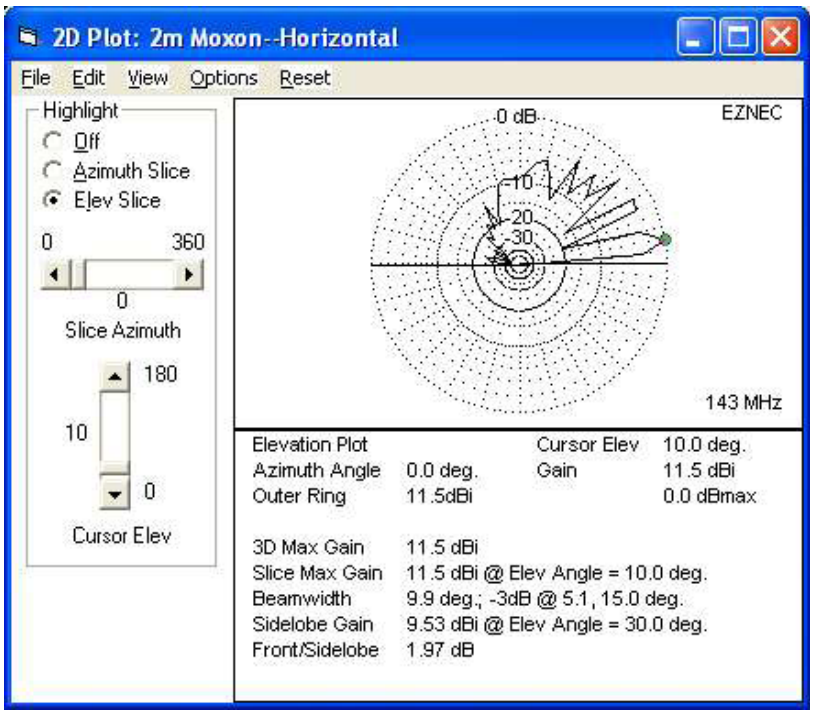


A comparison of model predicted SWR and measured SWR is shown in the chart below. The measured response is shifted down in frequency from the model data. Some causes of this shift may be the end loading of the PVC pipe, effects of the mount and feedline, and presence of the person doing measurements.





The pattern of any gain antenna changes with changing height above ground. To the right is the elevation pattern of the 2m Moxon at an elevation of 30 feet. Compare it to the elevation pattern to the left, where antenna height was 50 inches.



MonstIR SteppIR Mash

a conversation with Dennis N6KI and Howard KY6LA about their experiences with the SteppIR MonstIR antenna.

by Michelle W5NYV

The MonstIR Mash

I was working in the shack late one night, when my eyes beheld an eerie sight. For my MonstIR from his base began to rise! And suddenly to my surprise, he did the mash, he did the MonstIR mash!

MonstIR Care and Feeding

Howard KY6LA begins

Has it been almost 5 years since I put up the world's first MonstIR ever shipped, MonstIR#1?

http://www.ky6la.com/monstir_project.htm

First I have to say that it is the best antenna I have ever owned. I have owned all sorts of beams and quads so I speak from experience. It plays fabulously. When hunting DX or in contest I am actually quite surprised if I am not the first person that they respond to in the pile up, as it would seem that in 95+% of the cases I am usually the first to punch through even though I only run 1kW. And I can hold a frequency indefinitely during a contest. It's a fabulous antenna. So what is happening with my MonstIR?

I have been using the MonstIR with an Icom IC-756 Pro3 and a PW-1. I bench tested it with an IC-7800 and a K3. Both seemed superior to the Pro3 so I almost went there, but then I discovered the Flex SDR-5000 which beats the socks off of both the K3 and the IC-7800, as well as the IC-7700. So, I upgraded my station to a Flex5000. The Pro3 is now relegated to SO2R operations. One advantage of an SDR radio is the computer interface to the radio so it is remarkably easy to run remotely. As I travel a lot, I thought it would be great to run my home station during a contest from the DX side of the world. To test it out, during the 2009 CQ WW DX Contest, I remoted my station from my shack over the Internet to the living room so I could watch football games on a larger screen while contesting. I had full remote control of the radios, computers, rotors, antennas, etc., etc. It was really cool, but what I forgot to control is to have feedback on the elevation of my tower. Big mistake and a good reason to run a real world test from another room. I had recently installed a VHF antenna on a guyed pole on the roof. Unfortunately when my MonstIR's tower is totally nested one of the guys intersects the turning radius of the MonstIR. So there I was, blindly working the radio, automatically tuning antennas and rotating, then bang! I rotated an element into the guy and busted the 18' fiberglass end pole of Director #2.

Needless to say it had to be fixed and this was a good time to go up and inspect the MonstIR to see how well it survived 5 years in the elements. So I rented a 60' boom lift truck for the weekend and went up to inspect the damage. My plan was just to inspect things, replace the broken 18' tip ($38) and if nothing else was damaged, that would be it. No more lift truck rentals, no more expense. On the other hand, it any of the motors or tapes were damaged then I would have to return them to the factory for repair. This would mean another lift truck rental. In this case, I would have the motors modified to add the 80m dipole to the MonstIR. This does not add any significant weight or wind area and may even strengthen it. In a funny way, I was proba-

Bottom Line

Dennis "Great antenna idea, poor implementation of design, little to no quality control and lousy to mediocre customer service."

Howard "They are the best performing antennas on the market. Would I have bought the MonstIR again? ABSOLUTELY. It just works so damn well. But this time I am going to spend much more time, money and effort to protect it better from UV and salt so that it will survive another 10 years without further maintenance."

bly hoping that the antenna motors needed to go back to the factory as an 80m rotatable dipole with no added wind area was very attractive, especially since Dennis N6KI with MonstIR #2 had already sent his into the factory for the upgrade. And the new controller looked cool. Well, of course, the best laid plans of mice and men oft go astray. What I found I got up there to find that not only was Director #2 (the unpainted element) missing its tip, but the motor was not working to fully retract the element. Funny enough the MonstIR worked so well that I probably did not even notice that Director #2 was not working. The motor issue turned out to be a broken control cable. 5 years of intense UV had made the cables very brittle. Also, one of the 2 tapes had jumped its reel and was stuck. It had looped over the second reel. This might have happened when the tip broke but I do not think so. In addition, MonstIR#1 came with the infamous Mission Boots. All the unpainted ones were cracked and spit badly. Some of the painted ones were split but saved by the paint. Bottom line, all 4 motors went back to the factory for upgrades.

Above, the view from the boom lift truck. Photo from KY6LA.

All the fiberglass tips needed painting. And I am going to have to rent another 60' boom lift to put them back. But, the good news is that when I am finished this antenna should last for at least 10 more years without further maintenance.

There has been a lot of controversy about painting the elements to protect them from UV. Let me end that controversy once and for all. PAINT THEM.

I live in La Jolla, CA where we get 320+ days a year of sun, which means a lot of UV. I live less than a mile from the Pacific Ocean so I get a lot of salt spray. I had been one of the original people who wanted to paint the MonstIR and in fact we did when it went up. On the advice of Harvey K6QK (SK) I deliberately did not paint one of the elements but painted everything else so I could see if it made sense to paint. Where the element was not painted the antenna suffered severe UV damage to the point where the substrate was completely gone and only the glass fibers remained. Where it was painted the paint was damaged and discolored but the substrate was saved. Where the rubber couplings were painted, they survived relatively unscathed. Where there was bare rubber, the rubber was cracked and broken.

It was actually fortunate that I went up there to inspect it as one of the elements was only attached by friction, albeit the friction was so tight that I had to take the entire motor element to the ground to pry them apart. We had used relatively inexpensive Krylon UV Spray Paint. It survived but clearly it would not last 10 years, which is the next design goal for myself and Dennis N6KI who has MonstIR #2. I have now purchased Interlux Fiberglass Primer and Interlux Brightside Polyurethane, which is marine fiberglass paint. This is relatively expensive stuff, about $40-45 per each quart at a local store called West Marine, but is designed for outdoor fiberglass coverage. I hope to be able to protect the MonstIR for at least 10 more years by painting it. The cost of the paint is inexpensive compared to hiring another lift truck. As I indicated earlier, the original MonstIR came with the infamous "Mission Rubber Boots". They, for the most part, failed. They will now be replaced with Fernco boots, which will then be taped with Scotch #33 tape, then covered with silicone tape and finally painted to protect even the silicone from UV.

Below, the view of the boom lift truck from the ground. Photo from KY6LA.

I connectorized MonstIR #1 so that each element could be installed and de-installed separately just by unplugging it near the

Above, the view of the beam from up on the tower. Photo from KY6LA.

motor. That turned out to be a life saver as it made the original assembly on the boom on the mast (while tilted) very easy and made the disassembly using the boom lift truck even easier. I understand that to keep costs down, SteppIR did not connectorize the motors. But realistically that pigtail approach never made any good engineering sense as the motors occasionally need to be taken down for maintenance. I originally used surplus mil-spec in-line connectors as I did not want to modify the Element Housing Unit boxes.

These disassembled easily and showed absolutely no water damage or corrosion after 5 years in the salt air. With the advantage of 20-20 hindsight I should have bitten the bullet and installed connectors right on the EHU's just like Harvey K6QK (SK) did. I am going to do this now. One of the failures turned out to be the UV-damaged connector cable to Director#2. Because of the fact that I was using in-line cable connectors, I could not just swap the cable out at the connector. So to avoid this issue in the future, both Dennis N6KI and I are totally redesigning our connector strategy.

We are going to use

Circular Cable End Connectors 5P SOCKET CBL END DAISY CHAIN GRMMT Mouser P/N 502-6282-5SG-3DC Switchcraft P/N 6282-5SG-3DC

Mouser Page:
http://www.mouser.com/ProductDetail/Switchcraft/6282-5SG-3DC/?qs=I3kMT7EEIOWQEONxeia%252bwA%3d%3d

Bulkhead Panel Mount --Circular Connectors 5P PIN PANEL MNT

Mouser Part #: 502-7282-5PG-300
Switchcraft Part #: 7282-5PG-300

Mouser Page :
http://www.mouser.com/ProductDetail/Switchcraft/7282-5PG-300/?qs=zRnNmUVysJetupSt2esXPQ%3d%3d

Above, the view of the beam from up on the tower with the motor removed. Photo from KY6LA.

You need 1 of each for each part number per EHU and 1 set of each if you want to install in the interface box. We are still looking for an inexpensive waterproof 21 pin connector for the interface box.

Dennis and I are currently debating whether to connectorize the Interface box as well.

Dennis' suggestion is use connectors only at the EHU and pass the other end of cable through a grommet into the interface box and terminate that end onto terminal strips.

Dennis' point is that there is one less set of connectors to cause connection problems.

My point is to be able to replace the entire connector cable without having to deal with pigtails has a major convenience factor as cables can be assembled completely on the ground.

I might note that our guru Harvey K6QK (SK) built his SteppIR after we put our MonstIR's up using similar connectors at both ends, which corresponds to my preference, but he also buried the control cables inside the boom to protect the cables from UV. After Harvey passed away, we took down his SteppIR which had been up for 3+ years in our hostile environment. It had no visible damage. Harvey, as usual, was right after all.

As my boom is still in the air and not about to come down again, I cannot realistically do that.

Both Dennis and I found that the control cables had become brittle in our intense UV. I guess they never see the sun up in Washington!

So both Dennis and I are searching for higher quality UV-resistant control cabling. If worst comes to worst, we can always entirely wrap every cable in silicone fusion tape and then paint it.

In the next few weeks I expect to get my repaired EHU's back from SteppIR with the 80m mods, ready to go.

In the interim I am painting elements and building new control cables.

Then I get to spend $435 per day to rent the 60' boom lift to put it back together. If you rent it Friday afternoon, you usually get the weekend for free!

The boom lift is so much fun that I am trying to put together a group of hams to buy one for ourselves.

Dennis N6KI Continues

I don't even want to think about what problems other SteppIR owners have or will have with the MonstiR and other models in really nasty climates, with extreme heat, cold, humidity, wind/ice loading, etc.

The bottom line is that some of the design features of SteppIR antennas were not ready for prime time and everyone who buys and assembles one better spend some time to re-engineer them for their particular circumstances and environment on the ground before putting up.

SteppIR antennas can be a bit more difficult than lighter and less intricate antennas to put up and take down for maintenance and repair.

I suggested to all my friends who asked me whether they should buy a SteppIR that they have a good plan on how to easily get it back down without having to hire professional climbers or bucket trucks.

I worked many years in the research and development of electronic products and know that products should be designed to last a reasonable amount of time. That time for antennas, in my opinion, was 10 years in non-hostile environments, which most US hams live in. You guys in Finland on the Arctic circle are an exception. This would be equivalent to a car with 100,000 miles. When designed and assembled properly the antennas, just like cars, should not have any major failures.

So when our MonstIRs go back in the air, we will do the necessary mods to keep them up for 10 years of normal operations.

Seeing how difficult the MonstIR is to assemble and especially take back apart in pieces upon failing, I suggested to any of my ham friends that contemplated buying one, to get a tower system that allows easy access to the antenna like a tilt fixture on the tower and a tilt bracket like NN4ZZ manufactures, and enough land area to accommodate tilting the antenna into so all work can be done at ground level.

Taking down an antenna every 3-4 years for major maintenance is not what I would consider acceptable.

Howard KY6LA concludes

Perhaps it's because I have had a lot of experience designing things such as Traffic Controls and Mobile Vehicle Monitoring Systems that need to survive in harsh outdoor environments, but I am not quite as harsh as Dennis is of SteppIR

When we first invented computerized traffic control systems in the early 60's (I own part of virtually all the original fundamental patents), we had a heck of a time with the reliability of traffic loop detectors, traffic control vaults, and other parts of the system. We designed them for what we thought would be to last indefinitely, but we quickly found that all sorts of unanticipated things happened to make them less than 100% reliable. Because of patent revenue and the wide adoption of our technology, we had lots of money to fix our mistakes, but it took more than 10 years of trial and error to iron out all of the reliability bugs. And, in fact, I still see things today more than 45 years later that we could do better.

In the case of SteppIR, and especially the MonstIR, it was a totally new design. I own MonstIR #1, the first one ever shipped. I went into it knowing that there would be all sorts of unanticipated issues. I actually looked forward to discovering and solving the issues. Surprisingly, my MonstIR has had few issues that I did not cause myself and for the most part has been extremely reliable. In fact, compared to the fiberglass quads I had in Canada , which managed to get destroyed every winter, the MonstIR was a paragon of reliability.

As I said, I expected issues and I had anticipated that the MonstIR would need to come down in a couple of years for upgrades to resolve issues that had been discovered and corrected. In fact, it made it to 5 years and likely would have continued to be up there if I had not rotated it into a guy wire when the tower was nested. I need to move that guy wire out of the turning radius!

SteppIR is a small company with limited resources. While they are pretty good antenna designers and design antennas that perform much better than anyone else, it is obvious that they do not have significant experience with reliability engineering for harsh outdoor environments.

The other fact that mitigates this is that 5 years is a very short time in the life cycle of such a product. So they are only now getting field data from which to do the reliability analysis. Yes, if they

Left, KY6LA with helper.
Above, boom lift truck in action.
Photos from KY6LA.

had had a lot of startup money, I suspect that they could have come up with a better initial design. But they didn't have the money. Hams may think that SteppIR charges premium prices, but realistically if this were a true commercial grade product it would cost ten times as much, if not more.

On the MonstIR, the metal parts seem all to be OK. They have issued a high winds elements upgrade kit but it is unnecessary where we live in San Diego, CA. The main issue is UV damage to fiberglass, rubber connections and cabling. The secondary issue is that the use of pigtail wires to connect the Element Housing Units is incredibly inconvenient. I prefer to use individual connectors for each EHU, as I did in my original installation.

So Dennis and I are going to spend a few hundred dollars each on:

1. UV resistant paint
2. UV resistant cabling
3. New rubber connectors
4. Lots of Scotch 33 tape
5. Lots of silicone tape
6. Waterproof connectors (our design choice option)

We may install the newer and apparently more reliable motor spindles.

In the scheme of things this is not a lot of money. It's probably $500 to add another 10 years of life so it works out to be $50 per year for extra life.

I have a tilt-over tower with a motorized tilt-over tool designed by Harvey K6QK, but I found that the $435 I spent to rent a 60' boom truck to be well worth the money and much less work than tilting the tower. So, that extra cost is my choice rather than a necessity since I love to ride the bucket!

Dennis and I are both perfectionists, so we probably have design expectations that are much higher than a typical ham. There are thousands of SteppIR's out there now in all sorts of harsher environments, and most have had no issues whatsoever.

Since virtually everyone who has used them swears that they are the best performing antennas on the market, the necessary maintenance is well worth doing. Ω

The Magic of Ham Radio

by Terry K3PXX

Spaceman Richard Garriott came to The Society of American Magicians Convention in Buffalo, N.Y. in July. He was surprised to find that there are many magicians who are also Hams. I just happened to have a couple of HT's with me (how about that) to take these photos.

Richard is W5KWQ and he is standing next to Lisa and Craig Dickson. Craig is KB2REC. Craig is a magic dealer and I spent most of my cash at his booth. Sorry, can't tell you what I bought.

There was another Ham standing there when we took these photos but I can't remember his call.

Richard and another hamgician started a chapter of The Society of American Magicians on the ISS and any member of the SAM can join. They did a magic show up there and showed the movie at the convention.

CQ CQ Field Day Chair

by Paul KB5MU

ARRL says Field Day is "not a contest" – but they list it under Contests on their web site and it has Rules like any other contest.

Like this one:

> Object: To work as many stations as possible on any and all amateur bands (excluding the 60, 30, 17, and 12-meter bands) and in doing so to learn to operate in abnormal situations in less than optimal conditions. A premium is placed on developing skills to meet the challenges of emergency preparedness as well as to acquaint the general public with the capabilities of Amateur Radio.

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Field Day 2010 - Where do you fit in?

It's early December, and Field Day is half a year off. Much of the detailed work to prepare for Field Day won't really get started until the last few weeks before the event. If you're just going to drop by and enjoy the event or even operate a shift at one of the stations, you probably don't need to start worrying about it yet. But somebody does.

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Please consider volunteering to serve as 2010 Field Day Chairman.

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Editor: Michelle Thompson W5NYV
Submissions: scope@palomararc.org
Questions? Ideas? Comments? W6NWG@amsat.org

Featured Program:

Monica Zech speaks about amateur radio at our January 6th meeting at 7:30pm at the Carlsbad Safety Center, 2560 Orion Way, Carlsbad, CA, USA. Arrive at 7:00pm to socialize. We look forward to seeing you!

SCOPE

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

The winner of a Yaesu FT-1802 pre-programmed mobile radio at the January meeting drawing was KJ6EJT Michael Bream. Michael was a first time visitor, joining PARC at that meeting. Welcome to the club, Michael, and congratulations on your new mobile radio!

Below, January speaker Monica Zech draws raffle winner, Michael Bream. Michael is pictured below right. Photos by KG6JEI

Save the Date

Club Meeting
3 February 2010

Help us celebrate PARC's anniversary! DXpedition Program at 7:30pm.

Board Meeting
10 February 2010

Palomar Amateur Radio Club board meeting at 7:00pm at K2RP QTH

Hamcation!
February 12-14, 2010

http://www.hamcation.com/
Central Florida Fairgrounds
4603 West Colonial Drive
Orlando, Florida 32808

Membership

New Members Joining PARC:
KE4USZ, KJ6EDO, KJ6EDR, KJ6EJT, KJ6CLS. Several members reinstated their membership, which had lapsed. Thanks to all.

A number of members have elected to receive the SCOPE on the WEB. This saves the club the cost of printing and mailing, which is good. The 'not so good' is that they do not get the monthly reminder that their membership is up for renewal - which is printed on the mailing label for those that receive the SCOPE by mail. As a service, we are printing the call's of the web SCOPE members whose membership has expired recently, hopefully by oversight. The following memberships have expired within in the last couple of months: K0DHE, KF6GOF, W6CD, KI6JEX, and W6MBM.

PLEASE RENEW!!
Al
W6GNI

Fold and Staple - The last Fold & Staple for 2009!

KB6NMK Jo, WA5ACE Sonny, W6GNI Al & Kathy, N6UZH Terri

Greetings to all members and readers of the Scope! I'm happy to present another issue of the club newsletter.

This month, our cover features our January meeting raffle winner.

I talk about radio meteor science and ham radio on page 3. Also on page three is a bit of cool jazz news from Mitch K6BK.

Meeting Minutes are on page 5. Read about the VHF Sweepstakes on page 6.

Repairs to the repeater site are detailed with photographs on page 7.

Ron describes the Collins 75A2 Receiver starting on page 8. PARC is on Facebook, page 10.

We put out a call for a Field Day Chair on page 11.

Want to make the job fun and easy? Volunteer with a friend! Better yet, volunteer your friend. This will give you a chance to critique them in action. They will be sure to appreciate it.

Please send questions, comments, and articles (ideas welcome) to Scope@palomararc.org

Yours, -Michelle W5NYV

For Sale

Nothing listed this month!
Have items that need to find a new home? Advertise here!
Send your ads to scope@palomararc.org
Classified ads are free for members of the club.

Mitch K6BK writes,
"If you like smooth spontaneous jazz, my son Brendan K6BMK (age 16) recently played a paying gig at the outdoor reception of the La Jolla Motor Car Classic at The Cove with three other students from The Bishop's School.

His brother Wes K6WES recorded and produced an album from it, which can be downloaded free at the following website, or you can just listen to a sample track there.

73, Mitch K6BK

HTTP://WES.LY/MUSIC/JAZZ-AT-THE-COVE/

Radio-Meteor Science & Hams

by Michelle W5NYV

Meteors come in at least two categories. Members of a particular shower (e.g. Leonids, Perseids), and sporadic, which don't seem to be members of a particular shower. Identifying whether or not sporadic meteors are a member of a particular shower is an active area of research where amateur astronomers can contribute. Since meteors can be detected using radio, amateur radio operators that are interested in astronomy can certainly help.

If a radio transmitter at a distant location is transmitting, and a receiver is receiving, and a meteor increases the electron density in the ionosphere (ionizing the atmosphere) in between the transmitter and receiver, then the meteor can be detected. Hams that are familiar with meteor scatter will recognize this situation right away.

Meteor tails have very high charge density and are therefore very good at reflecting radio waves. While non-hams generally use faraway commercial FM radio stations (so far away as to be out of range, without a station on frequency nearby), hams can use stations that are on ham radio frequencies.

There are no well-defined observing procedures. There are no commonly-accepted observing results from different methods. However, there is a group that is trying to figure it out. The most active radio-meteor group operates under the auspices of the International Meteor Organization (http://www.imo.net). Want to contribute? Check them out! Hams can certainly help assist science in this area.

Monica Zech Presented at the January Meeting

photos by Conrad KG6JEI

74th Anniversary Cake... What will it look like?

Cake photo courtesy of DJFrantic. Find more of DJFrantic's fine photographs on the web at: http://www.flickr.com/photos/djfrantic/

You'll just have to come to the meeting to find out!

There will be some celebratory food at the February meeting. If you'd like to bring a dish to share, please do. We plan to have a cake and cakes can get lonely when they're all by themselves on the table.

Ham Haiti Relief Efforts

If you know of any local hams that are involved in the relief and communications effort in Haiti, please let the Scope know. We would like to publish a description of your work and experiences.

Many of us have been monitoring the various amateur radio nets providing communications support in Haiti. An article about communications, including ham radio, can be found at:

http://wiki.radioreference.com/index.php/Haiti_Earthquake_2010

A link to ham radio live feeds via internet:

http://www.radioreference.com/apps/audio/?stid=283

January Board of Directors Meeting Minutes

Treasurer's Report
Georgia KI6LAV presented the December Treasurer's report. Total Assets $12,249.57, Total Liabilities $5,571.00. Motion to approve by W6GDK, second by W6GNI. Approved

The permit fee of $20.00 was paid to allow holding raffles. CD number 50 is maturing. Decision to split the CD with $60 into savings, $1000 into checking and slit the rest ($5000) into two CDs.

Secretary's Report
Gary W6GDK presented the December Secretary report. Motion to accept by KB5MU, second by KI6LAV. Approved

OLD Business:
The generator at the site may have an auto start kit available for it.

NEW Business
KB6NMK requested to modify the preamble for the ARES net on Sunday mornings. Other corrections were also suggested. Motion to approve changes by W6GDK, second by KB5MU. Approved

Below, 2010 PARC Board of Directors photographed at the January board meeting. From left to right, Conrad, Paul, Al, Georgia, Gary, Dennis, and Ron. Photograph by Michelle.

General Meeting:
The February program will be presented by Wild Bill WB6BFG on Jersey Island

Membership Report:
Presented by Al W6GNI – membership currently 291 members.

Repeater Site/Technical Report:
There is a leak in the roof above the 6 meter repeater cabinet. A temporary fix is in place, but needs a permanent patch.

Loren, AD6ZJ was asked to chair the repeater technical committee. Motion to approve appointment by KB5MU, second by KG6JEI. Approved.

SANDARC is moving their meeting night to the third Tuesday of the month at the Kearny Mesa Rec Center, time is 1900 to 2100.

Conrad noted that the old KGB equipment is still on site. Notice to remove was sent long ago and we now consider it abandoned. Old battery shed is now nearly empty and we will soon be able to decommission the building.

We need a Field Day Chairman.

Place of next Board Meeting: Home of Ron Pollack K2RP in Encinitas at 7:00 PM on February 10 at 1900.

Motion to adjourn at 8:41 PM by KD6TUJ.

Upcoming General Meeting Topics
February 2010 - PARC 74th Anniversary and DXpedition program about Jersey Island by Wild Bill and Ellen.
Month TBD - Lin Robertson KJ6EF – Vintage broadcast radios
Month TBD - KC6YSO – AM and other boat anchors
Month TBD - AK6QJ – Subject TBD
Month TBD – Ed Zeranski KG6UTS – Military radios

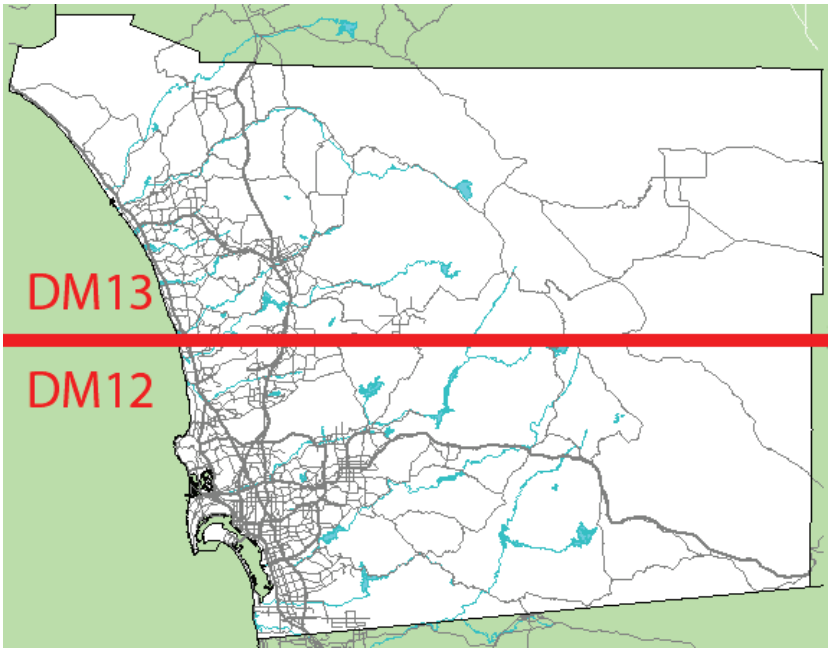
Board Members Attending January Meeting
President Dennis Baca KD6TUJ
Vice President Ron K2RP
Secretary Gary Kent W6GDK
Director #2 Conrad Lara KG6JEI
Membership Al Donlevy W6GNI
Director #1 Paul Williamson KB5MU
Scope Editor Michelle Thompson W5NYV
Treasurer Georgia Smith KI6LAV

VHF Sweepstakes is This Weekend

One of Many Club Entry Contests Sponsored by ARRL

by Ron K2RP and Wild Bill WB6BFG

Find contest rules at: http://www.arrl.org/contests/rules/2010/jan-vhf-ss.html



The exchange is simply the grid square, which for most of us in North County is DM13. Most of us in San Diego will be in DM12. The map at right shows the dividing line between the two grids. For any location in San Diego County, if your latitude is over 33 degrees, you're in DM13. If your latitude is 32 point something degrees, you're in DM12. The dividing line crosses Interstate 5 about half a mile north of Lomas Santa Fe, and Interstate 15 just north of Camino Del Norte.

Whoever is active on the repeater can announce this as well. Several of our members and friends are active in this one, and even local contacts are appreciated!

This contest is a great example for folks to see how far they can talk VHF (6 meters on up) frequencies. This has implications for emergency communications and could serve as a quick and simple test of equipment and readiness.

Here are links about grid squares:

http://www.arrl.org/locate/locate.html
http://www.icomamerica.com/en/downloads/Default.aspx?Category=181
http://www.levinecentral.com/ham/grid_square.php

The contest could be done as a club effort. There are eight ARRL-sponsored contests that are designated as Affiliated Club Competitions (ACC) for ARRL and RAC affiliated clubs. The contests are January VHF Sweepstakes, RTTY Roundup (January), (February and March) International DX Contest, June VHF QSO Party, August UHF Contest, September VHF QSO Party, November Sweepstakes, (December) 160-Meter Contest, and the (December) 10-Meter Contest.

Activity is mostly sideband. This contest offers participants a chance to make random 2m contacts, which is somewhat unusual.

Brief Introduction to Grid Squares

by Paul KB5MU

The Maidenhead Locator System is used to divide the world up into grid squares, identified by a four-character or six-character grid square locator. In VHF-and-up contests the exchange usually includes the grid square. Using the form at http://www.amsat.org/amsat/toys/gridconv.html you can enter either a grid square locator or the latitude and longitude of a location. If you enter a grid square and select Convert to Lat/Lon, the latitude and longitude fields will be filled in with the position of the center of the grid square. A good online reference can be found at the following web site.

http://www.arrl.org/locate/gridinfo.html

Emergency Leak Repair at the Repeater Site

by Conrad KG6JEI

On Sunday January 17th Dennis KD6TUJ along with Conrad KG6JEI went up to the PARC repeater site to investigate the cause of a leak in one of the roofs discovered during the last rainstorm. An inspection on top of the building by Dennis revealed a cracked and failing weather sealing line (see below) where two levels of roof structure meet.

This leak allowed water to seep into the sub-roof of the building and eventually drip down directly upon the 6 meter repeater. This failed seal was stripped and redone in order to provide weather proofing for the rains that fell starting Sunday night (photo in center). The emergency water ducting previously erected in December was allowed to remain in place as a back-up (pictured below).

We were fortunate to have the club's official new repeater technical chair Loren AD6ZJ join us on site as well (photo at right). He took up the job of collecting spare parts to be tested, inventoried, and in many cases repaired or aging parts replaced prior to failure/utilization.

Components such as decades-old electrolytic capacitors will be replaced in order to ensure we have spare parts that not only work but will last through the long duty cycles we subject our repeaters to. This will allow club technicians in the future to have reliable working parts on site that are known working for quick swap in replacement repairs. Sorting process pictured below.

Collins 75A2 Receiver
I Call it "The Deuce!"

by Ron K2RP

In July, 1950, Collins Radio took a double page ad in QST to announce their upcoming 75A2 receiver, which was due to start deliveries in October. The ad detailed the improvements over the current 75A1, which had appeared 3 years earlier.

A bit of history is in order. Collins Radio was founded in the early 1930s by Art Collins to produce broadcast transmitters, and then went into the amateur transmitter field as well. At this time, almost all ham transmitters were homemade, so this alone was an innovation.

What set Collins apart from the other manufacturers, from the very first until exiting the amateur market in the 1970s, was that every unit and every model was top of the line, of the highest quality, and built to the strictest standards. Other manufacturers like Hammarlund, National, and Hallicrafters produced a wide variety of models for a range of budgets and preferences, but Collins had but one model transmitter and receiver at any given time of a type, with no "budget" or compromise models available. An analogy that comes to mind is General Motors and Hallicrafters. GM builds the smallest Chevy and the most luxurious Cadillac, and Hallicrafters, in 1950, produced the S38 for $40 and the SX42 for $275. Rolls Royce and Collins made only Rolls Royces!

And they were priced like a Rolls Royce, too! The introductory price of the 16 tube 75A2 in late 1950 was a whopping $420, plus external speaker. Even at that price, there was a long list of orders awaiting deliveries that fall. Compare that to the Hallicrafters SX71, a popular 14 tube double conversion general coverage receiver of the same era, which cost less than half as much.

What exactly did Collins offer that made hams willing to part with that much money? First of all, the Collins 75 series were ham-band-only units. Virtually all other manufacturers offered only general coverage receivers, until National introduced the NC300, Hammarlund debuted the HQ110 and HQ170 and Hallicrafters brought out the SX101, all in the mid 1950s. But it was the performance, in terms of stability, selectivity, and sensitivity, that stood out. Collins had grown, as many other electronics companies, during the Second World War, filling the enormous demand for communications, radar and other electronics. The military specified exactly how these were to be made, and they were always rugged and reliable. When converting back to peacetime production, some companies reverted to consumer level construction, while Collins maintained their military specs right to the end. One of the most striking differences in design was in the tuning circuitry.

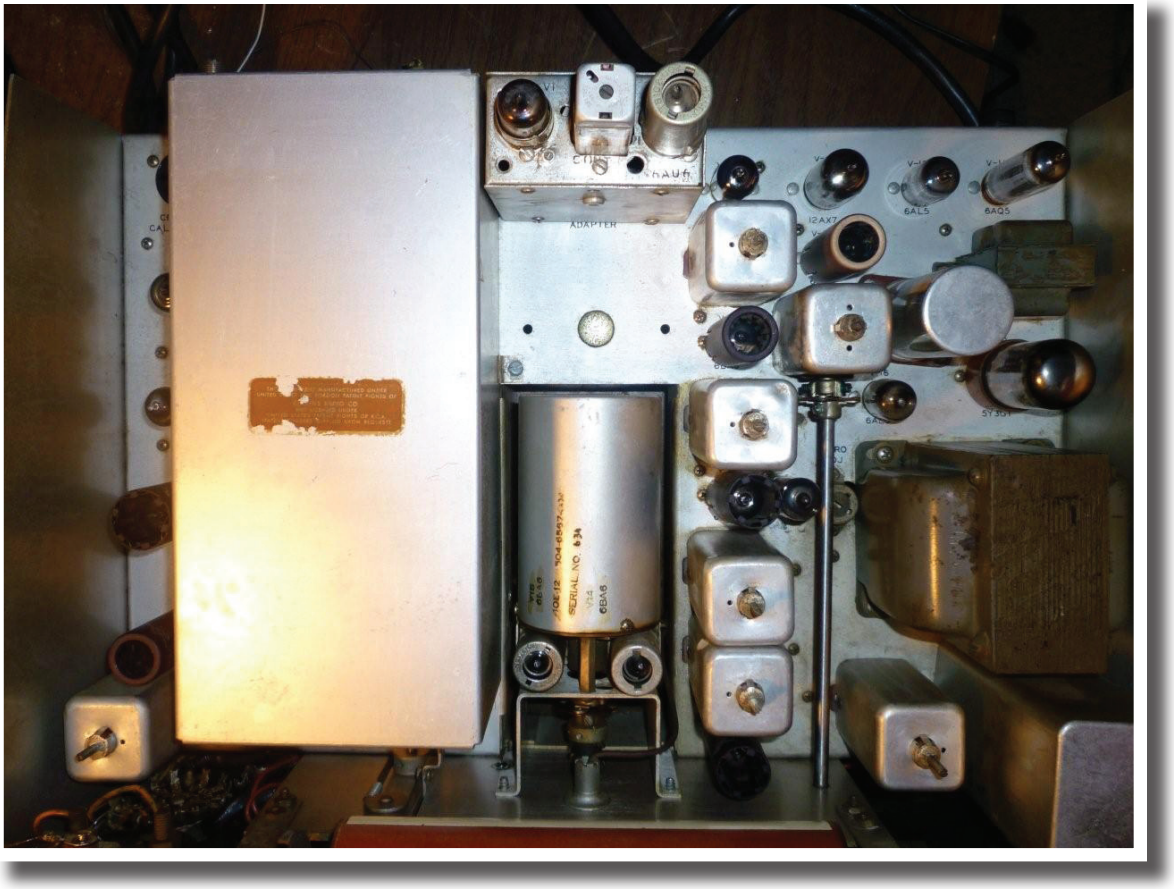
Traditionally, a multi-section variable capacitor was "ganged" to tune the oscillator, antenna, RF and IF stages simultaneously. The Hammarlund receivers used 9 gang capacitors, in an attempt to keep similar bandspread among bands. Collins developed the famous "PTO," for permeability tuned oscillator, for VFO tuning. Instead of using capacitors to tune, the tuning knob moves an iron slug in and out of a coil, thereby changing the inductance of the tuned circuit, which has a fixed capacitor, and thereby the frequency. To tune the other stages, the tuning knob is mechanically connected to a bar that moved other iron slugs in and out of coils, thereby tracking the stages. This gave greatly increased stability and linear tuning rates. The oscillator is crystal controlled, contributing to stable operation.

The 75A1, initially called the 75A, was introduced in 1947. It, too, was an instant success, but a number of improvements were made in the new model. The 160 meter band was added, as was a separate CW noise limiter and an antenna trimmer. Prior to the days of product detectors for

SSB, CW and AM, signals were handled very differently. AVC was only available for AM. On receivers of this era, when the BFO went on, the AVC went off!

The appearance of the receiver was changed, with the multi band tuning dial changed to a drum type, with only one band appearing at a time. The vernier allowed 1 kHz resolution up through 15 meters. This basic design was continued for many years through the 75A3 and 75A4 receivers, and was only changed when the famous "S Line" was introduced, continuing the trend to much smaller radios. It is interesting that the 15 meter band was included. The band was allocated in 1947, but not released for amateur use several years after that.

Another major change was to the "miniature" 7 and 9 pin tubes, replacing the octal tubes in the 75A1. The effective 5 position crystal filter with phasing control was improved, and additional tuned circuits in the 455 kHz IF were added.



For such a sophisticated radio, it has always surprised me that a 100 kHz calibrator was not included, but was merely an option. It wasn't until the 75A4, the ultimate receiver of the 1950s, was introduced that Collins made the calibrator a standard item. Also optional was a narrow band FM adapter. This was a system touted in the early 1950s, but one that never gained favor, probably because of the rise in popularity of sideband. The production run of this fine receiver, though, was only about two years.

In late 1952, the 75A3 made its debut. There were only two differences. One was the introduction of the famous mechanical filter, with a 3 kHz bandwith. A 1 kHz bandwidth filter was available as an option, and was switchable from the front panel if both were installed. The other was the price. The new model commanded $530.

But, those hams with a 75A2 were not left behind! Collins offered an upgrade service. For $125, plus the cost of shipping to Cedar Rapids, Iowa, the factory would add the filter, perform minor repairs, and realign the unit, making it into a new 75A3! The modified receivers were renamed "75A2A."

I don't know how many hams took advantage of this, but I've never seen one.

The unit pictured for this article is fairly new to my collection, and is an outstanding performer. After nearly 60 years, only a few capacitors needed replacement.

Listening to SSB and CW requires the old technique of advancing the audio gain to max, and using the RF gain as a volume control, since there is no AVC with the BFO on. It becomes obvious when listening to an SSB round table with some signals much stronger than others. The stability is nothing short of astounding for such old components. After just a 5 minute warm up, there is virtually no drift at all, and an SSB net can be followed for hours without touching the tuning.

Operating Collins equipment, compared to other well respected equipment of the time, is like driving a Rolls instead of a Ford. They both get you there, but...

Geek Crew!

by Michelle W5NYV

Members of the Palomar Amateur Radio Club can be found in many ways. We're on the air, we're at club meetings, we attend events, and now we're on Facebook.

If you're not familiar with this social media site, it's an extremely popular website that allows people to connect with other people of similar backgrounds, interests, hobbies, and purposes.

Palomar Amateur Radio Club has a group page on Facebook. Membership is open to anyone interested in the club.

Meeting announcements, a discussion area, and a "wall" for people to post messages on are all part of the Facebook group page.

There is also an area to upload photos by and of the members. Above is a photograph submitted to the Facebook PARC page by Jerry Dickinson. What a great looking Crew!

Officers of PARC are recognized with their title on the site, and updates on the Scope and other club activities can be found here. Facebook has many ham radio groups, besides PARC. Some examples are QRP Amateur Radio, Kenwood, various country groups, and DXing and contest groups. Finding additional hams on Facebook, besides people that you already know from your email address book, is straightforward. In the search box, put "amateur radio" in the search box on the upper right. Then, narrow the results to "people" on the left-hand side of the page.

CQ CQ Field Day Chair

by Paul KB5MU

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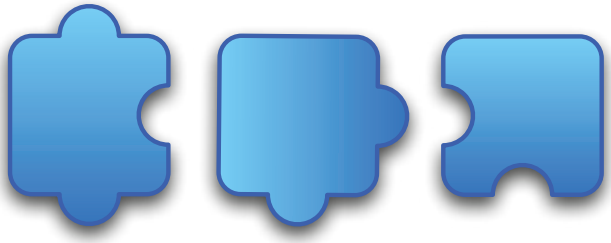

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Arrive at 7:00pm to socialize and help **celebrate our 74th anniversary as a club!**
We look forward to seeing you!

SCOPE

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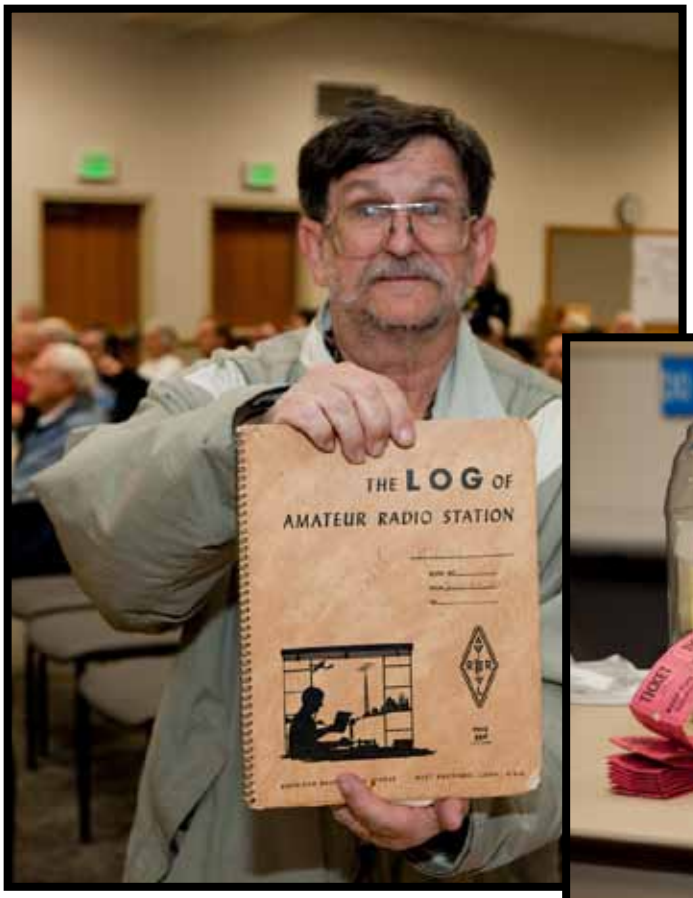
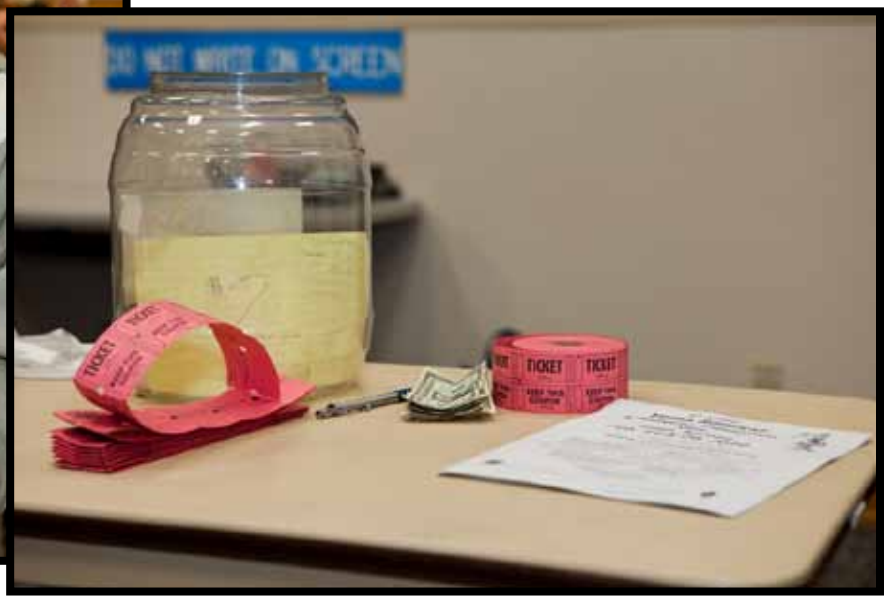


Above, Don Johnson WD6FWE holds up a station logbook.



Bring a few extra dollars for the raffle to the March Meeting. We'll be giving away a 2m 50W mobile radio during the meeting if we meet our ticket sale goal!

Save the Date

Club Meeting
3 March 2010

Robert Langenhuysen PA0RYL explains how a radiotelescope was saved in the Netherlands.

Board Meeting
10 March 2010

Palomar Amateur Radio Club board meeting at 7:00pm at K2RP QTH

AV4DX Meeting
April 24, 2010

North Sentinel Island DXpedition Meeting 3:00pm Carmel Valley Recreational Center

March Program

by Robert Langenhuysen W0SDR, PA0SDR

Radioastronomy is the ultimate form of DX imaginable. Weak radiosignals originating millions of lightyears away are bombarding the earth continuously but only the most sensitive antenna's and radio equipment are able to detect these signals.
Radioastronomy is a rather new science where radioamateurs have played a major role. Even until the day of today, one can find many radioamateurs amongst the modern radioastronomers.
In the last 5 years amateurs have been very active in salvaging the historical 75 feet parabolic dish in Dwingeloo the Netherlands. This is oldest steerable parabolic dish antenna of this size in the whole world.
This dish was built in the 1950s as the result of the intriguing work of Grote Reber (W9GFZ) who was probably the only practicing radioastronomer for nearly 10 years at the end of the 1930s.
C.A. Muller (PA0CAM s.k.) was one of the driving forces behind the use of the Dwingeloo dish for radioastronomy in the first 40 years of its existence.
Thanks to the help of volunteers (90% of them active radioamateurs) the dish is in the process of restoration and can already produce very strong EME signals from 23 cm up to 6 cm. The dish also allows amateur radioastronomers to live usage of the dish as a radioastronomy detector by means of the internet.

Robert Langenhuysen W 0 S D R / P A 0 S D R (pictured at left) will give a presentation on this unique dish at the March PARC General Meeting.

Membership

New Members Joining PARC:
KJ6CLS, KJ6DYE, KI6GZK, WA1QMI. In addition, we had 7 returning members, reinstating their membership. WAY TO GO!! Please be sure to welcome the new and old returning members.

Please use the firms that support the club, and mention that you saw their advertisements in the newsletter.

And, here is the list of those that receive their SCOPE on the web, who may not realize that their membership has expired. KI6JEX, W6MBM, NO8RF, K6DAF, K6ROY, K6PPG, and W3LFR. Please renew!
Check your label for your renewal date. If your mailed SCOPE didn't arrive, and you are reading this on the web site as a fall back, maybe your membership ran out?? We do great on attracting "New Members", but not so great on the renewals! The club really needs all its members!!

Al
W6GNI

Fold and Staple - WA5ACE Sonny, KB6NMK Jo, W6GNI Al & Kathy, KB6YHZ Art & Janet

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

Classified ads are free for members of the club.

For Reasonable Donation To The Club
The following items are offered.
Swan 500 HF Transceiver with Power Supply, cables, and manual. Works well, but meter sticky. Needs cleaning.

Kenwood TS 520 HF Transceiver. Internal Power supply. Power cable, mike. No manual (available for download on internet.)
Works well in the top 200-500 kHz segment of band, unstable from 0-200. Needs thorough cleaning of VFO. Can be used as-is for most of phone portion.

Ameritron Remote Antenna Switch Model RCS 8V. This allows one feedline for 5 antennas on your tower. This is brand new in the box, and current production. New price is $170.

There will be lots of smaller goodies on the table next meeting

Wild Bill and Ellen

February Meeting Program

Summary by W5NYV, photos by Paul KB5MU

Wild Bill and Ellen narrated their many photographs from their recent trip to Jersey Island at the February PARC membership meeting. The CQ WorldWide (CQWW) contest is held during the last full weekend in October. For the contest, the team, which included Bill WB6BFG, Ellen N6UWW,

N6AA, N6VI, W6XD, W6NV, AB6BH, OH1VR, OH2KI, and W6XD's YL. had a successful "Suitcase DXpedition". Jersey Island, part of the UK, is in CQ zone 14. The operating site was a World War II signal tower with three feet thick walls and doorways five and a half feet tall. The tower was build by the Todt Soldiers as part of the Atlantic Wall and was meant to last all 1000 years of the Third Reich.

Jersey Island is part of the Channel Islands. On a map, it can be found close to France. Full-size yagis and wire antennas for the low bands were brought along on the DXpedition. Once at the station, which is a club station of Jersey Amateur Radio Society (JARS), the team tore it apart, installed antennas in between dodging rain and enjoying rainbows, and then got to work.

Laptops and K3s were the instruments of choice for the DXpedition. 40m was alive day and night. The team ended the contest with 7,018,488 points in 48 hours, which was down about 2,000,000 points from last year's DXpedition to Honduras.

Questions from the attentive audience (kept awake by loud bursts of static from the wireless microphones) were "How bad were conditions for the East Coast?" and "How did you like the K3?" Wild Bill and Ellen explained that while conditions were great to the East Cost of the United Stations, the West Coast was opened very rarely. The "usual suspect" big gun stations with stacked beams at 130ft got through, but no one else was heard.

At the end of the contest, the station was restored to better condition than when they found it, and Wild Bill and Ellen departed for a tour of London. They visited the prime meridian at the Royal Observatory, had tickets for an Elton John concert and actually saw ZZ Top in concert, experienced Halloween in Dublin, Ireland, partied with some crazy Scots, and made it back home in first class due to some low friends in high places. Thank you Wild Bill and Ellen for a great presentation to the club!

December Board of Directors Meeting Minutes

The meeting was called to order at 7:07 PM by President Dennis Baca KD6TUJ. The meeting was held at the home of Al Donlevy W6GNI.

Treasurer's Report

Georgia – KI6LAV presented the November Treasurer's report – Total Assets $12,187.49, Total Liabilities are $5656.00. A motion was made by KB5MU to accept the treasurer's report, seconded by KG6JEI. Approved.

Secretary's Report

Gary- W6GDK presented the November Secretary report prepared by Loren Hunt- AD6ZJ, the outgoing secretary. Moved to accept by KI6LAV, second by KB5MU Approved.

General Meeting

January meeting will be Monica Zech.

Membership Report

Presented by Al W6GNI- Current membership is 288, with 114 non-renewals in 2009. Al proposed sending a Renewal letter to all non renewals. It was also suggested that we setup the website to allow payment of dues by Paypal.

Repeater Site/Technical Report

Considerable work was done at the repeater site to the power supplies and batteries. Much remains to be done. Need at large 13.8 VDC supply also.

Discussion items:

An expense item to RF Parts for repeater site materials was discussed by KI6LAV- mostly how to post the expense.

Liability insurance of $340.00 is due January 10, 2010. Motion to pay made by K2RP, second by KB5MU Approved

Appears to be an issue with the PA on the 147.13 machine causing static on the 147.075 repeater.

Meetings – February is the 74th anniversary

April might be contesting 101 by N6KI
Several ideas for future meetings were discussed.

Packet monitoring of the packet repeater to determine usage has been started.

OLD Business

Generator – propane conversion of the generator is still needed. Paul noted we need to think about a completely remotable generator system so it can be started automatically or remotely if access to the mountain is restricted. No motions.

Upcoming General Meeting Topics

March "How a Radiotelescope was Saved"
Month TBD - Lin Robertson KJ6EF – Vintage broadcast radios
Month TBD - KC6YSO – AM and other boat anchors
Month TBD - AK6QJ – Subject TBD
Month TBD – Ed Zeranski KG6UTS – Military radios

Board Members Attending December Meeting

President Dennis Baca KD6TUJ
Vice President Ron Pollack K2RP
Secretary Gary Kent W6GDK
Treasurer Georgia Smith KI6LAV
Director #1 Paul Williamson KB5MU
Director #2 Conrad Lara KG6JEI
Membership Al Donlevy W6GNI
Scope Editor Michelle Thompson W5NYV
Repeater technical chair Mike Pennington K6MRP

February Membership Meeting Photographs

Top row, Wild Bill WB6BFG expounds on the DXpedition to Jersey Island. Middle two photos are Loren AD6ZJ practicing for the QLF contest to be held at the August picnic, and Dennis N6KI telling us to forget about it. Bottom photo is Ron N6XT with coffee, heading over to the goodie table. Coffee provided at every meeting, thanks to Jim W6SST. Photos by KB5MU.

Goodie Tables!

Above and left, 74th anniversary Capacitor Cupcakes were on the goodie table, along with cookies. The blue cupcakes were made with white cake cupcake mix, and blue fondant icing over a layer of white buttercream. 74 was painted on with black icing. The W5NYV household enjoyed baking them.

When will Conrad's brownies be seen again? Inquiring minds and impatient taste buds want to know.

Below and below left, items and people visit the other goodie table, across the room from the food and coffee. Here is where items are available for any reasonable donation to the club. Typical items include books, parts, chassis assemblies, magazines, components, and occasionally tools and complete systesm. Bottom left corner - that's me, W5NYV. Photos by KB5MU.

San Diego City Antenna Ordinance Update and Call For Action
Following is the introduction from http://sddxc.org/tower/

"Thank you for taking an interest in the City of San Diego's proposed ordinance to create an overly restrictive, expensive and burdensome process which will effectively quash the efforts of many amateur radio operators from doing what they are licensed to do by the FCC.

The current form of the ordinance restricts antennas to 40.5' in about 50% of the most populated portions of the city, and 70' elsewhere, unless a ham is willing to deposit $8,000 plus countless thousands more in fees, costs and additional deposits (there is no limit). The ordinance is vague enough that the city can potentially choose to restrict towers altogether in certain planned districts in the future – though, at least for now, that is not the case. Perhaps worse yet, the city can require the ham to obtain expensive expert studies, without any limitations, and undergo countless community planning group presentations, only to have a final decision conditioned to make construction prohibitively expensive. And if that's not bad enough, there is no guarantee of approval, which can mean tremendous losses of time and money, with only the hope of getting a court to overturn the city's decision (again, at great cost to the ham).

We ask that you review the time line on the DX Club website at http://sddxc.org/tower/. Please read the documents submitted and the city's ordinance and negative declaration, so you can understand how awful the situation really is.

But don't lose hope just yet – you can help! We ask that you write to council members and the Mayor (jerrysanders@sandiego.gov), and show up to public hearings to fight the good fight with us. If we don't succeed now our options will be limited – an expensive court battle or living with a bad law costing individual hams ungodly sums of money. Neither choice is attractive!"

As a property owner, tenant, or person who has requested notice, you should know that the Planning Commission will hold a public hearing to recommend approval, conditional approval, or denial to the City Council of proposed Amateur Radio Communication Amendments to the Municipal Code and Local Coastal Program that would amend Land Development Code Chapter 11, Article 3; Chapter 12, Articles 6 and 9; Chapter 13, Article 1; Chapter 14, Article 1; and Chapter 15, Articles 1 and 5. Amateur radio communication is a legally protected form of communication that can be beneficial for emergency response and disaster preparedness. The amendments would clarify that communication by licensed amateur radio operators is a permitted land use in zones citywide. The amendments would also clarify the applicable height and placement criteria that apply to minimize negative impacts of associated amateur radio antenna structures, and the

available discretionary permit process to request special height or placement accommodations to achieve effective communication. The proposed Amateur Radio Communication Amendments are subject to Process 5.

Please consider attending the hearing. Making your presence felt is a vital part of the process of lawmaking. The proposed ordinance will affect you.

Notice of Public Hearing and Notice of Availability Planning Commission Recommendation

DATE OF HEARING: February 25, 2010
TIME OF HEARING: 9:00am
LOCATION OF HEARING: Council Chambers, 12th Floor, City Administration Building, 202 C Street, San Diego, California

PROJECT TYPE: Process 5 Amendments to Municipal Code/Local Coastal Program
PROJECT NAME: Amateur Radio Communication: Amendments to Land Development Code and Local Coastal Program

APPLICANT: City of San Diego, Development Services Department
COMMUNITY PLAN AREA: citywide
COUNCIL DISTRICT: citywide
CITY PROJECT MANAGER: Amanda Lee, Senior Planner
PHONE NUMBER: (619) 446-5367

The proposed amendments would allow amateur radio antennas to exceed the maximum zoning height by 35 percent or up to 70 feet above grade, whichever is less, through a staff level decision (Process 1); except in the Coastal Height Limit Overlay Zone, Clairemont Mesa Height Limit Overlay Zone, Planned Districts, and Historical Districts/sites containing historical resources, where the maximum height of the applicable zone would apply to ministerial antenna requests. Citywide, antenna placement would be required to meet the setback standards of the applicable base zone, and may not encroach into environmentally sensitive lands, or into a designated public access way or public view corridor identified in an adopted land use plan, unless such placement met the deviation requirements discussed below.
The proposal would allow for site specific deviations to be requested citywide with a Neighborhood Development Permit (Process 2) to allow for effective communication by reasonably accommodating amateur radio communication in accordance with State and Federal law.

The decision to approve, conditionally approve, modify or deny the Amateur Radio Communication Amendments will be made by the City Council at a public hearing.

Panorama stitched together on site in camera at the December 2009 membership meeting by Don Johnson WD6FWE.

Club Survey

Please Complete and send to scope@palomararc.org

I work: (circle as many as apply)
HF 6m 2m and up ATV satellite

other:

I would like to work: (circle as many as apply)
HF 6m 2m and up ATV satellite

other:

I would like to learn about...
Programs I would like to see are...
I enjoyed programs either about or by...
How can PARC and it's members help you?
Is there something you can offer to help PARC?
What do like about PARC?

OPTIONAL
Your name, call, and contact information and preferences, in order to continue the conversation.

Thank you!

Greetings from AD6ZJ, Loren

Many of you know me as the past PARC secretary. Others may have seen me do a presentation. Today I find myself in a new role for the club. After seeing the Repeater Technical chair position go vacant for over a year I decided to accept the position when Dennis KD6TUJ (our pres) asked me in January. Not that I am an expert on repeaters, far from it. I am just a club member willing to step in and learn as I go. There are actually several important club positions that could be filled with the same willingness by club members with a willingness to learn (the Repeater Site chair or the Field Day Chair for example). Since I have an engineering background I figured I would tackle the technical chair post. Others will need to step up for the other vacant positions. Since I don't know what I am doing and not having an abundance of spare time I naturally will be asking the assistance of others. WB6IQS (John) and KC6UQH (Art) and others have already started the process of getting me up to speed. I had no idea how much they did for the club until I started getting involved myself.

It would be great to put together teams of experts and beginners to accomplish the technical tasks needed on the repeater site. Please consider joining the list of those willing to get involved. If you're an expert your input and time will be much appreciated. If you don't have a clue about repeaters but want to help, we will learn together. If you don't have a clue about electronics but want to learn, we can help. There are club members (myself included) who would be happy to share what we know.

So what will we try to accomplish this year? We actually have several tasks underway that can use additional work and then we have projects not even started and others not yet on any list that we might want to tackle. Of course we also have the job of repairing the repeaters when they go down. Here is what we have going on right now.

Power Supply upgrades – We are in the process of converting our aging inefficient power supplies with modern 48VDC to 13.8VDC DC to DC converters. We have already upgraded the voice repeater power supplies and need to upgrade the Packet repeater supplies. Our former Site Chair K6MRP (Mike) did an outstanding job running the 48VDC from the battery room to each Repeater room so all that remains is swapping out a few more supplies. Currently all of the newly installed power supplies are just sitting next to each repeater and these need to be mounted on plates. With all the repeaters running directly off battery power we need a new way to monitor when there is a power failure (has anyone noticed a lack of the "/P" from time to time? Now when there is a power failure the repeaters just go on working with no relays to switch to restore power. This all works until the batteries run down and then nothing would work. We need to create a voltage monitor so that a generator can be switched in when during an extended grid failure and in the event of a generator failure we need to shut off the less used repeaters to conserve battery life for the repeaters in constant use. To shut off what is not needed we should be using a radio link for remote shutoff but the link we had is not adequate for our needs and a new one needs to be designed.

Power Amplifier upgrade – The power amp in one of our repeaters has a few issues causing it to put out more power than needed. Nothing wrong with a little more power you say? Well, as it turns out this extra power causes some inter-modulation mixing between repeaters (sometimes heard on the 147.130 machine). So a new amp is nearly complete but needs an attenuator built and a full test. Then it needs to go up the hill and get installed. The installation will not be a drop in replacement but rather will require a little thought during installation.

ATV Repeater restoration – The PARC ATV repeater is currently down and there is a debate over just what form it will take when it goes back up. Art may need some assistance in getting it back together and at some point it will need to be reinstalled at the site.

Repeater spare parts inventory – The repeaters at the PARC site are older units that need some work from time to time. The older units are actually better because you can work on them and fix them without exotic components. We have a supply of extra boards for these units. They need to be tested and those found bad need to be repaired. The tested good boards will then get inventoried at the repeater site for when a repeater goes down allowing the down time to be lessened.

Packet Stuff – Some think packet is dead, others use it every week. We have three packet machines for various purposes but not getting much use. Maybe there are better ways to utilize them.

New technology – There are various ideas people have had about putting some new mode into service. As time permits we will look into the practicality of implementing some new technology. Do you have any ideas?

Did you catch it? There is a whole list of little and not so little tasks just from this short list. Can you handle hooking up power supplies or mounting them? Maybe you have what it takes to design a voltage monitor or a remote shutoff controller. Maybe you have some skills in TV land and would like to learn about ATV. The point is there are many things that need to get done. With just a few doing the work (in our spare time) the list will be ever growing. On the other hand, with a small team of willing club members things can get accomplished and we can all learn and grow in the process.

Please consider joining me in keeping our repeaters in top form. If interested or if you just want to know more please email me at AD6ZJ@ARRL.net.

73, AD6ZJ, Loren

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Editor: Michelle Thompson W5NYV
Submissions: scope@palomararc.org
Questions? Ideas? Comments? W6NWG@amsat.org

Featured Program:

Robert Langenhuysen, who holds the ham radio call sign PA0RYL in his home country of the Netherlands and W0SDR in the United States, is in San Diego for a couple of months. He has graciously agreed to tell us the story about how he and a number of other ham radio operators in the Netherlands saved the oldest steerable radiotelescope in the world from demolition. They converted it to a station that bounces signals off the moon and use it for amateur radioastronomy. This promises to be an unusual and memorable program!

Here is Robert's description of his program:

> "In the Netherlands I have brought together a large number of hams and other volunteers to save the oldest steerable 100-foot radiotelescope in the world from being demolished. Over the past years, this resulted in the radiotelescope being converted into a fully operational EME (moonbounce) station that can be active on all ham bands from 23 cm up to 6 cm. Moreover, it can also be used by anyone that is interested in amateur radioastronomy. It can even be used over the internet. More information on that can be found on http://www.camras.nl."

Palomar Amateur Radio Club meets the first Wednesday of the month at Carlsbad Safety Center, 2560 Orion Way. Room opens at 7:00 pm. Program starts at 7:30 pm. Visitors are welcome. Coffee and light refreshments will be served.

Interesting Dial Photo by KB5MU

SCOPE

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

Special Club Event
OPERATING DAY
APRIL 18, 2010

DOUBLE PEAK PARK

900 Double Peak Drive
San Marcos
9:00 AM to 5:00 PM

Hosted by
PALOMAR AMATEUR RADIO CLUB
www.palomararc.org

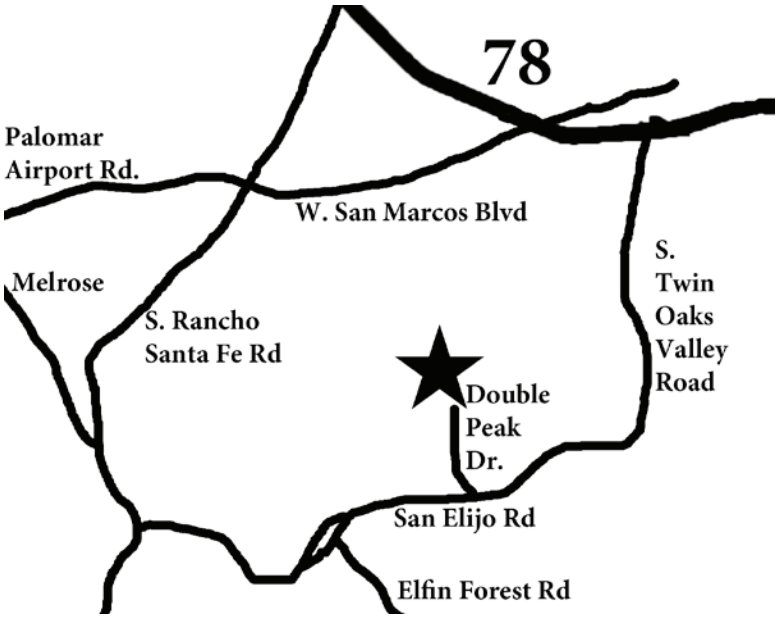
Contact Ron K2RP (760) 436-8109

Come operate on the ham bands at the park above it all during "Rookie Roundup" weekend.

Sweeping 360° views.
Picnic area and basic facilities.

Cecil, WD6FZA will demonstrate D*STAR

70cm, 2m, 6m, 10m, 15m, 20m



Save the Date

Club Meeting
7 April 2010

"Contesting 101" Program at 7:30pm.

Ears Auction 8 April 2010

Board Meeting
14 April 2010

Palomar Amateur Radio Club board meeting at 7:00pm at K2RP QTH

AV4DX Meeting
April 24, 2010

North Sentinel Island DXpedition Meeting 3:00pm Carmel Valley Recreational Center

Membership

New Members Joining PARC since Feb 11, 2010 - - - 0 - - - None, Zip!!
However, Five past members reinstated their membership.
Of course we welcome all members, new and "old", especially "new" old timers.

Please check your SCOPE label for your renewal date. If you are receiving the SCOPE by Web, please remember your renewal date, or drop by the membership table at the meetings to find out your renewal time. As a memory jogger, we are publishing the calls of the SCOPE by WEB folks as a reminder to please - please renew.
COME ON GUYS and GALS - Look at this list of non or late renewals from members (In Feb and March only). KI6JEX, W6MBM, NO8RF, K6DAF, K6ROY, K6PPG, K6BK, AF6IS, AF6UL, KI6LKP, AA6PC, and KI6FOO. The club cannot exist for the next 70 years if this doesn't improve!! P.O. Box 73 awaits you!

Al, W6GNI

Fold and Staple - PARC SCOPE fold-'n-staple party for the March Scope was busted by police for excessive noise. "We were just having fun," claimed Terri N6UZH. March Issue Fold & Staple Crew KB6NMK Jo, WA5ACE Sonny, KB6YHZ Art & Janet, W6GNI Al & Kathy, KI6LAV Georgia & Florence

Greetings to all members and readers of the Scope! I'm happy to present another issue of the club newsletter.

A special announcement is in order - the Escondido Amateur Radio Society annual auction is April 8th. Please see their website for details at

http://www.earsclub.org/

There is a rumor going around that this issue of the Scope has some foolishness. I would like to take this opportunity to squash that rumor into the little tiny bug parts that it would resemble, if it were, say, some sort of funny insect.

There are absolutely, positively, no "funnies" in this issue of the Scope. We take our job here at Scope Headquarters very seriously. We have zero sense of humor. None. Zip. Nada. Null. Not even the slightest bit.

We eat our vegetables. We do our homework. We do not engage in "funny business", nor do we tolerate any of that on the part of our august and entirely reasonable (and boring) staff of expert amateur radio writers.

Please send questions, comments, and articles (funny ideas welcome) to Scope@palomararc.org

Yours, -Michelle W5NYV

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

Classified ads are free for members of the club.

For Sale: HUSTLER 6BTV High Performance HF Verticle Antenna system, 80/75/40/30/20/15/10 m, complete with 250ft spool 14 ga wire and all precut radials, SS Tilt base and SS Radial plate. Used one year. Bought new at $400, will sell for $200. contact: Rich Ortloff KE6DUG 760-861-1406

For Reasonable Donation To The Club
The following items are offered.
Swan 500 HF Transceiver with Power Supply, cables, and manual. Works well, but meter sticky. Needs cleaning.

Kenwood TS 520 HF Transceiver. Internal Power supply. Power cable, mike. No manual (available for download on internet.) Works well in the top 200-500 kHz segment of band, unstable from 0-200. Needs thorough cleaning of VFO. Can be used as-is for most of phone portion.
Contact board@palomararc.org

There will be lots of smaller goodies on the table next meeting.

For Sale: Multiband rotatable Vertical antenna. When attached to a suitable rotor this antenna is able to instantaneously move in such a way to offer equal gain in any direction you like. This antenna stands only 8 feet and yet works from 30m down to 160m. Amazingly the gain on 160M is a whopping -128dB! The rotor acts as virtual radials so installation is a breeze. Please contact NN1APR, A.R. Foolery if interested.

New Morse Code
Well Received in PARC

by Robert Freeburn

PARC members enjoyed the Club's first training session on the New Morse Code which will be phased-in beginning with selected ARRL CW contests in April 2010. In a departure from the Old Morse Code's two-length tone format ("di-dah"), the New Morse Code adds a middle-length tone to feature tones of three lengths ("di-dee-dah").

By using three tones, the New Morse Code eliminates the need for five-tone numbers and punctuation, and is compatible with the Arabic Morse code heard often on DX bands.

Another significant advantage is that New Morse

Photo by Wallie The Frog,
from his collection at http://www.flickr.com/photos/walliethefrog/

Code can be used to rapidly exchange coded solutions to Rubik's Cube puzzles. The three tones correspond to the three-by-three arrangement of the puzzle. When the cube is held with the correct polarity, and the code is properly copied, then the cube can be solved.

Depending on the initial arrangement of the puzzle, the solution can take only hours to solve (depending on propagation, of course).

Upcoming General Meeting Topics
April 2010 Dennis N6KI John K6AM "Introduction to Contesting"
May 2010 Ed Zeranski KG6UTS Military radios
June 2010 "Field Day"
Month TBD - Lin Robertson KJ6EF – Vintage broadcast radios
Month TBD David Doan KC6YSO "AM and other boat anchors"
Month TBD - AK6QJ – Subject TBD

First Place for RACES
San Diego Wins Major Award

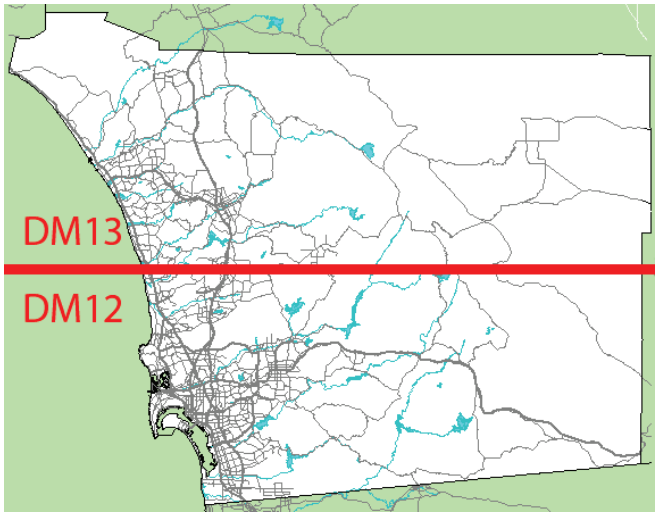
by Robert Freeburn

San Diego's Radio Amateur Civil Emergency Service (RACES) bagpiper marching band won first place trophies for music, marching precision, and QSL point total at the Angus MacDonald Memorial Western Regional Championship held in Pleasanton, CA last month. According to Bandleader Andrew Campbell, the greatest challenge was overcoming intermodulation interference during close-order formation drills. Assistant Bandleader Katie Graham extends her thanks to PARC members who helped model antenna radiation patterns from bagpipe radio rigs. Says Katie, "With minor marching formation, drone, and transmitter phase adjustments, we witnessed 9 dB improvement in the direction of travel."

Ham-on-Ham Violence Rising

by Robert Freeburn

The San Diego Regional Gang Task Force is investigating increased ham-on-ham violence reported in Central San Diego County along the Maidenhead DM12-DM13 demarcation line which runs east-west through Encinitas, Poway, and Borrego Springs.



Tensions between rival DM12 and DM13 gangs increased after SANDARC-moderated talks held at Ham Radio Outlet (HRO) deep in DM12 territory on Sunday, February 14 broke down. Talks were cordial for several hours despite haughty DM13 representatives claiming superior, uptown status based on the number 13 being larger and closer to the date of the talks: 14. Talks were shattered when someone looked at a calendar and realized it was Valentine's Day, and no one present had yet taken care of his XYL.

February Board of Directors Meeting Minutes

The meeting was called to order at 7:13 PM by President Dennis Baca KD6TUJ. The meeting was held at the home of Ron Pollack K2RP. Present at the meeting were:

President Dennis Baca KD6TUJ
Vice President Ron Pollack K2RP
Secretary Gary Kent W6GDK
Director #1 Paul Williamson KB5MU
Director #2 Conrad Lara KG6JEI
Membership Al Donlevy W6GNI
Scope Editor Michelle Thompson W5NYV

Treasurer's Report The treasurer's report was given by KD6TUJ in KI6LAV's absence. Total assets were $11,886.22, Total Liabilities are $5,369.00. Motion to approve by K2RP, second by KB5MU. Approved

Secretary's Report- Minutes of the January meeting were presented by W6GDK. Motion to approve by W6GNI, second by K2RP. Approved

General Meeting: PA0RYL will give a program on the Dwingeloo 75 foot dish in the Netherlands that is used for EME.

Membership Report: Presented by Al W6GNI – 292 members currently.

Repeater Site/Technical Report: Mike K6MRP resigned as repeater site chairman. The site appears to be in good shape after the weather in January.

Discussion items:
Program ideas include a program on military radios, Introduction to Contesting. Additional ideas to be developed are antenna modeling and doing broadband with a wireless router.

ATV proposal. It was discussed that we should retain our current coordination for ATV frequencies.

Tube Bank – Ron is picking up a garage full of tubes. Should the tube bank spreadsheet be on the Website?

Field Day Still need a FD chairman, and looking for sites, particularly in the I5 region.

OLD Business:

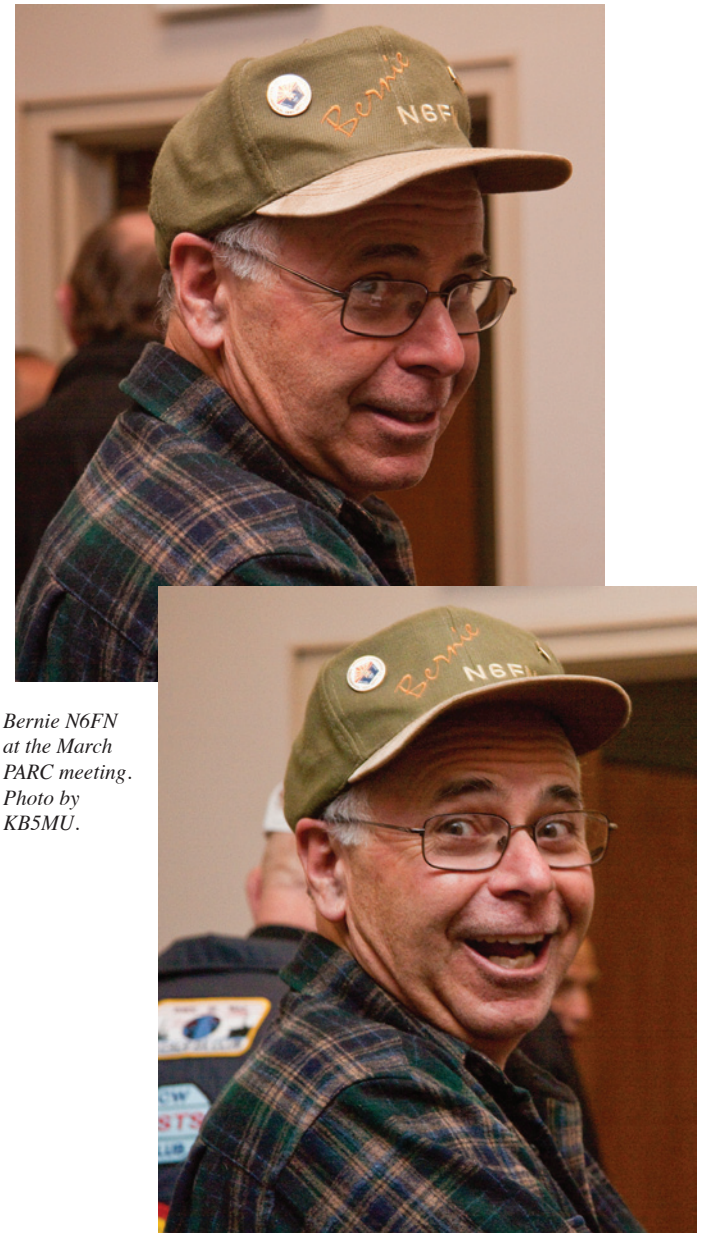
NEW Business:
K2RP noted that we have gotten 3 estates in the last 2 weeks with a total of $350.00 committed by potential buyers.

HF Intro. It was decided to hold the HF introduction at a San Marcos Park (Double Peak Park) on April 18th . We will setup a tower and generator and have HF Demonstrations.

N6KI wants a 30 year old HamIV and is willing to pay $200.00 We informally agreed to this arrangement

Place of next Board Meeting: Home of Ron Pollack K2RP on March 10, 2010 at 7:00 PM

Motion to adjourn at 8:45PM by W6GDK, second by KG6JEI. Approved

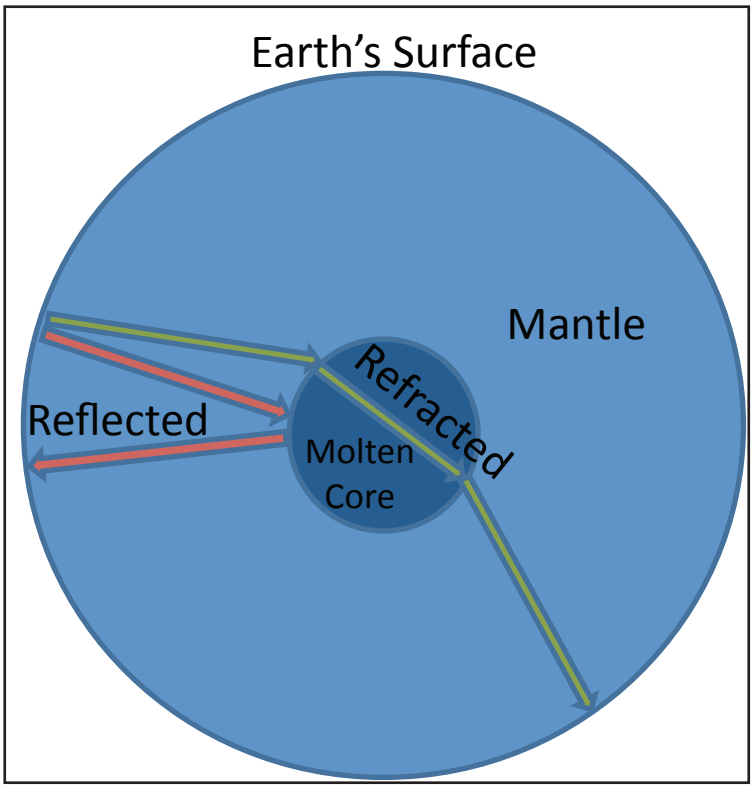


Bernie N6FN at the March PARC meeting. Photo by KB5MU.

EMC Communications

Rob Freeburn KI6PGI, Paul KB5MU

Have you tried EMC propagation yet? It's the ideal mode if your homeowners' association won't let you use an above-ground antenna. EMC stands for Earth's Molten Core; EMC propagation takes advantage of the highly-conductive iron core at the center of our planet. As shown in the figure below, there are two main EMC modes available.



EMC-Reflected, also known as NVIU (near vertical incidence underground wave), relies on reflection from the core and is best for relatively local communications, within your own tectonic zone. EMC-Refracted, also known as "shortcut path", refracts your signal through the core and is best for DX. Propagation prediction software is available now for CP/M and iPad.

The photo shows the installation of an experimental EMC antenna. Because of the need to match the antenna's radiation resistance to the impedance of the earth's crust, EMC antennas must be buried underground. A common trick is to remove a large tree and couple the EMC antenna to its root system. If possible, choose a tree that has been struck by lightning. This can increase underground radiation efficiency dramatically at little additional cost, since the tree must be removed anyway. In this area, where both trees and lightning are in short supply, an alternative approach is being tested based on water-well drilling techniques. Preliminary results are encouraging, but the heavy equipment required does tend to upset the neighbors.

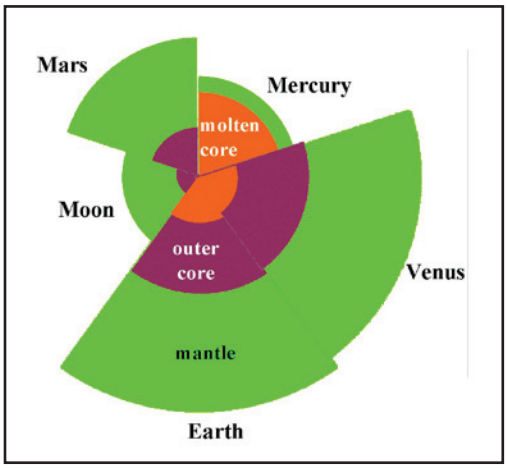
EMC propagation prediction software is available for download and beta testing. The software relies upon a combination of whale song identification techniques and a series of databases from dowsers. The combination accurately predicts EMC propagation successfully 73% of the time.

The FCC is considering opening new EMC experimental bands for Amateurs.

The IARU is currently discussing a tectonic plate based overlay for dividing EMC zones. It's expected that these zones would provide the basis for an entire new system of contesting.

Our April program will introduce the basics of contesting. While EMC is considered an advanced technique, and won't be discussed during the program, we'll be paying close attention to this new mode for future contesting and PARC programs.

Finally, as can be seen in the diagram below, the moon does not have a molten core. This means that EME enthusiasts, contrary to popular belief, will not be able to duplicate the EMC mode with their large installations.



Smart Meter at KB5MU

by Paul KB5MU

On March 8, SDG&E dropped by my home in Carmel Valley and replaced my old mechanical electric meter with a new "smart meter" -- a microprocessor-based device capable of reporting its measurements remotely, by radio.

This type of meter has been accused of causing radio interference on VHF and UHF frequencies, so my first thought was to check it for spurious emissions. I grabbed my Yaesu VX-8R handheld and held its antenna up against the front face of the meter while scanning through the 2m, 1.25m, and 70cm bands. I recorded the S-meter reading at each frequency where the signal was strong enough to break squelch.

144.000	1■■■5
145.145	1
145.750	1
146.550	1■■■
146.800	1■■■5■■■9+
147.050	1■■■5
147.450	1■■■
222.040	1
440.150	1■■■5■■■9
440.405	1■■■5■■■9+
440.655	1
442.010	1■■■5■■■9+
442.360	1■■■5■
444.345	1■■■5■■■9
444.595	1■■■5■■■9
444.850	1■■■5■■■
448.540	1■■■5■■■9
448.790	1■■■5■■■9+
449.045	1■■■5■■■

Remember, these measurements are taken with the antenna right up against the meter, so even a relatively high S-meter reading might not signify any practical problem. I tuned to the strongest signal, on 448.790 MHz, and walked away from the meter until the signal was too weak to break squelch. The range was about 20 feet. This is still a pretty weak signal, not likely to cause any real harmful interference.

According to the FCC filings, this smart meter contains two complete radio systems. One works in the 900 MHz band in either on-off-keyed (OOK) or frequency-shift-keyed (FSK) mode, frequency-hopped. This is a two-way link that will be used to connect the meter back to SDG&E. The other radio complies with the ZigBee standard for very low-power (1 milliwatt), short-range, direct-sequence spread spectrum OQPSK communications in the 2.4 GHz band. According to the manufacturer's literature, the ZigBee radio is intended to "provide a built-in communications pathway to the home for data presentation, load control and demand response." In addition, the meter has an ANSI Type 2 Optical Port, a two-way infrared interface for local meter reading. Last but not least, it has a nice multifunction LCD that cycles through displays of various measurements. In the photo, the LCD is shown with all segments active, presumably to allow the technician to diagnose display failures.

SDG&E's door hang tag says, "Eventually we'll be able to read your energy usage information remotely but for now, an SDG&E meter reader will continue to read your meter." This would seem to mean that the radio capabilities of the smart meters have yet to be activated. The VHF and UHF emissions I detected may be coming from local oscillators in the dormant radio equipment, or (perhaps more likely) from harmonics of clock oscillators in the digital microprocessor circuitry.

If this smart meter is typical, it doesn't look like we need to worry too much about this kind of continuous unintentional radiation. When SDG&E graces your house with a smart meter, it might be a good idea to test yours, too. It's always possible that some meters will be noisier than others. It will also be very interesting to see what happens when SDG&E finally activates all that radio equipment all over town.

I also learned something about how my 18"-long multiband whip antenna works on the various bands, in the near field. On 2m the maximum sensitivity is near the tip of the antenna. On 70cm, the maximum sensitivity is about a third of the way up the whip, just below where the whip narrows down slightly. This makes perfect sense if the antenna is working as a quarter wave on each band.

Ron's Restoration Radio

So I got (or found!) this old tube type radio. What do I do now?

by Ron K2RP

During the past number of years, I've been fortunate enough to acquire a number of "boatanchor" transmitters, receivers, and transceivers from the vacuum tube era. There are loads of them in existence, and I'm often asked for advice on what to do when one of these turns up. Here are a few general tips. I assume that some basic test equipment is available.

First, and by far foremost, for those who have never worked on tube type equipment, keep this in mind:

> HIGH VOLTAGES ARE PRESENT THROUGHOUT THESE UNITS. THESE VOLTAGES ARE OF A POTENTIALLY LETHAL LEVEL!

More on how to deal with this later, but keep it in mind every minute while you're working on a live piece of equipment.

When you get your new treasure home, examine it to see what you have, and note any obvious missing tubes, knobs or other parts. See if there are any obvious modifications. I like to photograph the unit with a digital camera from all angles. WARNING: Don't plug it in and turn it on! Irreparable damage may be done. Of course, if you know for sure that this piece of equipment has been in recent use, you may want to try. I still do some basic tests. More later.

Next, see if there are any manuals, schematics, calibration charts, or other documentation available. If not, there are several sources for these.

The easiest and least expensive (read that "free") source is on the internet. The BAMA (Boat Anchor Manual Archive) site is sometimes hard to use, but the "mirror" site is

http://bama.edebris.com/manuals/

which is "user friendly." There are thousands of manuals available for download.

If yours is not listed, there are a number of private companies who offer reprints of manuals for sale at reasonable prices. Some that I have used are Radio Reprints (radioreprints.com) and Vintage Manuals, Inc (vintagemanuals.com). There are always dozens of original and repro manuals available on eBay, as well.

Heathkit manuals have become a category of their own, however. The original Heath Company is still in existence, although not in the electronics business. They recently sold their archive of manuals, with, ostensibly, the copyrights to them, to a company in Pleasanton. They notified BAMA and others of their objection to posting the manuals on the internet. There is a lot of discussion whether or not they had the right to do that, but since BAMA is maintained on a university website, all Heath manuals have been withdrawn. Vintage Manuals still offers many of these, and I believe there are out of country websites that do as well. Heath manuals are plentiful on eBay, as well.

In any case, before I begin digging into a piece of equipment, I always try hard to get some documentation. Another good idea is to go to the "Members only" part of ARRL (I assume we're all members!) and check the QST archives for articles on your new acquisition. You'll find some helpful ideas, and maybe the details of modifications that have been done.

Next, I perform a thorough cleaning. A stiff brush and small vacuum cleaner can get rid of the loose dirt. I'll go over the outside with some "Simple Green" or similar. Once the manual is in hand, check to see if there are any parts missing or modifications done.

Now it's time to test the tubes, and replace any that are weak or dead. Get out your ohmmeter and check that the line cord is not shorted to ground. Measure across the prongs of the line cord to make sure that there is an open circuit with the power switch off, and some continuity with the switch on. Typically, the ohmmeter will show the resistance of the primary of the power transformer, which will range from a few ohms to a few hundred. If the circuit is still open with the switch closed, check the fuse.

The next critical item is the condition of the filter capacitors in the power supply. After many years of non-use, these can become "deformed." They may act as a dead short, and can destroy the power transformer quickly. The safest way to avoid this is to replace them routinely. Fortunately, they are inexpensive and easy to obtain. Mouser Electronics, Antique Electronic Supply, and Just Radios all have a wide selection of modern replacements. Many people also replace the electrolytics found in audio stages and elsewhere. However, if your goal is to keep the unit as original as possible, the caps can quite often be "re-

formed." This requires removing them from the circuit. One they're out of the radio, check them on an ohmmeter using a high range, observing polarity. A good, or potentially reformable cap will show an immediate near short, with the resistance rising quickly into the several hundred thousand ohm range. This does not mean that the cap is good; it only means it isn't shorted. If the resistance doesn't climb, then the cap is shorted and cannot be saved. Don't throw it away yet, though. There are "purists" who will hollow out the old cap and stuff the much smaller modern ones inside to preserve appearance. I'm not one of those!

The reason that the ohmmeter test doesn't guarantee that the cap is good is that the ohmmeter uses only a few volts. The capacitor may be fine for 3 volts, but in tube type equipment, they usually need to sustain several hundred volts. For a good discussion of the process, see

http://www.angelfire.com/electronic/funwithtubes/Restore_cap.html.

The only disagreement I have with this article is that they claim that caps can be reformed while in circuit. There can be cases where shorted caps are in the circuit that will prevent the restorable caps from reforming. I suggest removing them. I don't recommend the method using the equipment itself!

Using the Heathkit or other capacitor checkers works just fine, with one caution. The eye tube in the tester opens when leakage falls below the current needed to keep the eye closed. In some high capacitance, high voltage caps, the allowable or normal current is greater that that required to close the eye, so it will always indicate a leaky capacitor. There is a formula in the instruction book that will calculate the allowable leakage current. When working with one of these types, put a VOM on the current range in series with the capacitor to measure leakage current. Just be sure to start on a high range on your meter each time voltage is increased! There are also nice capacitor checkers that have actual meters built in to monitor voltage and leakage current. I have one made by Sprague called a Tel-Ohmike. If you see one for sale, grab it!

Now it's time to test the tubes, and replace any that are weak or dead. Take out only one tube at a time! The tube type is frequently worn off the tube, so if you have a bunch of them on the bench, you may not get them back in the same socket! While they're out, use some contact cleaner to clean the socket, and some emery paper to burnish the pins. Check the manual or tube chart to make sure the tubes were in the right spot to start with! Get out your ohmmeter and check that the line cord is not shorted to ground. Measure across the prongs of the line cord to make sure that there is an open circuit with the power switch off, and some continuity with the switch on. Typically, the ohmmeter will show the resistance of the primary of the power transformer, which will range from a few ohms to a few hundred. If the circuit is still open with the switch closed, check the fuse.

Use spray contact cleaner on the controls and switches, and De-Oxit on Q tips on the switch wafers.

More next month!

Public Service Event

Tour de Cure

by stovergeorge@mac.com

The 447.000 MHz repeater will be put to good use on April 17, 2010. That is the day of the San Diego Tour de Cure sponsored by the American Diabetes Association fund raising bicycle event for the cure of Diabetes. Currently there are 600 plus bicycle riders signed up for this event.

The Motorcycling Amateur Radio Club (MARC) will be using 447.000 Repeater for the command and control frequency for this event. MARC will set up a control center early that morning at the start/finish line at Mira Costa College Cardiff Campus. Radio/APRS equipped motorcycles will use this control center to report back too, both Voice communications and position. Because of the motorcycle agility to mingle in with the riders, makes it the perfect tool to relay live status of bicyclist progress through the courses. Tour de Cure event leaders at the start/finish now have a live account of how the event is progressing via MARC control center. MARC motorcycles will cover all four courses, 10, 30, 70 and the 100-mile through out North County. The motorcycles also carry limited supplies such as bicycle tubes, pumps, tools, candy and drinks to support the riders. Motorcycles will also report emergencies, downed bicycles, missing course signs and conditions so that action can be taken. At the end of the day, MARC can identify the last rider and help identify missing riders so the event can close knowing that all riders are accounted for. MARC thanks the Palomar ARC for the use of the 447.00 MHz repeater so that we could provide this all-volunteer support for this important cause.

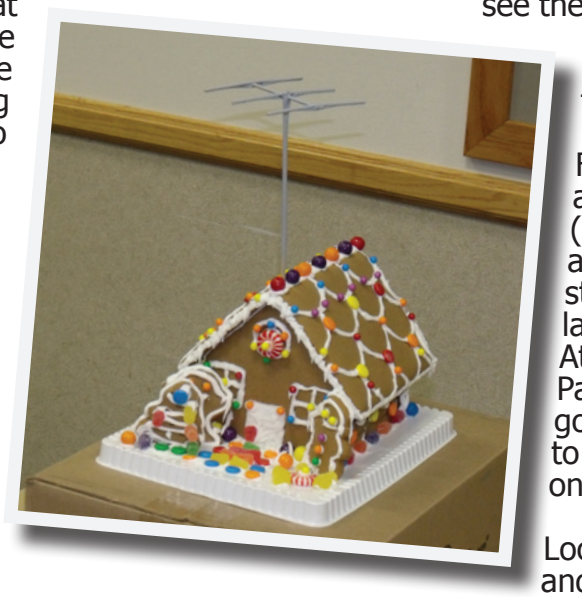
Next ARDF event at Griffith Park on April 10

The next southern California on-foot transmitter hunting event will be Saturday, April 10, 2010 in the Mineral Wells area of Griffith Park in Los Angeles.

A ham radio license and knowledge of radio equipment are not required. Experts will be on hand to teach you the basic techniques of on-foot radio direction-finding (RDF). Also expect to see some folks training to compete in the 2010 USA ARDF Championships that will be in Ohio on the third weekend of May.

If you are a beginner, there will be entry-level two-meter fox transmitters just for you, set by Joe Moell K0OV. For more experienced radio-orienteers, there will be a 5-fox two-meter international rules course of moderate difficulty, set by Marvin Johnston KE6HTS. An optional 80-meter fox transmitter may also be on the air.

If you don't have the antenna/attenuator system for on-foot foxhunting on two meters with your ham radio handi-talkie or scanner, you can easily make one during this session. Marvin Johnston KE6HTS will conduct a clinic for building his kits for measuring-tape yagis and for 90 dB offset-type attenuators. An assembled/tested attenuator in a special housing that goes inside the boom of the yagi is also available. Please register in advance by sending e-mail to marvin@west. net, so he will have the kits reserved in your name waiting for you.



It takes about an hour to put the kits together with tools and soldering irons that will be provided. If you're not an electronic technician, don't worry because there will be plenty of experts to help you. We want you to succeed! Then with your HT and the kitbuilt equipment, you will be all set to hunt.

Kitbuilding starts promptly at 10 AM, followed by the beginner hunt. The main 5-fox hunt will commence at 10 AM also. Hunters may start out on the courses at any time until 1 PM. Courses close at 3 PM.

For the advanced 2-meter course, orienteering flags and electronic scoring will be used at each transmitter. If you have an "e-stick," be sure to bring it. Please donate $5 for the advanced course to cover expenses related to the use of Los Angeles Orienteering Club's e-punch equipment and maps. No donation is requested for the beginner course and the 80-meter transmitter hunt.

If you have them, bring a handi-talkie, receiver, or scanner covering the two-meter band for each person who will be going ARDFing. If you have directional antennas, attenuators, or other on-foot RDF equipment, be sure to bring that too. Make sure that all batteries are fresh. For those with no radio gear, some extra ARDF receiver/antenna sets will be available. Be sure to bring anything you'll need while going after those radio foxes, such as munchies, bottled water and sunscreen. For map plotting, bring your own compass, protractor and pencil.

Trails are primitive in some areas of the park, so wear sturdy shoes. All ages are welcome, but young children must be accompanied by an adult at all times.

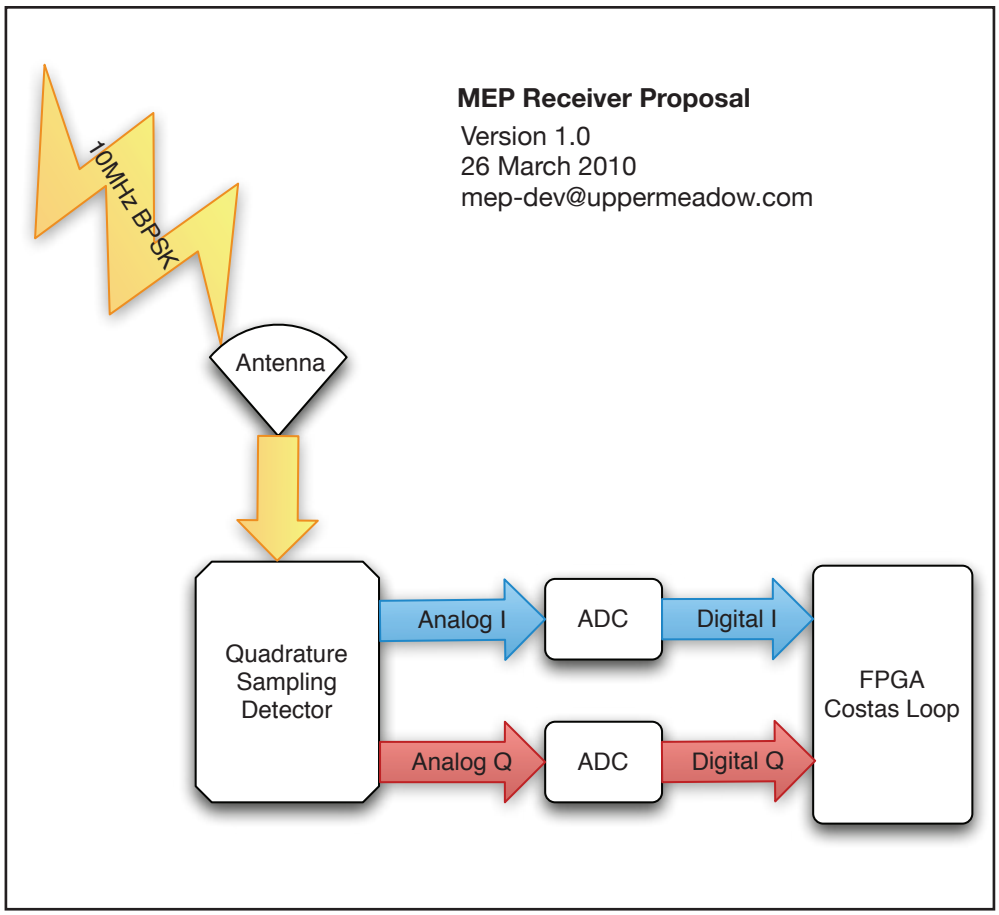
From the 134 freeway eastbound or westbound, take the Forest Lawn Drive exit and go south. Turn left into park area on Zoo Drive towards Travel Town. At the entrance to Travel Town, turn right (south) onto Griffith Park Drive and follow it straight past Mt. Hollywood Drive (gated) on right and then a quarry on the left. You will soon see the picnic grounds (starting area) on your right. If you see the driving range, you have gone too far.

From I-5 northbound, exit at "Griffith Park." Turn right (north) on Crystal Springs Drive and continue past the Ranger station on your right and the large picnic areas on your left. At the stop, turn left on Griffith Park Drive and head past the golf clubhouse and driving range to the Mineral Wells picnic area on your left.

Look for signs and an orange-and-white orienteering flag at the starting site. Call K0OV on 146.52 simplex if you have trouble finding the gathering area within the park. A map for driving to the site is at www.homingin. com. If rain is forecasted, check that site for possible cancellation.

73,
Joe Moell K0OV

Microwave Engineering Project Update



MEP (http://www.delmarnorth.com/microwave) is moving towards development of a microwave-band amateur radio modem. The modem will be implemented in a field-programmable gate array (FPGA), and it will demodulate binary phase-shift keying. The modem will accomplish this by using a Costas Loop. Additional modes and techniques will be added after the basics are completed.

Everyone is welcome to join the project or just follow along. We have a mailing list, an RSS feed, and publish all our work on our website. We do need help with many different aspects of the broadband microwave system. If you have ever wanted to learn something new or put your existing skills to work in designing and building an all-digital broadband microwave station, then this project is for you!

If any of these terms look confusing, then you're in good company. Join MEP and learn about modern digital communications techniques while contributing towards an experimental platform as well as a working microwave station.

Holiday Social Photos on page 10 and 11 by Don Johnson WD6FWE.

Charlie NN3V enjoys the program at the March PARC Meeting. Photo by KB5MU.

No Joke
San Diego Antenna Ordinance

by Tom Ellett W0NI, Michelle W5NYV

As you likely already know the City of Diego is reviewing a proposal to further restrict ham radio antennas. We know that whatever is approved here by the City will very quickly affect other communities in SD county and beyond. I was present at the hearing on Thursday and I was very proud of approximately 100+ hams who took off the morning to attend the hearing. The 3 minute speeches where all very well done and represented a broad cross section of the amateur radio community. The video clip (link below) of the proceeding is a must see and you will no doubt recognize some of your fellow hams who spoke.

Steve Early AD6VI speaks about the planning commission hearing at the March PARC meeting. Photo by KB5MU.

http://granicus.sandiego.gov/MediaPlayer.php?view_id=8&clip_id=3801

Beyond the impact of further restriction on antennas, what is before the City now will in my judgment dub San Diego as a very ham unfriendly place and have a negative effect our young people who are just starting out in ham radio. I will be calling for your support when this legislation goes to the full City council in 4-6 weeks.

From the Southwest Division e-Communicator Newsletter:

"After three hours of testimony from city staff and the public this morning, the San Diego City Planning Commission voted unanimously to recommend that the City Council reject a proposed anti-Amateur Radio antenna ordinance because they believed it was too restrictive. The planning commission recommended that city staff work with the Amateur Radio community to produce something more acceptable.

The proposed ordinance attempted to effectively ban antennas over 30 feet high in most parts of the city, and required an $8000 initial fee to initiate an approval process, with no limit on the total fees permitted.

Only two La Jolla residents, upset over over one particular antenna intheir neighborhood, testified in favor. Over 80 amateurs signed up to speak against the proposal. The San Diego DX Club, which had previously attempted to work with the city to produce a reasonable ordinance, led the opposition. An overview was provided by DX Club attorney Felix Tinkov. SDDXC members attorney Larry Serra, N6NC, Jim Price, K6ZH, and Arnie Lewin, W7BIA were primary spokespersons in opposition. Former SDDXC president Glenn Rattmann, K6NA, has played a significant background organizing role as well. 20 or more other amateurs including California's Emergency Management Agency's John Hudson, WA6HYQ, and San Diego ARRL Section Manager Steve Early, AD6VI, also spoke. Steve Early has also worked to rally San Diego city's resident amateurs. Thanks to all who participated.

In spite of today's outcome, the city council can still hold hearings and consider the proposed ordinance. The team of concerned San Diego amateurs will continue to follow the situation and respond appropriately."

The handbook that Steve Early referred to in the testimony to the planning commission can be found at the following link.
http://www.everyspec.com/MIL-HDBK/MIL-HDBK+(0300+-+0499)/MIL_HDBK_413_2003/

For more background on the issue, there is a web page devoted to the time line of the tower ordinance located at

This web page is an excellent resource for continuing coverage from an amateur radio point of view.

http://sddxc.org/tower

Ham Volunteers Needed

I am the Executive Director of The North American Center for Emergency Communications, Inc. (NACEC), a non-profit emergency communications organization, which is still based in Minnesota. This organization has been more or less dormant for about the last 10 years, but it is currently in the process of becoming very active. The mission of our organization, founded in 1992, was refocused in January 2010 to provide commercial communication support to large scale disaster areas here in the US and around the globe. We will accomplish this by providing field teams which will include commercial communications technicians who hold an FCC GROL or equivalent license and at least 5 years of experience. The field team will be equipped so they can provide commercial radio and digital communications systems to meet the immediate communications needs of the aid and relief organizations and agencies serving within the disaster area. The field team technicians, if needed, will also provide their technical skills to assist in bringing local communications systems back online. We expect this last item will be used more in developing countries.

From time to time during large disasters our field team technicians may benefit from the assistance of volunteers from the amateur radio community. We are looking for volunteers from the amateur radio community first because it is made up of individuals whose professions vary widely, from doctors and attorneys to auto mechanics and retired lumberjacks, yet who have many things in common with our commercial communications technicians and this organization. They share an interest in communications, electronics and a desire to be of service to others!

I have set up a special volunteer application form for use only by licensed amateur radio operators who wish to volunteer their time and skills to help our technicians bring communications back into large scale disaster areas. This application can be found at www.nacec.org/vol_app_ars.php.

As we expand our organization and its capabilities, we hope that you will follow our progress and take an active role in our success. You can also follow us online if you wish. You will find links to our Twitter, Facebook, and email following accounts on the lower left-hand side of most pages on our website, www.nacec.org. Should you have any questions I hope that you will contact me directly.

73

Edward Addy KEØEG, Executive Director
North American Center For Emergency Communications (NACEC)
P.O. Box 174
Aurora, MN 55705
Ph: 218-305-4100
Web: www.nacec.org

Holiday Social Photos on page 12 and 13 by KB5MU.

TWOPE

by Robert Freeburn

Do you "TWOPE"? Yes, the PARC Board has approved another mode for distributing future issues of SCOPE -- Twitter. At present, SCOPE is available via email, on the PARC web site, and by paper version via snail-mail. Beginning with the May 2010 issue, each full issue of SCOPE will be condensed down to 140 characters and sent out via Twitter. For more information, visit http://www.palomararc.org/twope

Progress!

The FCC has issued a Notice of Proposed Rule Making (NPRM) to allow Amateur Radio Service communications by employees of public safety agencies and other entities, such as hospitals, for drills and tests in preparation for emergency situations.

The operators would of course have to be licensed hams and certain restrictions would apply.

http://hraunfoss.fcc.gov/edocs_public/attachmatch/FCC-10-45A1.doc

Best 73, Bob/W6VR

K is Kicked Out of Call Signs

by Robert Freeburn

FCC banishes letter "K" from list of Amateur single-letter call-signs.

According to FCC Chairman Julius Genachowski, use of the single-letter call-sign "K" caused confusion and disruption every time Ham operator Kim Kaye (call-sign K) went on the air and led to numerous complaints that the FCC could no longer ignore.

Kim Kaye (aka "band-hog ground-hog") would spend hours calling himself for lengthy solo rag-chewing such as, "K de K, K" and "K de K, K".

Noting Kim Kaye's tireless dedication to the Amateur Radio Service since the days when single-letter callsigns were issued by the FCC, Chairman Genachowski hopes to lessen "callsign change trauma" for Kim Kaye by giving him first dibs on his choice of any of the new, expanded, 7-digit 2x4 call-signs scheduled to begin being issued on 7/1/2010, the same day as the new effective date for the new NCVEC technician class exam pool.

Editor's note: as of press date, call sign KK1KKKK is available.

Field Day Canceled!

Without a Field Day Chair, PARC will not be able to participate in Field Day.

LAST CALL

by Paul KB5MU

ARRL says Field Day is "not a contest" – but they list it under Contests on their web site and it has Rules like any other contest.

Like this one:

> Object: To work as many stations as possible on any and all amateur bands (excluding the 60, 30, 17, and 12-meter bands) and in doing so to learn to operate in abnormal situations in less than optimal conditions. A premium is placed on developing skills to meet the challenges of emergency preparedness as well as to acquaint the general public with the capabilities of Amateur Radio.

PARC has participated in Field Day each year (on the fourth full weekend of June) for decades. Some years the emphasis has been on "any and all", some years it has been on "as many stations as possible"; occasionally the most applicable clause has been "less than optimal conditions".

It's nearly impossible to avoid developing some skills and learning some lessons at Field Day. The lessons are not always the ones we expected.

It's early December, and Field Day is half a year off. Much of the detailed work to prepare for Field Day won't really get started until the last few weeks before the event. If you're just going to drop by and enjoy the event or even operate a shift at one of the stations, you probably don't need to start worrying about it yet. But somebody does.

That somebody is the club's Field Day Chairman, and we need a volunteer to step forward. The Field Day Chairman sets the tone for the whole event. He or she influences how ambitious the club's participation will be, from a very casual fun outing to a hard-core competitive effort. Perhaps most importantly, the Chairman is responsible for obtaining a great site that facilitates the kind of Field Day event planned. It's much nicer when the site is decided on and confirmed well in advance.

If you've attended a number of PARC Field Day events, you'll have an idea about how we've habitually done them. You may have ideas about how we could do them better. As Field Day Chairman, you would have an opportunity to try. The Club owns lots of equipment to make Field Day easier – you will decide how best to make use of it (or not). The Club has many members with all kinds of experience – you will recruit the talent to make Field Day work out best. You might (or might not) delegate most of the detailed work of Field Day to a cadre of experienced Band Captains, leaving your own time free for overall coordination. If you love the way PARC Field Day has always been done, you can choose to follow in those footsteps. If you think we've had it all wrong, the Board is ready to listen to you and (I predict) will endorse your plan, if you can make it work.

Please consider volunteering to serve as 2010 Field Day Chairman.

Email board@palomararc.org to volunteer or if you have questions.

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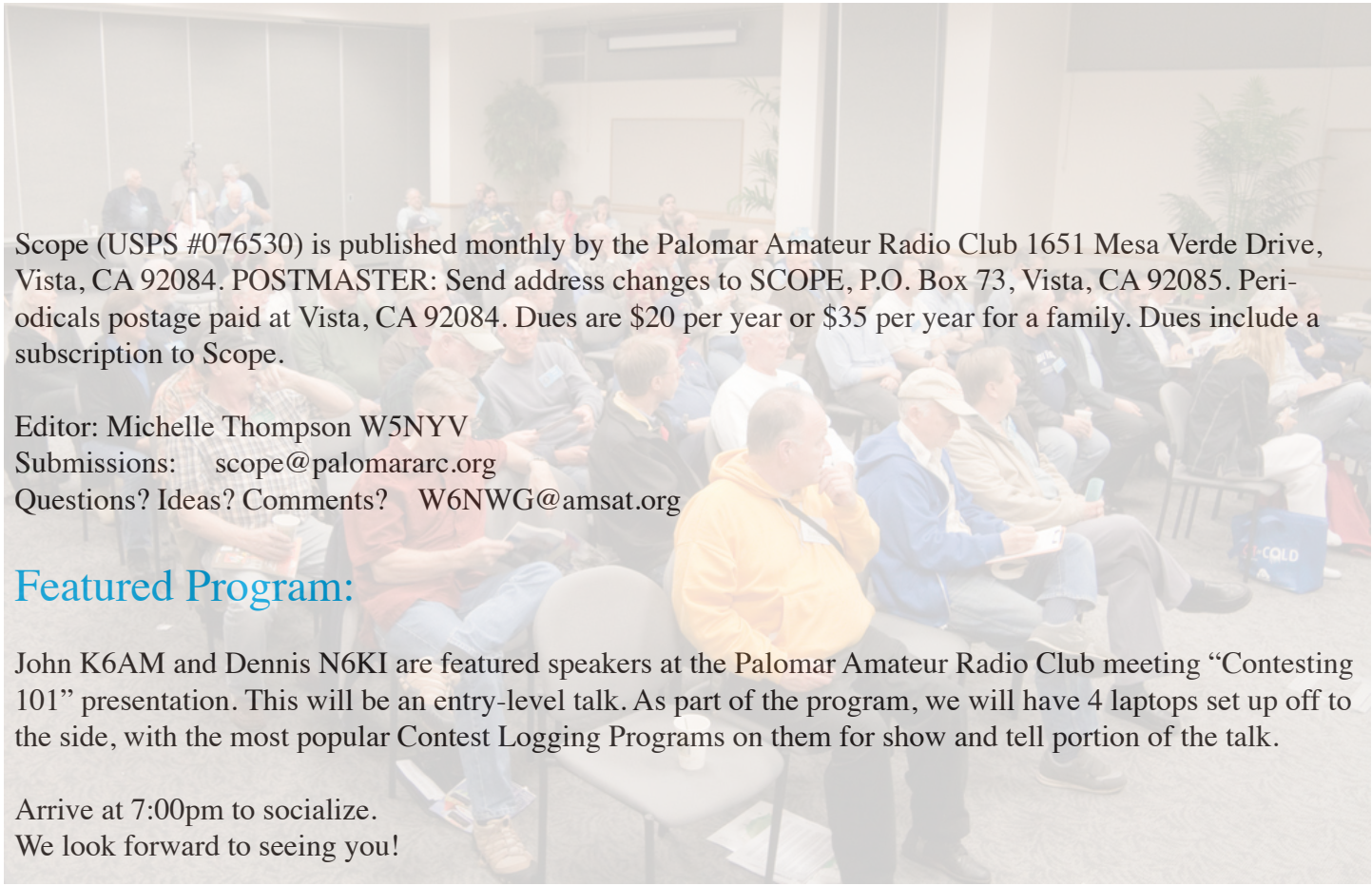

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Editor: Michelle Thompson W5NYV
Submissions: scope@palomararc.org
Questions? Ideas? Comments? W6NWG@amsat.org

Featured Program:

John K6AM and Dennis N6KI are featured speakers at the Palomar Amateur Radio Club meeting “Contesting 101” presentation. This will be an entry-level talk. As part of the program, we will have 4 laptops set up off to the side, with the most popular Contest Logging Programs on them for show and tell portion of the talk.

Arrive at 7:00pm to socialize.
We look forward to seeing you!

SCOPE

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

Operating Day

A special Operating Day was hosted by the Palomar Amateur Radio Club. Sweeping 360° views from the picnic area at Double Peak Park in San Marcos provided one of the most dramatic backdrops in the county for a very successful event.

Cecil WD6FZA demonstrated D*STAR. The planned frequencies of operation included 70cm, 2m, 6m, 10m, 15m, and 20m.

Dennis KD6TUJ writes:
Operation Day was held at Double Peak Park in San Marcos on April 18, 2010. Things came together very well. By the time Conrad and Dennis arrived Tom and Georgia had two radios placed on tables, and a 40m inverted V set up. Once parked we proceeded to set up the canopies and the PARC banner. The tri-band antenna went together easier than the last time, bringing up Tom's radio by 10:00.

I was very happy to see the PAPA group on the upper level demonstrating D-star on 2m, 440, and 1.2GHz. They also had a internet connection on the 1.2. Among their contacts was a connection with a ham next to the "HOLLYWOOD" sign on 2m simplex. The D-star display showed 93 miles and the direction to the operator.

Tom championed the HF station making contacts with Texas, Washington, South Dakota, San Diego, Lake Tahoe, and Canada. He did what we were looking to do by getting a recent General Licensee onto HF.

Paul tried to make an Earth-Moon-Earth (EME) contact as Aricevo's 1400 foot dish was in use for two hours. Georgia continued to learn how to better use her radio, also checking into the Quake Net. Ron made some QRP contacts. The day was sunny, warm, and at 4:00pm suddenly very windy. That was the hint to start the tear down starting with the canopies.

There were 44 individuals kind enough to sign the guest list. 15 were not PARC members. Many more stopped by to see what was going on and were given the tour. Many also commented that this event should be done again. Pictures are available at www.palomararc.org under "look at us".

Dennis KD6TUJ

Save the Date

Club Meeting
5 May 2010

"PARC Repeaters" Program at 7:30pm.

Board Meeting
12 May 2010

Palomar Amateur Radio Club board meeting at 7:00pm at K2RP QTH

Division Convention
September 17-19

ARRL Southwestern Division Convention held at Four Points by Sheraton in San Diego.

Membership

New Members Joining PARC: KJ6MJC, KJ6DYG, KJ6LLG, KJ6FLV, KJ6FZF, KI6GSG, KJ6FDZ, KJ6RET. And six others reinstated their memberships after a delay.
Please welcome the new members, on the air, and in person.

We now have about 70 members that have decided to receive their news letter, the SCOPE, on line, saving the club the cost of printing and mailing. Unfortunately, without the colored label on the snail mail edition, it's easy to forget when one's membership has run out. I send e-mails for reminders - but only when I have a "good" e-mail address.
So, as mentioned previously we print partial calls of those that have "expired".
The NEW list: 6SBH, 6JHQ, 6KJG, 6SD, 7MM (These 5 ran out in February and March 2010) Please!!

Al
W6GNI

Fold and Staple - April Crew W6GNI Al & Kathy , KB6NMK Jo & Toby & Luke KI6LAV Georgia & Florence, KB6YHZ Art & Janet WA5ACE Sonny (Great Turnout!!)

Editor's note: No one was arrested this month.

Michelle's Radio Word Search

S J U E L V L R X X M N E V Q
P G N N M A V E C R U O S P C
U W N G T G Y T A H G N V V A
I E L I B O M U A N D N I I M
R M G N S N E P O R T A B L E
A I B E R S M M A S W E B S R
D C R E A T E O N G R Y N S A
I R O R M C B C U Y C E O N I
O O A I O E H W O N U F K U A
M W D N L J Q R Q R T Z H O Q
N A B G A O K F V W P A D V K
M V A E P R T V A D Q I I G K
M E N O H P O R C I M D S N W
B R D M J D E N I F E D H H N
N U R M T C C S Z O W J H G I

ANTENNA
BEAGLEBOARD
BROADBAND
CAMERA
COMPUTER
DEFINED
DIGITAL
DISH
ENGINEERING
LINUX
MICROPHONE
MICROWAVE
MOBILE
MOUNTAIN
MOVIE
OPEN
PALOMAR
PORTABLE
PROCESSING
PROJECT
RADIO
SOFTWARE
SOURCE
VIDEO

Advertisements are free for members.

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

Classified ads are free for members of the club.

For Sale: HUSTLER 6BTV High Performance HF Vertical Antenna system, 80/75/40/30/20/15/10 m, complete with 250ft spool 14 ga wire and all precut radials, SS Tilt base and SS Radial plate. Used one year. Bought new at $400, will sell for $200. contact: Rich Ortloff KE6DUG 760-861-1406

There will be lots of smaller goodies on the table next meeting.

Upcoming General Meeting Topics

May 2010 Art KC6UQH PARC Repeaters
Month TBD - Lin Robertson KJ6EF – Vintage broadcast radios
Month TBD David Doan KC6YSO "AM and other boat anchors"
Month TBD - AK6QJ – Subject TBD

Training Camp
Southern California ARDF

The next southern California on-foot transmitter hunting session will be a special two-day "training camp" at the Mt. Laguna Recreation Area east of San Diego. Dates are Saturday and Sunday, May 8-9, 2010.

This event is especially for persons who are in training for the USA ARDF Championships in Ohio and the ARDF World Championships in Croatia. It is open to other radio-orienteers, but please understand that these are advanced courses. You must be capable of walking or running at 6000' elevation for at least 5 kilometers. A ham radio license is not required. There will not be an antenna/attenuator building clinic at this session.

Host and course-setter Marvin Johnston KE6HTS will provide a full 2-meter course Saturday morning, a sprint course Saturday afternoon (where the goal is to catch each transmitter on the next cycle) and a Santa Barbara style tri-tip BBQ supper Saturday evening. Sunday morning will be a full 80-meter course, followed by transmitter pickup and departure. A donation of $5/day is requested to cover SDO's maps and LAOC's e-punch equipment. Bring your "e-stick" if you have one. A collection will also be taken to cover the supper.

If you plan to attend, please register in advance by sending e-mail to Marvin. (marvin@west. net) Include your cell phone number. Final information, times, and directions to the gathering points will be sent by e-mail to those who have registered prior to the event. Please plan to arrive on time so everyone can go as a group to the starting points. Driving time from Orange County is approximately three hours.

Mount Laguna terrain is mostly runable forest. There will be a 3-hour time limit for both the 2m and 80m courses.

The Mt. Laguna orienteering area is about an hour's drive east of San Diego. From the intersection of I-805 and I-8, go east on I-8 for forty miles and take the Old Highway 80 exit. (It's about a mile after the Pine Valley Road exit.) Proceed north and east on Sunrise Highway (S1) about twelve miles toward the Laguna Recreation Area and follow the directions in the e-mail from Marvin.

We will try to monitor 146.52 MHz simplex for incoming ham operators, but may not be able to hear you if you're not close by. Cell phone coverage is spotty and varies with providers.

Overnight camping is available at Laguna Campground and at Burnt Rancheria. Cabins and motel units are available at Laguna Mountain Lodge. Another option is the Pine Valley Inn motel in Pine Valley.

A highway map and links to Web pages of the campgrounds, lodge and motel are at http://www.homingin.com

73,
Joe Moell K0OV

Griffith Park ARDF on 4/10/10 Photos by Joe Moell KØOV.

March Board of Directors Meeting Minutes

The meeting was called to order at 7:06 PM by President Dennis Baca KD6TUJ. The meeting was held at the home of Ron Pollack K2RP. Present at the meeting were:

President Dennis Baca KD6TUJ
Vice President Ron Pollack K2RP
Secretary Gary Kent W6GDK
Director #1 Paul Williamson KB5MU
Director #2 Conrad Lara KG6JEI
Scope Editor Michelle Thompson W5NYV

Treasurer's Report The treasurer's report was given by KI6LAV. Total assets were $12,065.81, Total Liabilities are $5,383.00. Total Equity is $6,682.81. Motion to approve by K2RP, second by W6GDK. Approved

Secretary's Report- Minutes of the February meeting were presented by W6GDK. Motion to approve by KB5MU, second by KG6JEI. Approved

General Meeting: The plan is to have a presentation on Military Radios by KG6UTS, Ed Zeranski. For May, N6KI and K6AM will present "Contesting 101"

Membership Report: KD6TUJ presented the membership report in Al's absence. Currently have 275 members

Repeater Site/Technical Report: Conrad noted that there was a packet problem when the TNC locked up. A hard reset cured the lockup, but the alias was lost. The 6 meter repeater is still in need of a new antenna.

Discussion items:
KI6ZUN would like to give an amateur radio demonstration at Adobe Bluffs elementary school and would like any help people can give.

Operating Day will be April 18, 2010 at the Double Peak Park in San Marcos. Event will run from 9 AM until 5 PM. This has the City of San Marcos Seal of Approval. The Red Cross is conducting an Earthquake Net on the 18th at 1 PM also. (how timely)

TASMA is going to start offering 70cm coordination. Our repeater will be coordinated as a grandfathered coordination.

Field Day still needs a chairman. Still looking at potential sites, one next to Camp Pendleton

The October auction will be held in the same location at the Carlsbad Community Center as last year.

Motion to adjourn at 8:40 PM by W6GDK, second by KI6LAV. Approved

Next meeting will be at home of Ron Pollack K2RP on April 14, 2010 promptly around 7 PM.

Submitted by Gary Kent W6GDK

Amateur Radio Antenna Defense Foundation Formed

sent in by Dennis N6KI

Radio Amateurs involved in the ongoing struggle to secure reasonable accommodation for Ham antennas have formed a new California public-benefit corporation to receive tax-deductible donations from those wishing help support litigation against local jurisdictions that ignore federal and state preemption statutes.

Chief Financial Officer Marty Woll N6VI announced at last weekend's International DX Convention in Visalia, CA that the Amateur Radio Antenna Defense Foundation, or ARADF, has just been approved by the Internal Revenue Service as a public charity under Section 501(c)(3) of the Internal Revenue Code. "Amateurs seeking to install antennas and support structures may jump through local regulatory hoops, sometimes paying significant fees in the process, only to be turned down or to be burdened with severe restrictions that preclude effective communication", said Woll. "Turning to the courts can be prohibitively costly for the Ham, while cities have taxpayer-funded attorneys on staff, giving them the upper hand. The goal of ARADF is to help level the playing field with financial assistance that will allow deserving antenna lawsuits to go forward."

ARRL also has a committee that has helped fund antenna litigation around the country, but it focuses primarily on cases that have reached the appellate level. ARADF will concentrate on lower-court cases and is supportive of but not affiliated with the American Radio Relay League.

ARADF's Board of Directors includes Woll, Volunteer Counsel Leonard Shaffer WA6QHD, former ARRL Southwestern Division Director Art Goddard W6XD, and U.C. San Diego adjunct professor Gayle Olson K6GO. All directors of the Foundation serve without compensation.

Tax-deductible contributions can be made payable to Amateur Radio Antenna Defense Foundation and mailed to ARADF, P.O. Box 5434, Chatsworth, CA 91313-5434.

Questions may be directed to ARADF@SOCAL.RR.COM

A Web site is under construction.

Hot Links and Gossip

QSO Party Calendar http://qsoparty.eqth.net/
SDR http://websdr.ewi.utwente.nl:8901/

Have you seen this man? He was last spotted at The 61st Annual International DX Convention in Visalia CA, on or about April 16, 17 & 18, 2010. He reportedly won several prizes. His shenanigans began at 4th Annual Bubba's BBQ Presented by Bubba, W6ZPL where he licked up a quart of Bubba's BBQ sauce as a BBQ flavored warm-up to the big show. The next day things started to fall into place. He was observed winning one of the first hourly prizes, 10:00 am, a license plate frame to trim the tags of his sweet ride. But his tom foolery did not stop there. Next, from a reliable source, he was overheard commenting about how nice it would be to win the Heil Quiet Phone Pro Headset at the Saturday Banquet. Well to no ones surprise, he did what he said he was going to do, he won the Headset...

If you see this man, treat him kindly and watch where you step, as rabbits have been observed following him, hoping to have some of his incredible luck rub off onto their feet.

As a testament to his aura. AF6WF was sitting next to him at Bubba's and also won a prize, as well as several others at our table.

This has been a report from a San Diego based unofficial observer, who attended the show as many others did from our area. This was my first time and it was a blast. I would recommend this as a must see to any new DXers. 73's K6KAL

And yes the YL is now a new extra… darn, now she will want to hold the mike. But at least we can break pileups with ease…

MEP Update

by Michelle W5NYV

We've made some more progress on the system design for our broadband microwave amateur radio project. We're called MEP, which stands for Microwave Engineering Project.

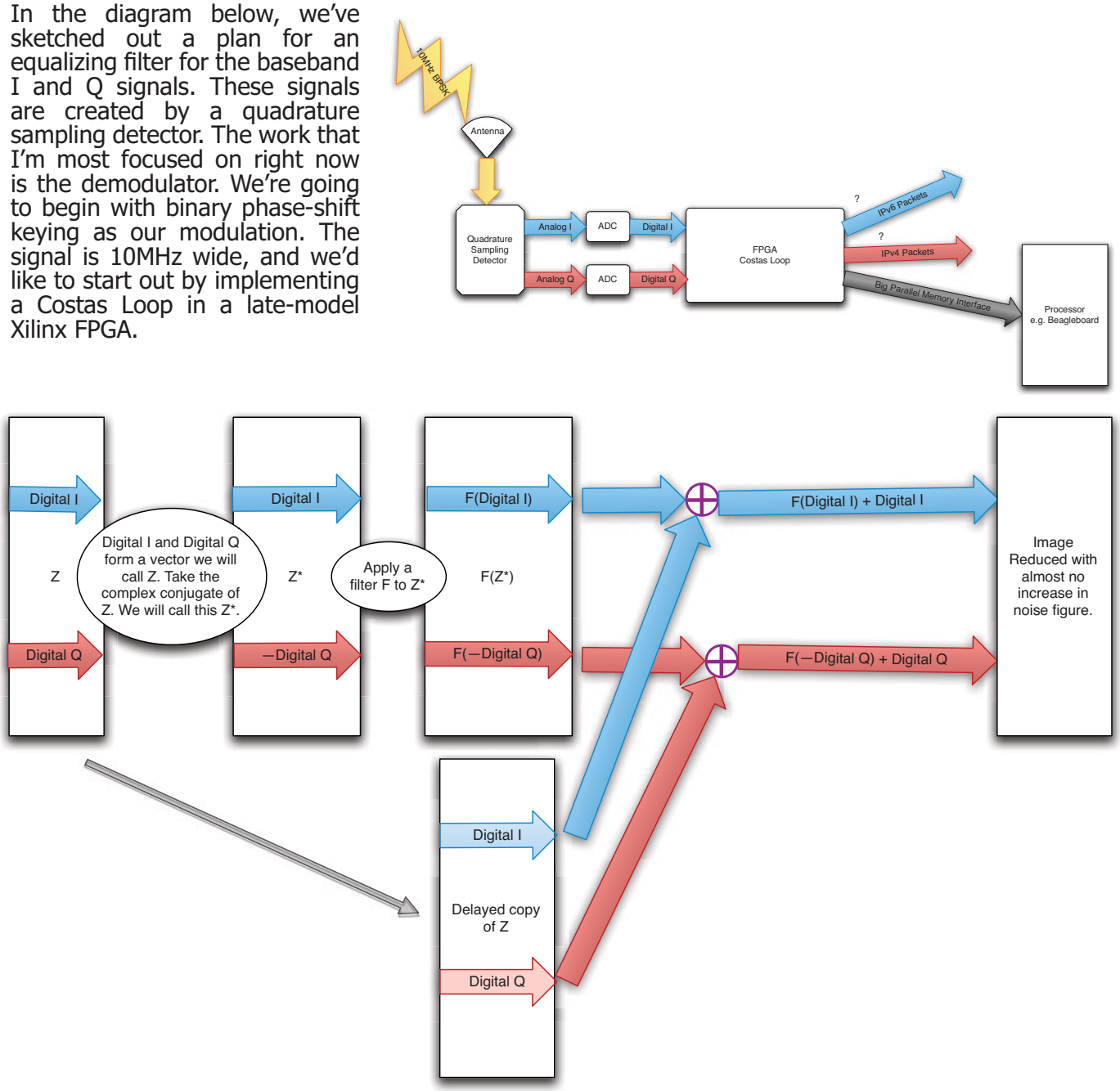
Our group's web page is http://www.delmarnorth.com/microwave

Everyone is welcome to participate.

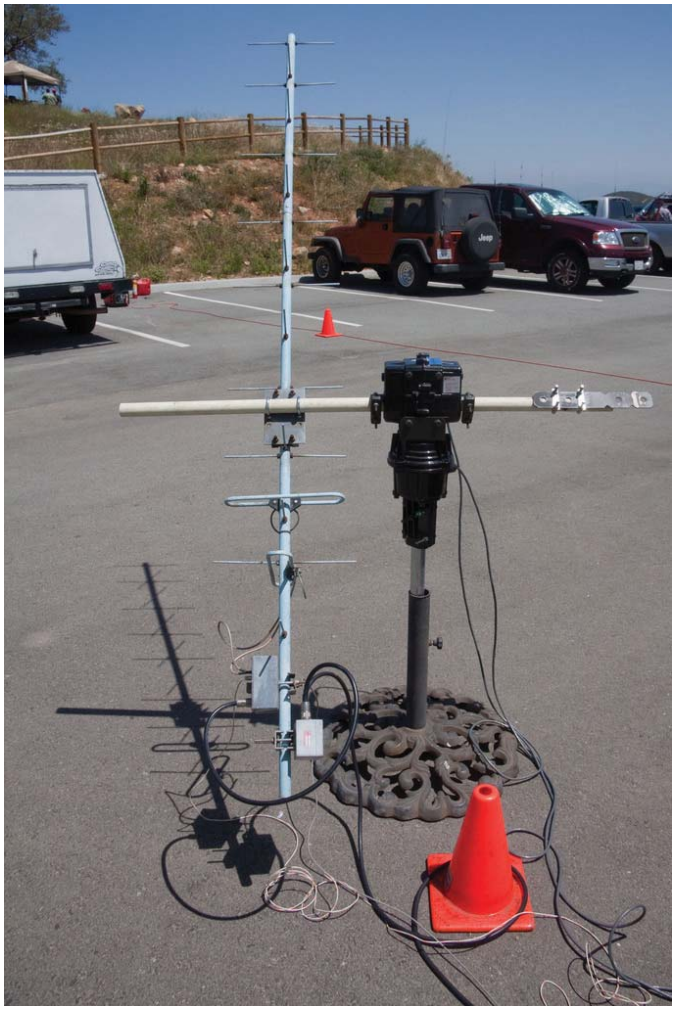
In the diagram below, we've sketched out a plan for an equalizing filter for the baseband I and Q signals. These signals are created by a quadrature sampling detector. The work that I'm most focused on right now is the demodulator. We're going to begin with binary phase-shift keying as our modulation. The signal is 10MHz wide, and we'd like to start out by implementing a Costas Loop in a late-model Xilinx FPGA.

The filter "F" in the diagram below hasn't been completed worked out yet.

Other parts of the project that need attention are the feeds, the transmitter, and physical enclosures. We'd like to further develop an automated pointing system for terrestrial microwave that has been sketched out in theory. The method relies on 2m APRS and basic calculations to point the dish in the direction of other mobile, portable, and fixed microwave stations.



Operating Day Photos by KB5MU



Operating Day Photos by KD6TUJ

San Diego 100 Mile Endurance Run June 12-13

Volunteers are being sought for communications duties for the San Diego 100 Mile Endurance Run June 12-13.

by Ellen N6UWW

The SD 100 mile course starts and finishes at the Al Bahr Campground which is off of Sunrise Highway within the Camp Laguna Recreational Area. The course covers four main areas: The first 16.5 miles are located in the Recreational Area; from there, runners transition to the Pacific Crest Trail (PCT) for ten miles before descending the Noble Canyon Trail towards Pine Valley. From Pine Valley, runners climb back up to the PCT and run north for another 11 miles (on the PCT again) to Sunrise Aid Station. Runners then descend to the west and enter a 30 mile section in the Cuyamacas. After completing the Cuyamaca section, the course returns to the PCT, Camp Laguna Mountain Recreational area, and the finish line at Al Bahr.

150 runners have registered for the race, all of whom have qualified by completing (within the last year) at least one sanctioned 50 mile race within a 13 hour time limit. Runners will be monitored at 15 aid stations as well as the start/finish. (note: this means we need at least 30 volunteers to staff the aid station communications spots - preferably more so we can work in shifts).

Last year's winner completed the grueling test in just 18hrs 15min 45sec (that's an average of 5½ minute miles - phew!) while 57 runners dropped out along the way and 77 others completed the course within the 31 hour time limit. Ham radio operators assistance consists of but is not limited to the following duties: keeping track of each runner (noting their times through the various aid stations), helping expedite the shuffling of supplies between aid stations, and providing health & welfare type traffic.

Ham operators should plan on providing their own transportation, shelter, food, water, and of course radio equipment. Suggested radio equipment would ideally consist of a two meter radio (mobile preferred), power (sufficient for long-term operation), antenna (preferably some type of base antenna with mast). Shelter could be RV, trailer, tent or car camping. Be aware that temperatures can vary widely this time of year so be prepared for warm days and very cool nights. This is a really fun event and you won't want to miss out on being a part of it.
Race information can be found at

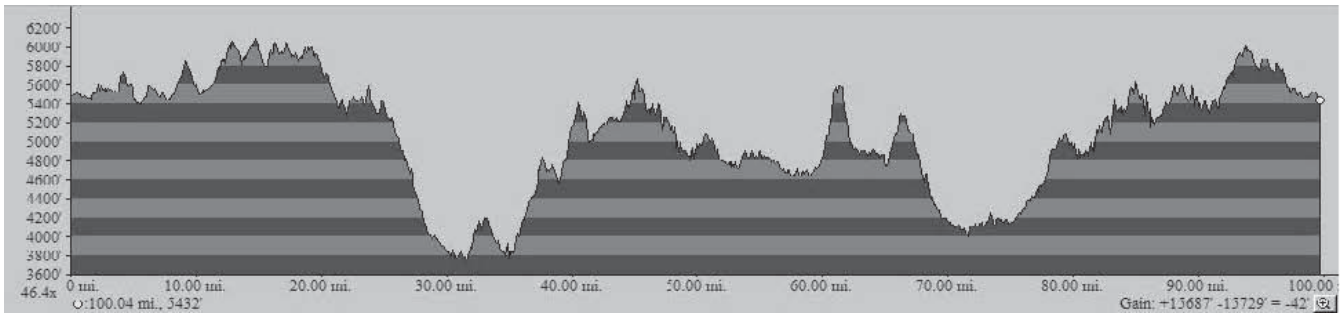
http://sandiego100.com

Any interested party should contact Ellen N6UWW at amsat.org or Wild Bill WB6BFG at amsat.org and provide the following information:

- length of shift available
- location preference
- shelter
- radio equipment capabilities

All efforts will be made to ensure that the early birds will get the worm as far as shift & location preferences.

Elevation changes in the San Diego 100 Endurance Run. Image from http://www.sandiego100.com/Course/SD100_Maps.pdf



Field Day 2010

by Ron K2RP

Our site will be at Nash's home in Bonsall, with Ron, K2RP and Dennis, N6KI coordinating. We need Station Chairmen, operators, etc. Also need a couple of trailers, mobile homes, big tents, or other shelter, plus tables and chairs. 11 AM local time, Saturday June 26 thru 11 AM Sunday, June 27. Setup begins Friday, June 25. This is one of the year's big events.

June meeting will be about Field Day.

What is Field Day about?

According to ARRL, Field Day is a public demonstration of Emergency Communications.

From the press release template available at ARRL:

http://www.arrl.org/files/file/801-FDReleaseTemplate.pdf

"Thousands of Ham Radio operators will be showing off their emergency capabilities this weekend. Over the past year, the news has been full of reports of ham radio operators providing critical communications in emergencies including the California wildfires, Oregon and Michigan storms, tornadoes and other events world-wide. During Hurricane Katrina, Amateur Radio – often called "Ham radio" - was often the ONLY way people could communicate, and hundreds of volunteer "hams" traveled south to save lives and property. When trouble is brewing, ham radio people are often the first to provide critical information and communications. On the weekend of June 28-29, the public will have a chance to meet and talk with these ham radio operators and see for themselves what the Amateur Radio Service is about. Showing the newest digital and satellite capabilities, voice communications and even historical Morse code, hams from across the USA will be holding public demonstrations of emergency communications abilities."

The release continues, with Field Day defined the operation of emergency communications stations.

"This annual event, called "Field Day" is the climax of the week long "Amateur Radio Week" sponsored by the ARRL, the national association for Amateur Radio. Using only emergency power supplies, ham operators will construct emergency stations in parks, shopping malls, schools and back yards around the country. Their slogan, "Ham radio works when other systems don't! " is more than just words to the hams as they prove they can send messages in many forms without the use of phone systems, internet or any other infrastructure that can be compromised in a crisis. More than 30,000 amateur radio operators across the country participated in last year's event."

"We hope that people will come and see for themselves, this is not your grandfather's radio anymore," said Allen Pitts of the ARRL. "The communications networks that ham radio people can quickly create have saved many lives in the past months when other systems failed or were overloaded."

The suggested public invitation text follows.

"The Palomar Amateur Radio Club invites the public to come and see ham radio's new capabilities and learn how to get their own FCC radio license before the next disaster strikes."

The press release concludes with some information about ARRL and ARES.

"There are 650,000 Amateur Radio licensees in the US, and more than 2.5 million around the world. Through the ARRL's ARES program, ham volunteers provide emergency communications for thousands of state and local emergency response agencies, all for free."

Finally, readers are directed to a website.

"To learn more about Amateur Radio, go to

www.emergency-radio.org.

The public is most cordially invited to come, meet and talk with the hams. See what modern Amateur Radio can do. They can even help you get on the air!"

What do you think Field Day is about? With as many Field Day sites and participants as there are, one shouldn't be surprised that there are many different possible ways to frame, explain, define, and approach Field Day.

The selection of Field Day as a way to showcase the emergency communications role of amateur radio fits in well with one of the purposes for amateur radio as described in Part 97.

§97.1 Basis and purpose.

The rules and regulations in this Part are designed to provide an amateur radio service having a fundamental purpose as expressed in the following principles:

(a) Recognition and enhancement of the value of the amateur service to the public as a voluntary noncommercial communication service, particularly with respect to providing emergency communications.

(b) Continuation and extension of the amateur's proven ability to contribute to the advancement of the radio art.

(c) Encouragement and improvement of the amateur service through rules which provide for advancing skills in both the communications and technical phases of the art.

(d) Expansion of the existing reservoir within the amateur radio service of trained operators, technicians, and electronics experts.

(e) Continuation and extension of the amateur's unique ability to enhance international goodwill.

However, is a once-a-year contest really the best place to put an emergency communications face on amateur radio? What about the other 364 days of the year?

Where is the best place to show emergency communications contributions made by amateur radio operators?

There are many options. One can start with the web. There are emergency communications classes from ARRL.

http://www.arrl.org/online-course-catalog

There is a certification program available from ARRL. There is an administrative fee for this.

There are also many excellent courses from FEMA's independent study program. These classes are free.

http://training.fema.gov/is/crslist.asp

Becoming familiar with the Incident Command System is a great place to start if you are interested in volunteering with a served agency.

The ARRL lists many organizations that have formal agreements with the Amateur Radio Emergency Service (ARES).

- Citizen Corps - Department of Homeland Security
- Federal Emergency Management Agency
- National Communications System
- American Red Cross
- Salvation Army
- National Traffic System | (What is the NTS)
- National Weather Service
- National Oceanic & Atmospheric Administration
- Association of Public Safety Communications Officials

continued from page 14

This list is a good starting point. There are many other organizations out there that are regional, seasonal, or in transition that greatly benefit from trained amateur radio operators being involved in the support of their mission.

Club Survey

Please Complete and send to scope@palomararc.org

I work: (circle as many as apply)
HF 6m 2m and up ATV satellite

other:

I would like to work: (circle as many as apply)
HF 6m 2m and up ATV satellite

other:

I would like to learn about...
Programs I would like to see are...
I enjoyed programs either about or by...
How can PARC and it's members help you?
Is there something you can offer to help PARC?
What do like about PARC?

OPTIONAL
Your name, call, and contact information and preferences, in order to continue the conversation.

Thank you!

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Editor: Michelle Thompson W5NYV
Submissions: scope@palomararc.org
Questions? Ideas? Comments? W6NWG@amsat.org

Featured Program:

At 7:30pm, Art KC6UQH will speak about amateur radio repeaters of various types, including semiduplex, simplex, full duplex, crossband, and in-band. Operating procedures and details about PARC's repeater site will be presented.

Arrive at 7:00pm to socialize.
We look forward to seeing you at the Carlsbad Safety Center, 2560 Orion Way, Carlsbad, CA.

SCOPE

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

Rusty AF6WF has made an afghan in teal colors that will be a great warmer for field day. This will be at the club meeting for raffle. Also included will be a book, Nifty E-Z Guide to PSK31 Operation produced by N6FN Bernie LaFreniere.

Field Day Net
Every Wednesday night at 8:00 PM hosted by Ron K2RP on 146.730. Net will not be held on club meeting night.

We often forget to show our appreciation to some members who go way out of their way to serve the membership. Here are a couple of well deserved "pats on the back:"

As most of us know, the repeater suffered a serious audio problem last month, and a bunch of the "usual suspects" went way out of their way to correct the problem, involving multiple trips up the mountain. Notable were Art, Conrad, Tom, Loren, David, Mike. These were the ones we know about, and apologies to any others involved in this important mission.

Last month we reported on the success and fun at the first "Operating Day." This was the brainchild of our own Tom, KG6RCW, who conceived the idea, followed through on the location, and brought a rig and spent the day introducing newcomers to HF. Art Mc Bride, KC6UQH, brought and assembled a 10 GHz ATV setup, and arranged a sked with another ATVer in Orange County. Paul, KB5MU brought a moonbounce demo, D-Star Demo by Cecil, WD6FZA. Georgia, KI6LAV was on hand to demonstrate net procedures, too. As always, Conrad, KG6JEI and Dennis, KD6TUJ were there to do the "heavy lifting" erecting antennas and setting up generators. Again, apologies to anyone we missed.

FIELD DAY: Site will be in Fallbrook at W6HCD QTH and Club will run in the "E" Category. Power supplied by generators and KG6RED's Portable solar panel trailer system. We need operators (slots filling fast-let us know your preferences) We need at least one more shelter (trailer, RV, big tent, etc.) Need more leaders and station captains. Setup 11 AM Friday, June 25. Event begins 11 AM on Saturday, June 26 and lasts 24 hours. We'll have one station powered entirely by solar energy!
Coordinate with Ron, K2RP (760 436 8109 or K2RP@ARRL.NET) or sign up at June meeting.

Save the Date

Club Meeting
2 June 2010

"Field Day" Program at 7:30pm.

Board Meeting
9 June 2010

Palomar Amateur Radio Club board meeting at 7:00pm at K2RP QTH

Field Day
June 26-27

Demonstration of the operation of portable stations in the field.

Membership

New Members Joining PARC: KJ6MJC, KJ6DYG, KJ6LLG, KJ6FLV, KJ6FZF, KI6GSG, KJ6FDZ, KJ6RET. And six others reinstated their memberships after a delay. Please welcome the new members, on the air, and in person.

We now have about 70 members that have decided to receive their news letter, the SCOPE, on line, saving the club the cost of printing and mailing. Unfortunately, without the colored label on the snail mail edition, it's easy to forget when one's membership has run out. I send e-mails for reminders - but only when I have a "good" e-mail address.
So, as mentioned previously we print partial calls of those that have "expired".
The NEW list: 6SBH, 6JHQ, 6KJG, 6SD, 7MM (These 5 ran out in February and March 2010) Please!!

Al
W6GNI

Upcoming General Meeting Topics
July program will be Marty Voll, N6VI, asst. Southwest Director. Program to be determined.
Month TBD - Lin Robertson KJ6EF – Vintage broadcast radios
Month TBD David Doan KC6YSO "AM and other boat anchors"
Month TBD - AK6QJ – Subject TBD

Fold and Staple - May Crew
Fold & Staple KB6NMK Jo
KB6YHZ Art & Janet
W6GNI Al & Kathy
WA5ACE Sonny
Dodged the cops again!!!

Roger AD5T reports "I've been playing around with the scanning feature in Ham Radio Deluxe and have loaded a bunch of 10m beacons, including ones I find by tuning around. I'm pretty amazed how often the band is open and there's no activity. Right now, at 6 a.m. your time, the WA6MHZ beacon is pretty solid out of El Cajon. I have it at 28.279300. It fades in and out, but I'd bet PSK would be solid copy." Roger's QTH is eastern Mississippi.

Advertisements are free for members.

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

For Sale: HUSTLER 6BTV High Performance HF Vertical Antenna system, 80/75/40/30/20/15/10 m, complete with 250ft spool 14 ga wire and all precut radials, SS Tilt base and SS Radial plate. Used one year. Bought new at $400, will sell for $200. contact: Rich Ortloff KE6DUG 760-861-1406

For Sale: 6BTV Vertical Antenna. Crank up Tower with rotor and 3 El Yagi. Must be taken down and removed. Call Lee, (760) 726-1097

There will be lots of smaller goodies on the table next meeting.

On behalf of the Palomar Amateur Radio Club, the editor and contributors of the Scope would like to wish Stan Rohrer W9FQN a quick recovery from major surgery.

2010 ARRL Southwestern Division Convention

September 17, 18 & 19, 2010

San Diego, California

Four Points Hotel Sheraton, San Diego

It's time for one of the best ARRL Conventions on the West Coast! Come see the Ham Gear and take in the sights of Sunny San Diego!

For up to date information about the Convention, please visit us at the website: www.sandarc.org/Click on Convention Button.

Contact Person: Paul KC6QLS at (619) 593-9445 or Email at kc6qls@cox.net

See you at the Convention!

Above, a solar powered 75m man pack at Dayton Hamvention 2010. Photo by KY6LA. Below, Bruna Begali of Begali Keys at Dayton. Photo by KY6LA.

Volunteer at the Del Mar Fair!

Dear SANDARC Delegates:

I have posted the schedule of the Del Mar Fair at www.sandarc.org. Go there and click on calendar. If your club can work any days please contact Paul KC6QLS at

kc6qls@cox.net

and send me the day and shift you like to work.

Please ask your club to pick some days that they will cover. We need to fill in all the days. Last year Steve and myself worked well over 20 days and most were both shifts.

The Del Mar Fair runs from 6/11 to 7/5 and the shifts are 10am to 2pm and 2pm to 5pm. Your pass and code will be at WILL CALL at the main gate and you can get in early!

Radio, antenna and pass to get in are provided. Send me a list of Name, Call and Shift (s) and contact information!

Paul KC6QLS
Vice Chair SANDARC

April Board of Directors Meeting Minutes

The meeting was called to order at 7:17 PM by President Dennis Baca KD6TUJ. The meeting was held at the home of Ron Pollack K2RP. Present at the meeting were:

President Dennis Baca KD6TUJ
Vice President Ron Pollack K2RP
Secretary Gary Kent W6GDK
Director #1 Paul Williamson KB5MU
Director #2 Conrad Lara KG6JEI
Membership Al Donlevy W6GNI

Treasurer's Report The treasurer's report was given by KD6TUJ on behalf of KI6LAV. Total assets were $13,048.32, Total Liabilities are $5,336.00. Total Equity is $7,712.32. Motion to approve by KB5MU, second by K2RP. Approved

Secretary's Report- Minutes of the March meeting were presented by W6GDK. Motion to approve by KB5MU, second by K2RP. Approved

General Meeting: Next meeting is Arthur C. McBride III, KC6UQH on "Introduction to Repeaters"

Membership Report: Al wants to send some renewal post cards to 111 past due members. Current membership is 283. Approved.

Repeater Site/Technical Report: Packet nodes and aliases still need to be set up. The 146.73 machine is experiencing low audio. Art and Loren are trying to make arrangements to go up the hill this Sunday (4-18). Michelle sent in the paperwork for the ATV coordination today.

Discussion items:
Operating Day will be April 18, 2010 at the Double Peak Park in San Marcos. Event will run from 9 AM until 5 PM. Concurrently is the ARRL Rookie Roundup. KB5MU will attempt some EME contacts with Arecibo. Art will have some microwave equipment.

Dave Doan KC6YSO gave some GE 6 meter parts to the club.

Del Mar Fair – SANDARC is looking for clubs to support the annual booth between 6/11 and 7/5. We will advertise in the Scope and at the meeting to see if any members are interested in participating before we commit.

Motorcycle Amateur Radio Club has requested use of the 447.000 repeater on April 17 to support the Tour de Cure.

Field Day – N6KI has been working with Nash W6HCD to have FD on his property in Bonsall. Ron, K2RP will coordinate the FD effort.

SANDARC would like to have an ad in the SCOPE for the Southwestern Convention Sept 17-19.

OLD Business: None
NEW Business:

Loren Hunt AD6ZJ would like to buy two power supplies for the repeater and is requesting $280.00 for that purpose for the packet building. Moved by KB5MU to approve, second by K2RP. Approved unanimously

Motion to adjourn at 9:05 PM by W6GDK, second by K2RP. Approved

Next meeting will be at home of Ron Pollack K2RP on May 12, 2010 to start precisely after 7PM

Submitted by Gary Kent W6GDK

Above, prize drawings in the arena at the close of Dayton Hamvention 2010. Photo by KY6LA.

Amateur Radio Antenna Defense Foundation Formed

sent in by Dennis N6KI

Radio Amateurs involved in the ongoing struggle to secure reasonable accommodation for Ham antennas have formed a new California public-benefit corporation to receive tax-deductible donations from those wishing help support litigation against local jurisdictions that ignore federal and state preemption statutes.

Chief Financial Officer Marty Woll N6VI announced at last weekend's International DX Convention in Visalia, CA that the Amateur Radio Antenna Defense Foundation, or ARADF, has just been approved by the Internal Revenue Service as a public charity under Section 501(c)(3) of the Internal Revenue Code. "Amateurs seeking to install antennas and support structures may jump through local regulatory hoops, sometimes paying significant fees in the process, only to be turned down or to be burdened with severe restrictions that preclude effective communication", said Woll. "Turning to the courts can be prohibitively costly for the Ham, while cities have taxpayer-funded attorneys on staff, giving them the upper hand. The goal of ARADF is to help level the playing field with financial assistance that will allow deserving antenna lawsuits to go forward."

ARRL also has a committee that has helped fund antenna litigation around the country, but it focuses primarily on cases that have reached the appellate level. ARADF will concentrate on lower-court cases and is supportive of but not affiliated with the American Radio Relay League.

ARADF's Board of Directors includes Woll, Volunteer Counsel Leonard Shaffer WA6QHD, former ARRL Southwestern Division Director Art Goddard W6XD, and U.C. San Diego adjunct professor Gayle Olson K6GO. All directors of the Foundation serve without compensation.

Tax-deductible contributions can be made payable to Amateur Radio Antenna Defense Foundation and mailed to ARADF, P.O. Box 5434, Chatsworth, CA 91313-5434.

Questions may be directed to ARADF@SOCAL.RR.COM

A Web site is under construction. Ω

MEP Update

by Michelle W5NYV

We've made some more progress on the system design for our broadband microwave amateur radio project. We're called MEP, which stands for Microwave Engineering Project.

Our group's web page is http://www.delmarnorth.com/microwave

Everyone is welcome to participate.

Parts of the project that need advice and attention are the feeds, the transmitter, and physical enclosures. We'd like to further develop an automated pointing system for terrestrial microwave that has been sketched out in theory. The method relies on 2m APRS and basic calculations to point the dish in the direction of other mobile, portable, and fixed microwave stations.

The particular area of progress is sketched on the next page. Some of the hardware of the Costas Loop is in the Quadrature Sampling Detector. With the FPGA configured to adjust the local oscillator of the detector, the loop is closed. External analog to digital converters will be used to take the detected signals into a format the FPGA can work with.

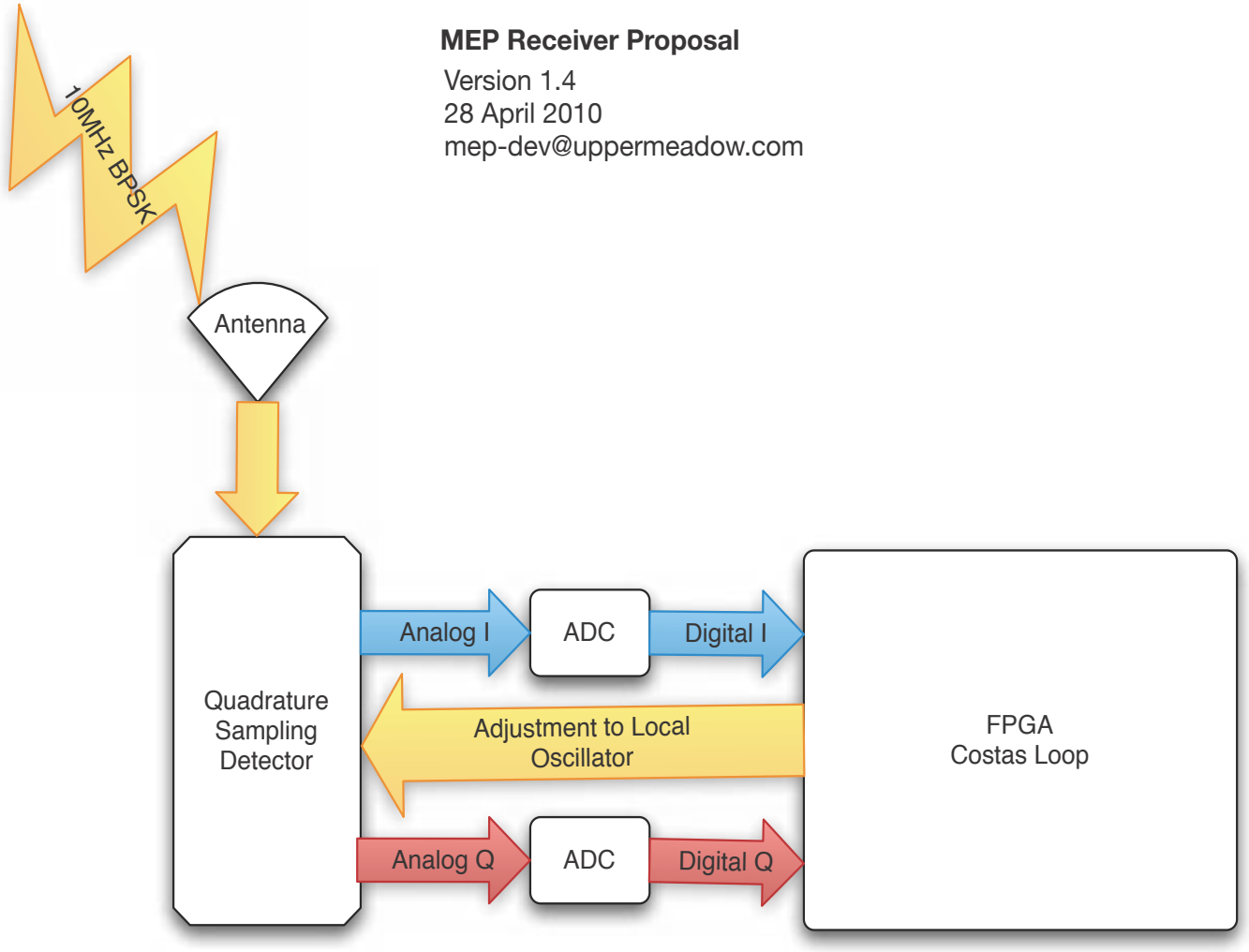
The next step is to build or find a 10MHz wide signal source at 3.4GHz for experiments with the detector. A development kit was purchased with a quadrature sampling detector already built up for the 3.4GHz band.

The hardware description language we'll be working with is called VHDL. This language provides a way to configure devices to perform complicated digital electronic functions. I've been relearning VHDL for the project, and have enjoyed it a lot. One of the goals of MEP is to produce, in the process of working on the project, tutorials that help readers get up and running with technologies such as FPGAs and embedded devices.

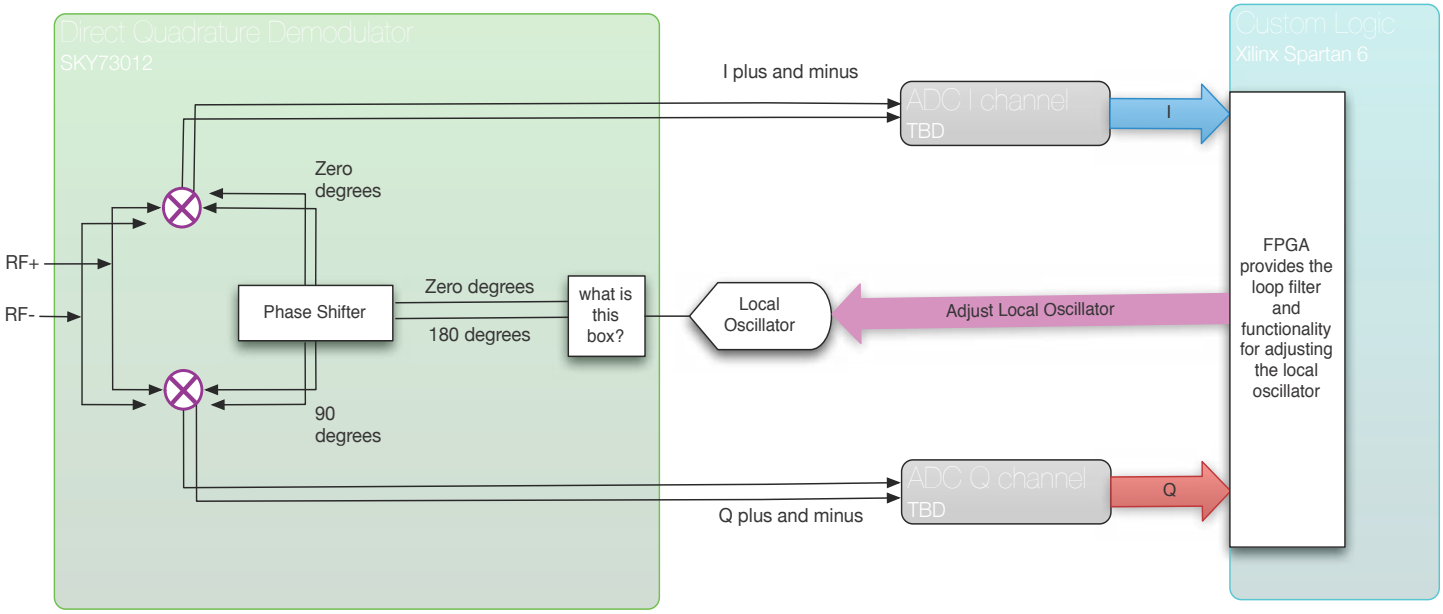
There is often a large gap between reference documents and advanced documentation where example-based tutorials can serve a useful purpose. I've found that it makes technologies, processes, and procedures a lot more understandable for me, if I write a document as I go along. With peer-review, these sorts of documents can be published for others to use to get up to speed in a subject area. Ω

MEP Receiver Proposal

Version 1.4
28 April 2010
mep-dev@uppermeadow.com



Functional Block Diagram



Oh, So You Said You Needed A Manual?

submitted by Dennis N6KI

http://www.radioamadorismo.org/ (Great site but not always accessible)
http://www.ham.dmz.ro
http://www.cqham.ru/sch_eng.html
http://bama.sbc.edu/
http://www.mods.dk/ (1 Free Download every 4 days unless you Upload a Manual)
http://www.hamradio.bc.ca/
http://www.radioamateur.eu/schemari.HTML
http://www.washcoares.org/res-docs.html#Eqpt
http://kb2ljj.serveftp.com/
http://www.n2ckh.com/library.htm
http://www.radioamateur.eu/schemari.html
http://www.eserviceinfo.com/index.php?what=search
http://www.w4qcfmanuals.com/manualsD-G.html

Some Kenwood TS-520 Manuals Manuals
http://www.kg6haf.com/kenwood.html
http://www.dk9ip.de/DK9IPdownload/TS850_IM/TS850_IM.html
http://fp1.centurytel.net/k0xxx/Manuals%20&%20Schematics.htm
http://www.n6wk.com/kenwood/
http://ac6v.com/manuals.htm
http://www.qso.nl/instruction.htm (busted 6/20/06)
http://www.repeater-builder.com/
https://www.pacparts.com/
http://members.fortunecity.com/xe1bef/manuals.htm
http://members.fortunecity.com/xe1bef/kenwood-manuals.htm
http://members.fortunecity.com/xe1bef/icom-manuals.htm
http://members.fortunecity.com/xe1bef/yaesu-manuals.htm

All ICOM Manuals
http://www.icom.co.jp/world/support/download/manual.html
http://www.marineelectronicshoppe.com/Manuals/Yeasu/
http://199.245.125.13/download/
http://199.245.125.13/download/mods-a-d/dr235.txt
Comet CFX-4310 triplexer
http://www.agtannenbaum.com
www.manualman.com
http://www.hy-gain.com/manuals.php

Drake and Hallicrafters
http://www.dproducts.be/drake_museum/
Many Manuals and articles, mods etc
http://members.fortunecity.com/xe1bef/
http://ac6v.com/techref.htm#KEN

Try some of these links to track down manuals you've been needing to reference. Most sources are free, but some are not free. Let us know of any success stories or complaints!

Software Defined Radio on the Web

Listen to a SDR in Netherlands and especially if there is any propagation to Europe from your QTH Listen to your signal and see how strong you are (or are not) being heard in Europe ! Plus just do some Shortwave listening to ham bands to see what's being heard in Europe at the moment covers 7 bands including 65 to 160 kHz, AM Broadcast band and 160 thru 20 mtrs

http://websdr.ewi.utwente.nl:8901/

Click on frequency in black area just below signals. Switch modes etc at bottom of waterfall display.

Maker Faire®

A Report by Paul KB5MU

Maker Faire is a giant DIY symposium for people who like to make neat things, with a strong emphasis on all types of electronics. Ham radio was very much in evidence at the recent event in San Mateo, California.

A group of about two dozen hams led by Michael, NE6RD, manned an indoor display booth, under the auspices of the Foothills Amateur Radio Society and the ARRL. The booth featured APRS, with a large map display screen showing live position data. This tied in with a talk by Mark, AF6IM, who uses ham radio and APRS during high-altitude parachute jumping. On the other side of the booth, a number of demos were set up to teach about oscilloscopes. One interesting demo used a $25 swap meet 'scope to compare a GPS-disciplined crystal oscillator to a rubidium reference oscillator, easily visualizing frequency differences as small as one part in a hundred million. Another demo used parts from an old hard drive to create a mechanical oscilloscope.

Outside the hall, the Blackberry REACT group operated several amateur radio stations. They had a van equipped for HF mobile operation, and other stations set up under a shade tent. They had a video presentation and demonstrated HF and VHF/UHF communications.

Elsewhere inside the hall, there were multiple displays of high-altitude ballooning groups, who use amateur radio and APRS for tracking their payloads during and after missions. Other groups displayed CubeSat technology for low cost satellite missions, though the ham radio tie-in was a little more difficult to spot at those booths.

Hams weren't alone in undertaking electronics-related education at Maker Faire. There were two different organizations running "learn to solder" schools with dozens of soldering stations kept busy throughout the two-day event, mostly with young people. Everywhere there were robots, robots, and more robots, most all with some kind of electronic controls. And everywhere there were kids. I hope at least a few of them noticed ham radio. Ω

The two outdoor photos are the Blackberry REACT ham group. The indoor photo is in the Learn to Solder booth run by SparkFun. Photos by KB5MU.

HRO is **sponsoring a class** for newly licensed hams. This will give info on what to do with new license, programming transceivers, etc. Contact Joe at HRO for details. (858) 560-4900

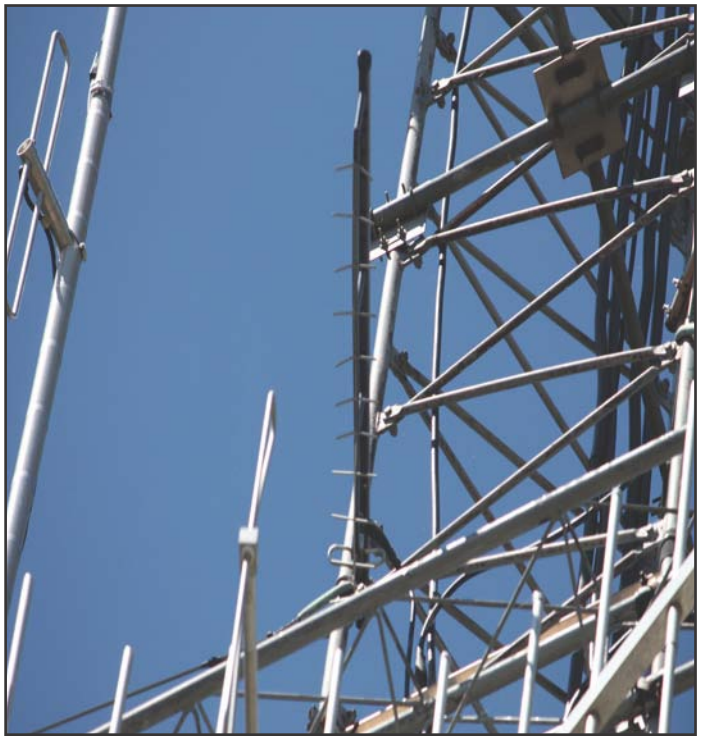
HRO is **sponsoring a parking lot swap meet** on July 10 from 7:30 to 2:00. Call there to reserve spaces. (858) 560-4900

Repeater Site Report

submitted by Those Who Were There

The Club would like to take this moment to mention that we can confirm around mid-afternoon on Wednesday May 19 the 146.730 repeater has experienced a failure causing the /P to no longer be transmitted at the end of each transmission.

We believe this incident may be related to actions (intentional or not is still to be determined) by Dennis KD6TUJ and Conrad KG6JEI who went up to the mountain around noon to attach a set of control wires.



Even though the actions by these two may have caused this failure we would like to thank them for the time they spent on the hill along with Art KC6UQH for ensuring they had the knowledge required for this trip.

We do not believe this failure is related to any action performed by the following persons who assisted in bringing 146.730 back online after its previous failure:

Loran AD6ZJ who took time to try and repair on the hill and in the end brought the repeater down for Repair.

ART KC6UQH who took time out of his schedule not only to track down the problem (A broken trace) but also went up to the repeater site to install the new unit.

Tom KG6RCW Dave Heiser K6ROY, Jim W6JAD, and Mike K6MRP for being available to be onsite as part of the 2 man rule.

The club is looking into restoring the /P we do not however know when this will occur. Your patience is appreciated. We can report that the minor task Dennis and Conrad were sent to do WAS completed successfully minus the /P incident.

Winter failures at repeater site

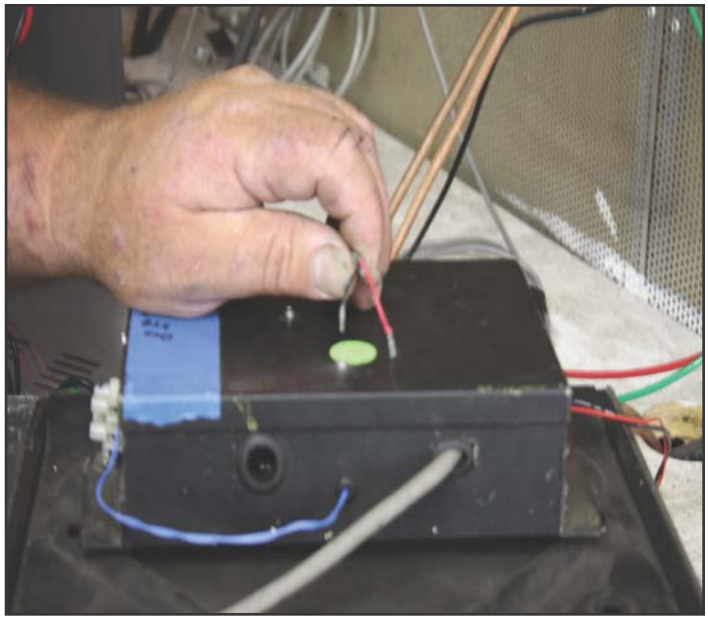
It can be confirmed that several antennas did fail at the repeater site this winter. We believe this to be related to ice buildup and possible wind action.

Worst hit appears to be both 220 clubs that share our site who have both suffered full bends on directing elements of the beams.

The 220 clubs are in the process of being contacted with this information so that antenna repairs can be planned now that we are entering the summer months.

A couple of PARC antennas appear to have suffered similar element bending that will need to be addressed in a future work party. Ω

Dayton Snapshots



Above, Tarheel Antennas at Dayton Hamvention 2010. Below, a huge Yaesu booth. Photos by KY6LA.

San Diego 100 Mile Endurance Run June 12-13

Volunteers are being sought for communications duties for the San Diego 100 Mile Endurance Run June 12-13.

by Ellen N6UWW

The SD 100 mile course starts and finishes at the Al Bahr Campground which is off of Sunrise Highway within the Camp Laguna Recreational Area. The course covers four main areas: The first 16.5 miles are located in the Recreational Area; from there, runners transition to the Pacific Crest Trail (PCT) for ten miles before descending the Noble Canyon Trail towards Pine Valley. From Pine Valley, runners climb back up to the PCT and run north for another 11 miles (on the PCT again) to Sunrise Aid Station. Runners then descend to the west and enter a 30 mile section in the Cuyamacas. After completing the Cuyamaca section, the course returns to the PCT, Camp Laguna Mountain Recreational area, and the finish line at Al Bahr.

150 runners have registered for the race, all of whom have qualified by completing (within the last year) at least one sanctioned 50 mile race within a 13 hour time limit. Runners will be monitored at 15 aid stations as well as the start/finish. (note: this means we need at least 30 volunteers to staff the aid station communications spots - preferably more so we can work in shifts).

Last year's winner completed the grueling test in just 18hrs 15min 45sec (that's an average of 5½ minute miles - phew!) while 57 runners dropped out along the way and 77 others completed the course within the 31 hour time limit. Ham radio operators assistance consists of but is not limited to the following duties: keeping track of each runner (noting their times through the various aid stations), helping expedite the shuffling of supplies between aid stations, and providing health & welfare type traffic.

Ham operators should plan on providing their own transportation, shelter, food, water, and of course radio equipment. Suggested radio equipment would ideally consist of a two meter radio (mobile preferred), power (sufficient for long-term operation), antenna (preferably some type of base antenna with mast). Shelter could be RV, trailer, tent or car camping. Be aware that temperatures can vary widely this time of year so be prepared for warm days and very cool nights. This is a really fun event and you won't want to miss out on being a part of it.
Race information can be found at

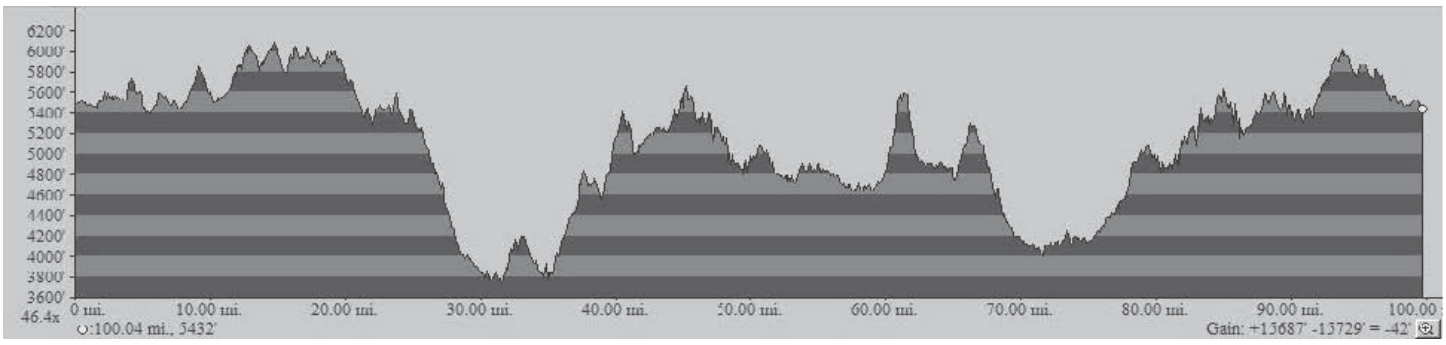
http://sandiego100.com

Any interested party should contact Ellen N6UWW at amsat.org or Wild Bill WB6BFG at amsat.org and provide the following information:

- length of shift available
- location preference
- shelter
- radio equipment capabilities

All efforts will be made to ensure that the early birds will get the worm as far as shift & location preferences. Ω

Elevation changes in the San Diego 100 Endurance Run. Image from http://www.sandiego100.com/Course/SD100_Maps.pdf



Dayton Hamvention

Report from the Front Lines

by Howard KY6LA

The last of The Dayton Express finally arrived home at 6PM Monday night. The trip was a combination of a Fraternity Party Road Trip and a Learning Experience. At times, the events degenerated to juvenile antics that would have embarrassed my 6 year old grandson as the mental age of the participants hovered between 6 and 9 years old. But with only one close call, no one was arrested, and a very, very good time was had by all.

As may be aware KY6LA, K6BK, WA3IHV, KC6B, N6XT, N6ERD, KD6AKT, KM6AW,N6EXV, WA6OYA(AK6AK). VE3GXR went to Dayton together. The group consisted of DX'ers and D-Star Guys who we promptly nicknamed the "Dark Side". Only KY6LA, K6BK, WA3IHV and VE3GXR had been there before.

The trip cost about $700 including Air, Hotels and Private Chauffeured Coach (I drove) plus lots of good meals (Food and too much Booze Extra).

Since I had left for Paris on April 28th, I have been away from San Diego for almost 3 weeks as today is my first full day back home. I actually got back from Paris about 2 AM on the 13th so that I could join the guys on the 11:15 AM flight. Of course, everything was delayed all the way along, so we got into our hotel in Dayton about 1 AM Friday the 14th.

Along the way, K6BK decided that Allen WA6OYA who had just passed his extra needed a new call sign so we grabbed his FRN password and applied for AK6AK. I bought him a new AK6AK hat in case the call sign was approved. About 2 AM we had a very late dinner in the only restaurant that was open, where the waitress recognized us as the only guys who tipped from last year.

FRIDAY MAY 14TH

Friday AM Breakfast at the hotel. I was running on adrenalin from all the jet lag. We hit the show about 10am. For once the weather [IT ALWAYS RAINS AT DAYTON] cooperated and for the most part the rains stayed away. The morning was spent in the flea market where N6TX and I got Aluminum Welding Rod and I bought miles of Silicon Sealing Tape for SteppIR's as well as my usual shirts. The guys seemed to pick up all sorts of weird odds and ends. The interesting forums are usually on Friday afternoon and this year was no exception. I attended the Ham Law Forum, the SDR Forum, the Antenna Forums and the Dark Side guys attended the Dark Side Forums.

If you have never attended Dayton, it is huge. The group tried to take as many pictures as possible so that you could get a better Idea of what was there. You really cannot see everything in 3 days. There is far too much to see if you wish to do it justice.

We then started to tour the inside exhibits but we quickly ran out of time.

Dinner was back in Miamisburg at the Rue Dumain, a very good French Bistro restaurant. I had duck breast with fries - sort of like France! The wine was a pretty good Malbec. We definitely drank a lot of wine.
Needless to say KC6B drove the bus back.

SATURDAY MAY 15TH

Breakfast again at the hotel, arrived at the show an hour earlier, since we had a bus we got to park next to the show. I think they thought we were an official bus, but we were not going to tell them different especially since I was the bus driver.

Today seemed to be a day for buying, albeit the prices got even better on Sunday. EVERY major and minor vendor was at the show: AES, HRO, MFJ, FLEX, K3, ICOM, YAESU, KENWOOD, DX ENGINEERING, STEPPIR, ARRL, HEIL etc, etc. Prices were VERY Competitive. Ron N6XT priced a FT-5000 about $1,000 less than in SD. We all said hello to Jose from HRO but AES seemed to be beating his best quotes. I helped W6VOL who was in SD get a fabulous price on a Ameritron AS600 Amp. We bought a rare Vibroplex Key for W5BN in SD.

There was a huge amount of stuff to see, lots of new products and lots of really cool stuff.

The Dark Side guys were fascinated to meet and have their pictures taken with Connie, the queen of the Dark Side.The Ozark Mountain D-Star Net - also known as "Connie's Net" arguably the very most successful net in D-Star due to the omnipresence of the net control station and the reigning Queen of D-Star Connie KB0ZSG

The DX'ers were fascinated to meet with Bruna Begali, president of Begali Keys. They (K6BK, N6XT, WA3IHV) bought a lot of her exquisite but very expensive keys ($200 - $500) from her.

The recurring theme at the show was the continued dominance of the US Based SDR's vs the old line Japanese Rice Boxes. The action was visible at

the Flex booth which was mobbed again this year. Kenwood was dead as a door nail, Yaesu had some stuff but was only busy because they gave away free hats, Icom had lots of products but again, was constrained by their elderly technology.

Flex was showing their $600 SDR 1500 transceiver and K6BK bought one.

Perhaps one of the more interesting vendors in the main hall was Bonita Software who make the Radiocom 6.0 Software. We called it the SDR Training Bra because it allowed you to convert an obsolete radio such as an Icom IC-7700 into a modern SDR by using software to emulate many of the SDR features for only about $200 including cables. A number of guys (KM6AW, AK6AK, WA3IHV, KC6B) in the Dayton Express bought the Radiocom product.

It was pretty obvious to many of us at the show that if the Rice Boxes do not switch to SDR soon, they are going to be left in the dust.

Luso Towers were there and they sold their 150' model on the floor. And, took orders for several more while I watched and dreamed about how my neighbors would love to look at those gorgeous towers.

Bought my usual compliment of Ham Radio clothes, lots of software packages and a huge variety of random stuff, my large suitcase was overweight.

Met with the SteppIR guys to talk about the possibility of a new design idea for WA3IHV. Mike will get back to us if it is feasible.

Ran into Pat WA6MHZ who was looking fit, skinnier and very happy indeed with all the stuff he had purchased. Some of the Dayton Express Dark Side Guys were ambushed by "He Who Shall Not Be Named" who everyone had tried to avoid.

We left the show at about 5PM. We were exhausted to say the least. The bus was crammed with stuff. Everyone's wallets were a lot lighter. Ron N6XT had to make a Wallet Pit Stop a couple of times at the ATM.

Dinner was at Carvers, a very good steak house. Wines were a fairly good Cotes de Rhone. We drank a lot and Bob N6EZV was the designated Bus Driver

SUNDAY MAY 16th

Checked out of the Doubletree Miamisburg, dropped Bob N6EZV (ex US Air Pilot) who was flying space available at Dayton International Airport and proceeded to the show. Some vendors had left. Boys wanted to talk to M2 about heavy duty rotors but they had left. I bought DX Engineering coax cable tools from DX Engineering, Ron N6XT bought drills. We seem to have loaded up on even more and more stuff. So much so that we had to ship via UPS who were at the show - still my bag was over 50 lbs!

Never did get to see everything. There is just too much to see and do in 3 days at Dayton.

Show ended at 1PM. We went to the arena where they redraw the unclaimed prizes and the big prizes. Only Bob N6EZV won anything and he was not there anymore so I shipped it to him.

Went to airport at 3 PM. plane delayed from 6 PM to 8PM so we missed 7:25PM connection to SD. We had to stay the nite in Dallas. No problem! We just partied on.

American Airlines put us up at some flea bag motel, but it was near a bar called "Toadies" so at midnight we had a very late dinner and lots and lots of beer. The buxom blond Waitress "Page" gave her number to the only single guy…Ron N6XT. The party continued.

Monday May 17th

We got split up onto several different flights. One of our group had a bit of excitement going through security again at Dallas but managed to avoid getting on anyone's radar. N6XT, K6BK, KC6B and I finally got home about 6PM Monday.

Perhaps the best thing about Dayton is that everyone is there. There are so many different experts in so many different fields that you can quickly get answers to many technical issues.

Needless to say we all had a lot of fun. We were rather juvenile at times, but no real harm done.

Next Year Dayton Express Leaves San Diego Thursday May 19th 2011.

Everyone said they were planning to return. Ω

Above, a 75m man pack at Dayton Hamvention 2010. Photo by KY6LA.

Upcoming Events

VHF Contest June 12 & 13

http://www.arrl.org/june-vhf-qso-party

Good "warmup" for Field Day.

Club Survey

Please Complete and send to scope@palomararc.org

I work: (circle as many as apply)
HF 6m 2m and up ATV satellite

other:

I would like to work: (circle as many as apply)
HF 6m 2m and up ATV satellite

other:

I would like to learn about...
Programs I would like to see are...
I enjoyed programs either about or by...
How can PARC and it's members help you?
Is there something you can offer to help PARC?
What do like about PARC?

OPTIONAL
Your name, call, and contact information and preferences, in order to continue the conversation.

Thank you!

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Editor: Michelle Thompson W5NYV
Submissions: scope@palomararc.org
Questions? Ideas? Comments? W6NWG@amsat.org

Featured Program:

At 7:30pm, Palomar Amateur Radio Club will present a Field Day program at the monthly membership meeting on 2 June 2010.

Arrive at 7:00pm to socialize.
We look forward to seeing you at the Carlsbad Safety Center, 2560 Orion Way, Carlsbad, CA.

SCOPE

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

Photographs from the April 2010 membership meeting. Photos taken by Paul KB5MU.

Save the Date

Club Meeting
7 July 2010

Program at 7:30pm presented by Marty Woll N6VI.

Board Meeting
14 July 2010

Palomar Amateur Radio Club board meeting at 7:00pm at K2RP QTH

Field Day
18 July 2010

Low Power Field Day

Membership

New Members Joining PARC:
N6JO, KE6KFW, KF6UVF, W6FM, KJ6FTX, KJ6GOQ KJ6DPR and KJ6HCT
And thirteen "old" members reinstated their membership.
Last month we sent postcard "reminders" to those that didn't renew their memberships last year. (It appears that it was quite successful.)

Here is the list of members receiving the SCOPE on the web, that "expired" in the last month or so. Please check this list, and get your renewal checks in the mail!
Pretty PLEASE!!! WD6FZA, AF6JN, N6TWO, KG6HKM, K6WSC, KI6JTC, and KE6AFH.

Al
W6GNI

Upcoming General Meeting Topics
July program will be Marty Woll, N6VI, asst. Southwest Director
Month TBD - Lin Robertson KJ6EF – Vintage broadcast radios
Month TBD David Doan KC6YSO "AM and other boat anchors"
Month TBD - AK6QJ – Subject TBD

June Fold & Staple Crew
W6GNI Al & Kathy
KB6YHZ Art & Janet
KB6NMK Jo Sonny WA5ACE

2010 ARRL Southwestern Division Convention

September 17, 18 & 19, 2010

San Diego, California

Four Points Hotel Sheraton, San Diego

It's time for one of the best ARRL Conventions on the West Coast! Come see the Ham Gear and take in the sights of Sunny San Diego!

For up to date information about the Convention, please visit us at the website: www.sandarc.org/Click on Convention Button.

Contact Person: Paul KC6QLS at (619) 593-9445 or Email at kc6qls@cox.net

See you at the Convention!

Advertisements are free for members.

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

For Sale

Item	Price
YAESU FT-1000	$2,500.00
Kenwood TS-950 S	2,500.00
FT-2500 M	350.00
Kenwood SWR/PWR Meter, Model SW-2000	50.00
TR-7330 2 M	150.00
Astro PS7 A	25.00
Cubic Astro -150 A-10-80M Transceiver	250.00
Ten-Tec Centuriom amp 1kw	1,500.00
Ten-Tec Titan amp 1kw	2,500.00
FLUKE Meter Model 77	65.00
SHURE Microphone Push to talk Modle 444	30.00
3-500 tubes	100.00 ea.

Contact: R. F. Krist, W6KTE, (760) 724-2786

For Sale
Crank-up tower, 4 sections (collapsed length=12' 9"), triangular- 18" bottom to 10" top. 3' top bolt on tapered section with rotor head and thrust bearing installed + 6' of pipe above the taper. Base plate 22" x 22" with 3 spuds to set tower on.Lifting winch had a motor at one time but now gone, leaving a spline shaft sticking out of the worn gear box to which a handle or motor can be grafted. Located in Poway , weight 400=/- lbs for tower alone and 150+/- lbs for the top piece, base plate and winch - $250. Gary 858-748-6076 wb6gsn@gmail.com

For Sale: HUSTLER 6BTV High Performance HF Vertical Antenna system, 80/75/40/30/20/15/10 m, complete with 250ft spool 14 ga wire and all precut radials, SS Tilt base and SS Radial plate. Used one year. Bought new at $400, will sell for $200. contact: Rich Ortloff KE6DUG 760-861-1406

For Sale: 6BTV Vertical Antenna. Crank up Tower with rotor and 3 El Yagi. Must be taken down and removed. Call Lee, (760) 726-1097

HRO is **sponsoring a class** for newly licensed hams. This will give info on what to do with new license, programming transceivers, etc. Contact Joe at HRO for details. (858) 560-4900

HRO is **sponsoring a parking lot swap meet** on July 10 from 7:30 to 2:00. Call there to reserve spaces. (858) 560-4900

Volunteer at the Del Mar Fair!

Dear SANDARC Delegates:

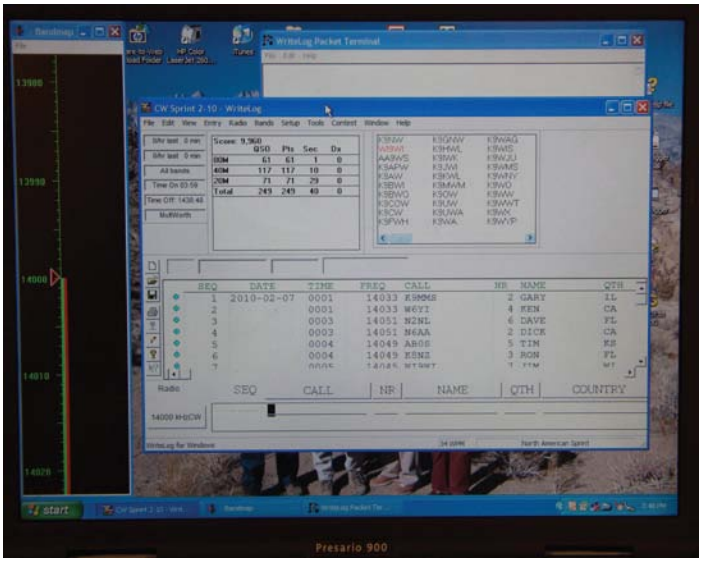
I have posted the schedule of the Del Mar Fair at www.sandarc.org. Go there and click on calendar. If your club can work any days please contact Paul KC6QLS at **kc6qls@cox.net** and send me the day and shift you like to work.

Please ask your club to pick some days that they will cover. We need to fill in all the days. Last year Steve and myself worked well over 20 days and most were both shifts.

The Del Mar Fair runs from 6/11 to 7/5 and the shifts are 10am to 2pm and 2pm to 5pm. Your pass and code will be at WILL CALL at the main gate and you can get in early!

Radio, antenna and pass to get in are provided. Send me a list of Name, Call and Shift (s) and contact information!

Paul KC6QLS
Vice Chair SANDARC



Photos from the April "Contesting 101" program, presented by Dennis N6KI and John K6AM. The shots of the computer screens are showing the different contesting logging programs that were demonstrated at the meeting. Photos by Paul KB5MU.

May Board of Directors Meeting Minutes

The meeting was called to order at 7:07 PM by President Dennis Baca KD6TUJ. The meeting was held at the home of Ron Pollack K2RP. Present at the meeting were:

President Dennis Baca KD6TUJ
Vice President Ron Pollack K2RP
Secretary Gary Kent W6GDK
Director #1 Paul Williamson KB5MU
Director #2 Conrad Lara KG6JEI
Membership Al Donlevy W6GNI

Treasurer's Report The treasurer's report was not available as of meeting date

Secretary's Report- Minutes of the April meeting were presented by W6GDK. There was one correction regarding the 111 cards that Al was sending out for renewals. His request was approved. No other changes. Motion to approve by KB5MU, second by K2RP. Approved

General Meeting: June meeting will be on Field Day preparations. For July, it is hoped to have Marty Woll, N6VI on batteries.

Membership Report: Current membership is 276.

Repeater Site/Technical Report: A problem with the 146.73 machine was fixed. There was a bad trace causing low audio levels on transmit. The packet password has been reset, but aliases are still needed.

NEW business:
Del Mar fair is coming up, and SANDARC is now booking slots for clubs to run the usual ham radio booth.

We got a convention ad from KC6QLS to run in the Scope.

The afghan contributed by Rusty Kalkofen AF6WF will still be available for raffle at meetings.

Don Johnson, WD6FWE, gave an excellent presentation on ham radio to Adobe Bluffs elementary school.

The 146.73 machine use was requested by Steve Early AD6VI Section Manager for the Golden Guardian exercise on May 18. Dennis KD6TUJ gave approval for this use.

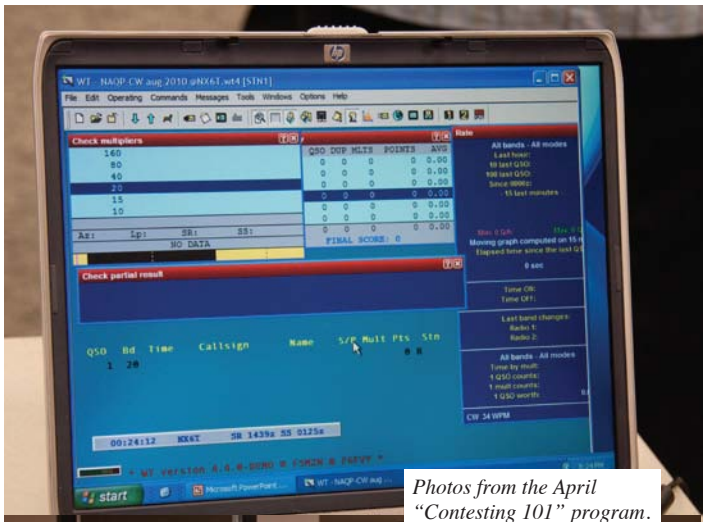
Field Day – planning is progressing on our Field Day effort at the home of Nash Williams, W6HCD in Bonsall. This effort is being coordinated by Ron Pollack, K2RP and Dennis Vernacchia N6KI. There will be a Field Day net on Wednesday evenings at 8PM on 146.73. Directions will be posted.

OLD Business: None

Motion to adjourn at 8:22 PM by W6GDK, second by KG6GEI. Approved

Next meeting will be at home of Ron Pollack K2RP on June 9, 2010 to start at 7PM or thereabouts

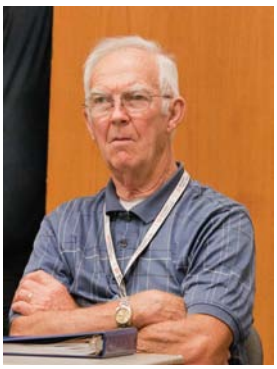
Submitted by Gary Kent W6GDK



Photos from the April "Contesting 101" program. Photos by Paul KB5MU.

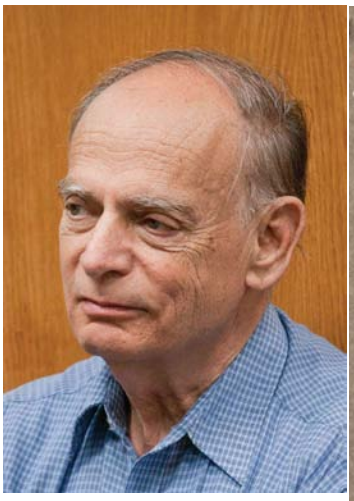
The April PARC memberhip meeting was dedicated to the basics of Contesting. A fundamental part of contesting is scrupulous log-keeping. Computer-based log-keeping is considered to be the best method.

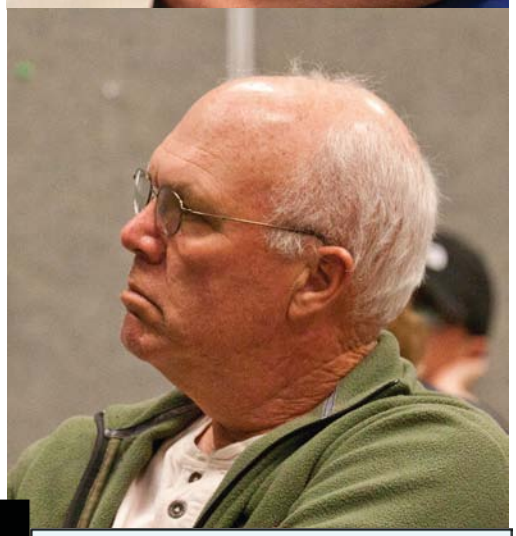
There are several options available for computer-based log-keeping, and some of those options are pictured in this issue of the Scope. Most contest logging programs have functionality that allow for data entry and offer multiple options for changing the band and mode, checking for spots, organizing and (occasionally) visualizing the data and call sign error checking.



Some logging programs can be used over networked computers. This allows them to be linked together as a site logging system.

Photos from the April PARC meeting by Paul KB5MU.



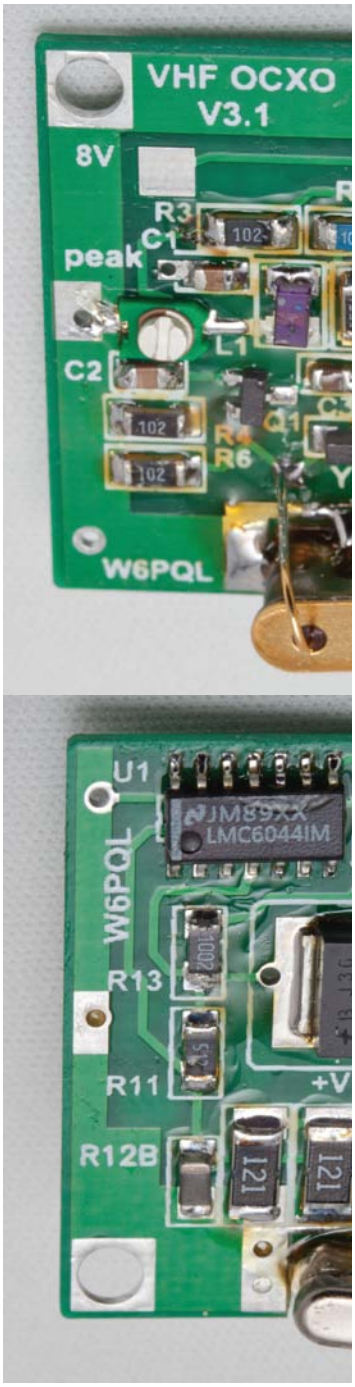


10GHz Station Progress Report
Codename: Hello Giggy

by Michelle W5NYV

Members of the San Diego Microwave Group (SDMG), along with other amateur radio microwave enthusiasts all over the country, are gearing up for the fall microwave contest season. Operators are getting their rigs checked out at events such as the traditional range party at Kerry Banke's QTH. Kerry N6IZW hosts most meetings of the SDMG, and has generously provided parts, surplus gear, expertise, and test equipment to many local hams.

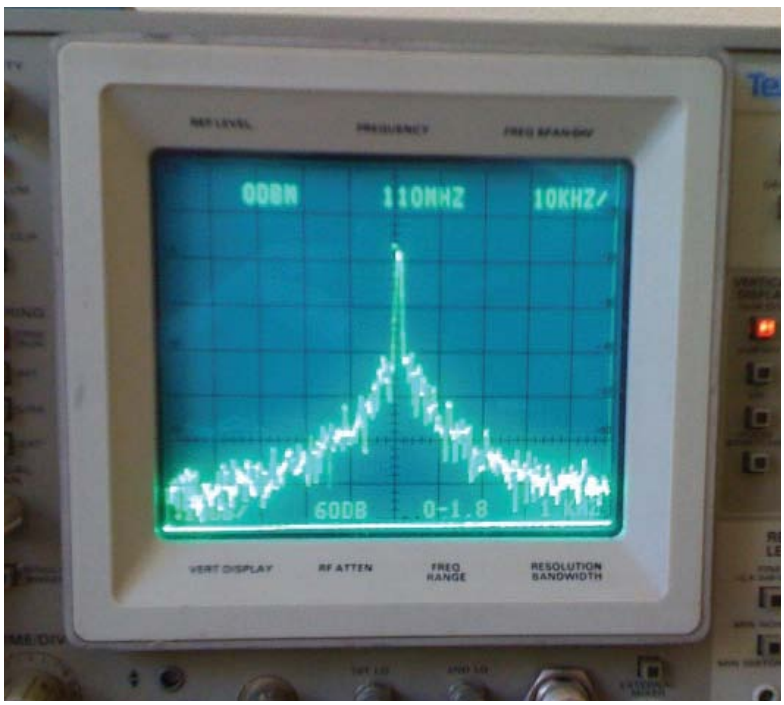
Most of the 10GHz rigs are transverters. An intermediate frequency (IF) rig, such as a Yaesu FT-817, is usually employed as the baseband-to-IF stage. A transverter takes the IF up to RF microwave bands, and then the signal is routed to the antenna, usually a dish. Most stations are unique creations, with surplus or kit-based transverters in custom or repurposed enclosures. Dishes from a wide variety of sources make for a very interesting visual array at a contest or range test. It is very typical for the entire station to rest upon a tripod of some sort, with some way to adjust azimuth and elevation. For the most part, these stations are portable designs, and are battery powered.



To the right are photographs of the two sides of the fully populated VHF OCXO from W6PHL. This surface mount kit implements an oven-controlled crystal oscillator circuit. Crystal is purchased separately. The exact value depends on the application. In this build, a 106.5 MHz crystal was used. Photos by Paul KB5MU.

For my 10GHz station, I built a transverter kit (the G2) from DB6NT. A fellow PARC member was kind enough to loan me an FT-817 as an IF rig. The kit I selected required an external oscillator.

The first oscillator, a programmable digital oscillator kindly programmed and given to us from another club member, had way too much phase noise! We used it to get the station pulled together in time for last year's range party. Analyzing the phase noise after it failed to receive the transmitted test signal revealed that the carrier from the DB6NT transverter was at best 40dB below the noise. We were able to tell that there was a received signal in there when other people transmitted at the range party - it was just about 150kHz wide.

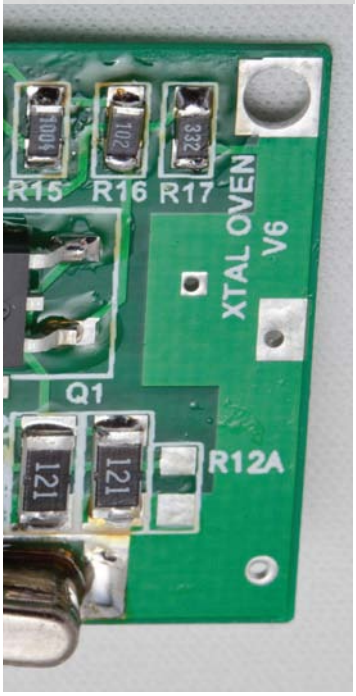


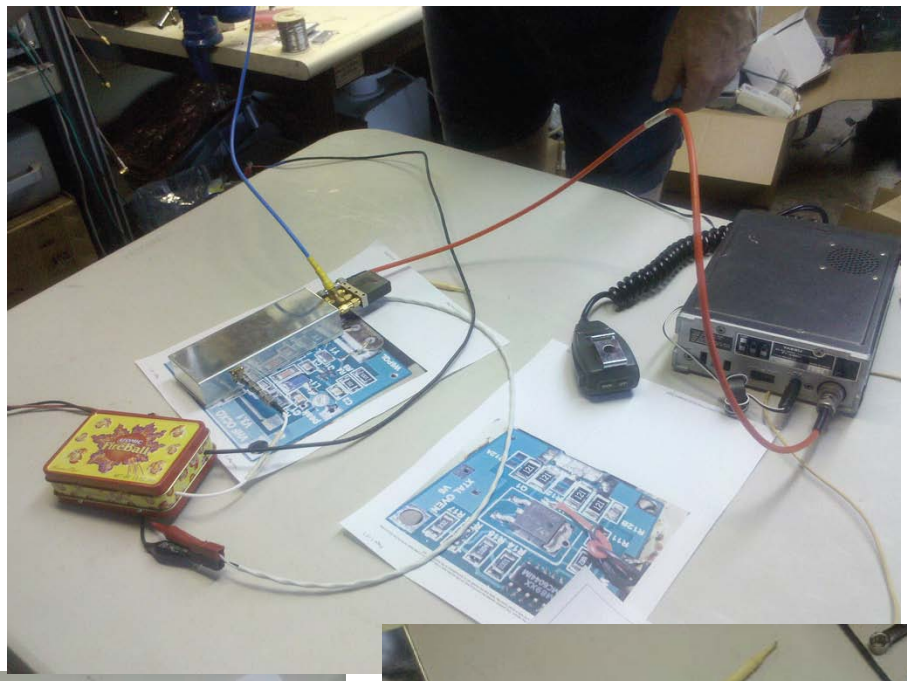
To the left is a spectrum of the programmable oscillator used at the range party. The spectrum of the OCXO kit that I built as a replacement was much improved. I favor crystals over synthesizers, and want to compare the OCXO to the synthesizers that many of the SDMG use in their rigs.

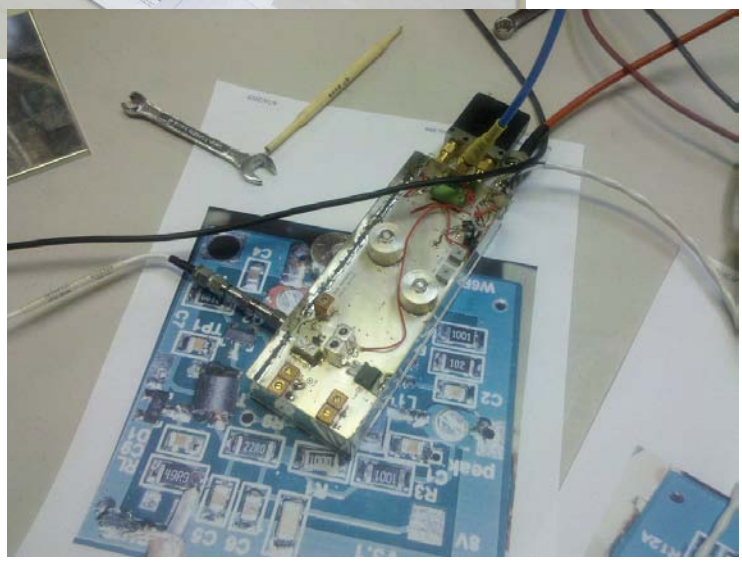
On the facing page are photographs from the test session at Kerry's QTH. The yellow and red enclosure for the OCXO is an Atomic Fireball mini-lunchbox, continuing a theme from Field Day a few years back (we did the Atomic Cafe). The interior of the transverter kit can be seen on the lower right. At the upper righthand side of the facing page, the results from the first pass on the frequency counter.

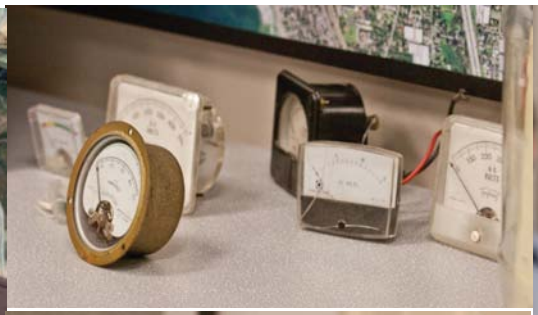

C6 C5
OUT
49R9
RL
C9
D1
22R0
R9
T1
R7
net
Q2
TP1
C7
2490
R8
C4

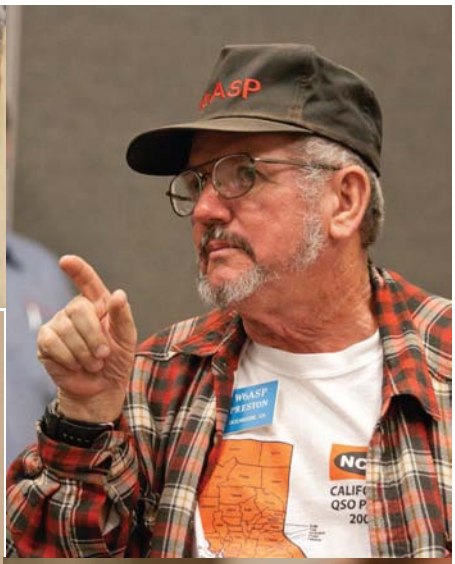

UNIVERSAL TIME INTERVAL COUNTER
106 500 137 838
FUNCTION
STATISTICS
SAMPLE SIZE
ARMING
LEVEL
LEVEL
117000
D132/134
SPARE


R15 R16 R17
XTAL OVEN
V6
Q1
R12A



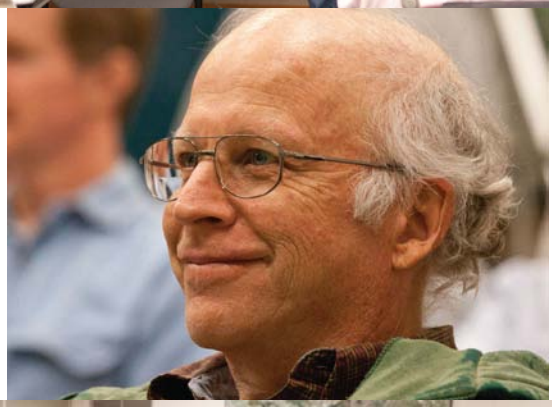






Photos from the May PARC meeting by Paul KB5MU. Rusty AF6WF created an afghan for the club raffle. The program was about Repeaters and was presented by Art KC6UQH.


USED IN THE AMATEUR RADIO
SERVICE

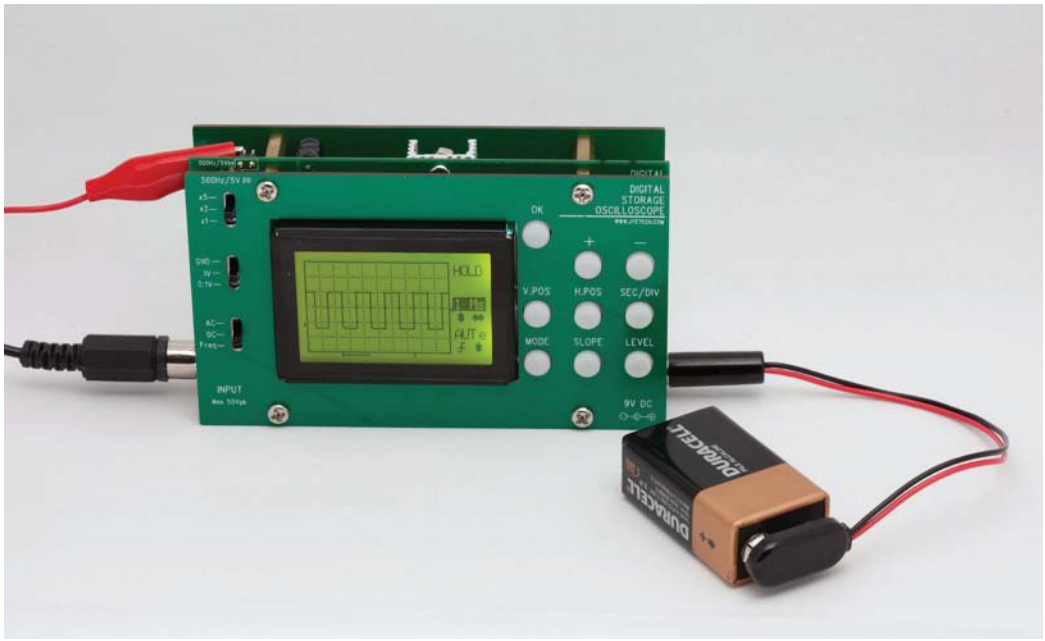


Surface-Mount Oscilloscope Kit

by Paul KB5MU

I love building kits. I built a few of the legendary Heathkit products before their lamented demise, and as many of the fantastic kits from Elecraft as I could justify. Unfortunately, Elecraft is not alone in their belief that the amateur kit-builder can't be trusted with modern surface-mount assembly. Their kits all use through-hole circuit boards, except the latest K3 which is offered as a "no-solder kit". That means you get to assemble the chassis but don't get to build any of the electronics modules. Where's the fun in that?

There's nothing wrong with a through-hole kit, but these days some of the most interesting parts are only available in surface-mount packages. I'm fascinated by the capabilities of modern microcontrollers, for instance, and many of them have never been made in a through-hole package.



There are a few surface-mount kits out there. Here's one example I recently built up. It's a complete digital storage oscilloscope on a single circuit board, with two other boards serving as front and rear panels. It has an analog bandwidth of 1 MHz, and samples at up to 5 MHz. It has all the basic trigger modes, including external, and can save six captured waveforms and transfer them to a computer via a serial connection. It even includes a test oscillator that you can use to check out its functions. That's a useful set of capabilities. Beyond the state of the art ... as of 1970 or so. While it's not competitive with modern oscilloscopes from Tektronix, it's also a lot cheaper, and you get to build it yourself.

I got mine from Seeed Studio

www.seeedstudio.com

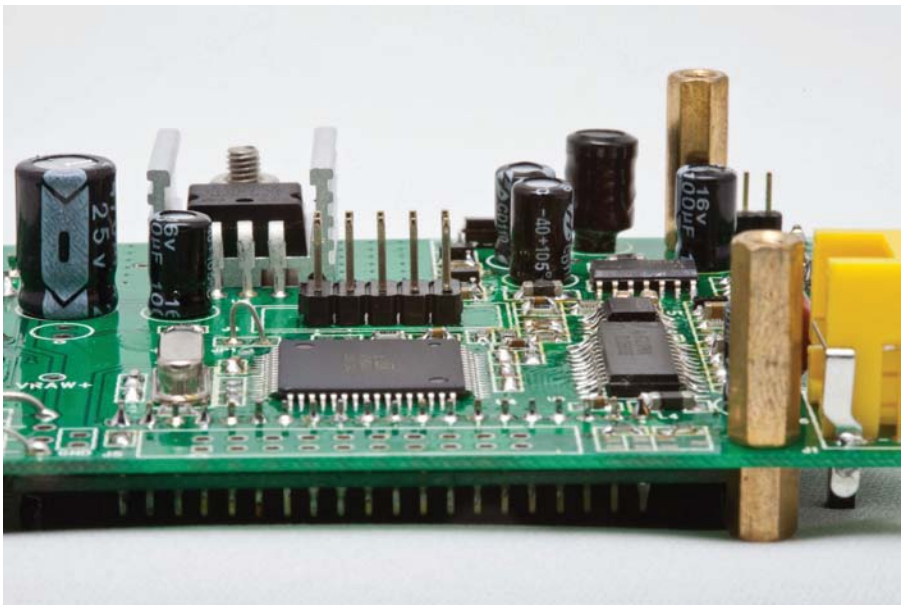
where the slogan is "Electronics can be art." They're also one of many sources for versions of the popular Arduino design for a tiny single-board computer based on the ATmega microcontrollers from Atmel (see www.arduino.cc for more). They describe my kit as "Digital Storage Oscilloscope DIY Kit with Panels" (TOL107C3M) and sell it for $49.95. That's cheap! They do pre-solder the microcontroller itself, alas, but there are still several ICs and lots of tiny resistors and capacitors and such for you to solder yourself.

If you're in agreement with Elecraft that surface-mount soldering is too hard, and you still want to build this kit, you can order it from SparkFun Electronics. They call it "Digital Oscilloscope DIY Kit" (KIT-09484) and sell it for $59.95 with all the surface-mount components pre-soldered. That leaves you with a handful of through-hold capacitors, diodes, the voltage regulator, and all the connectors and switches to solder.

You can also order it either way, or completely assembled and tested, directly from the company whose URL is printed on the circuit board: JYETECH (www.jyetech.com).

Unless your eyes are sharper than mine, you'll need some magnification to build at this scale. I'm a believer in having great tools, so I have one of these zoom stereoscopes. This is one of the cheaper ones, available locally at Scope City. It's really amazing how the brain is able to adapt to working under magnification. Your hands are steadier than you think they could possibly be, once you can see what you're doing.

And yes, the oscilloscope did work the first time I powered it up.



Having the right tool for the job is key. For constructing surface mount kits, some form of magnification is a powerful tool. Pictured above is the surface mount oscilloscope kit board, fully populated, and the stereoscope used to construct it. Photos by Paul KB5MU. Below, Field Day 2010 photos by KC6VDX.

Field Day Preparations

by Ron K2RP

On 20 June 2010 a work party was at the Field Day site to prepare and test the towers and antennas. All is progressing well, thanks to this group:

N6KI, K6KAL, AF6WF, WD6FWE, K4RB, WB6IQS, KJ6RET, KC6UQH, KG6JEI, and K2RP.

The whole crew worked very hard, but a few special thanks are in order. Art, KC6UQH, for bringing his "magic truck" with front hitch to put the trailers in place. John, WB6IQS, for bringing his knowledge of our towers and beams. He's the expert! Conrad, KG6JEI, for bringing a truckload of supplies.

And last but certainly not least to:

"Dennis of the South," N6KI, for all the planning, site selection, vast knowledge of everything, caring, and dedication. It truly could not have happened without him!

"Dennis of the North," KD6TUJ, although he wasn't able to be here on Sunday, made two trips last week to deliver our trailers with the antennas and towers.

Thanks to all, and we're looking forward to a great time at Field Day! Photos to the right submitted by KD6TUJ. Photos below from KC6VDX.

Preliminary Report

by Michelle W5NYV

The club operated Field Day (June 26-27) from Dennis N6KI's new favorite location, the hilltop home of Nash W6HCD in Bonsall. Ron K2RP coordinated logistics. The club participated in class 6E. The views were magnificent and the weather was almost perfect. The property has very interesting landscaping with many native plants. Stations were set up outside in either trailers brought to the site or on verandas and porches. Work continued Saturday on refining the collection of antennas and getting the most out of the stations. More to come in the August Scope.

Crystal Oven

From Wikipedia, the free encyclopedia
http://www.wikipedia.org

A crystal oven is a temperature-controlled chamber used to maintain the quartz crystal in electronic crystal oscillators at a constant temperature, in order to prevent changes in the frequency due to variations in ambient temperature. An oscillator of this type is known as an Oven-Controlled Crystal Oscillator (OCXO, where "XO" is an old acronym for "crystal oscillator".) This type of oscillator achieves the highest frequency stability possible with a crystal. They are typically used to control the frequency of radio transmitters, cellular base stations, military communications equipment, and for precision frequency measurement.

Description

The frequency at which a quartz crystal resonator vibrates depends on its physical dimensions. A change in temperature causes the quartz to expand or contract due to thermal expansion, changing the frequency of the signal produced by the oscillator. Although quartz has a very low coefficient of thermal expansion, temperature changes are still the major cause of frequency variation in crystal oscillators.

The oven is a thermally-insulated enclosure containing the crystal and one or more electrical heating elements. Since other electronic components in the circuit are also vulnerable to temperature drift, usually the entire oscillator circuit is enclosed in the oven. A thermistor temperature sensor in a closed-loop control is used to control the power to the heater and ensure that the oven is maintained at the precise temperature desired. Because the oven operates above ambient temperature, the oscillator usually requires a warm-up period after power has been applied.[1] During this warm-up period, the frequency may not be fully stable.

AT- or SC-cut crystals are used. The SC-cut has a wider temperature range over which near-zero temperature coefficient is achieved and thus reduces warmup time.[2] The temperature selected for the oven is that at which the slope of the crystal's frequency vs temperature curve is zero, further improving stability. Power transistors are usually used for the heaters instead of resistance heating elements. Their power output is proportional to the current, rather than the square of the current, which linearizes the gain of the control loop.[3]

A common temperature for an crystal oven is 75 °C.[4] But may vary between 30 - 80 °C depending on setup[5]. However a standard commercial crystal may specify an environmental temperature of 0 - 70 °C, with an industrial version range of -40 - +85 °C.[6]

Accuracy

Because of the power required to run the heater, OCXOs require more power than oscillators that run at ambient temperature, and the requirement for the heater, thermal mass, and thermal insulation means that they are physically larger. Therefore they are not used in battery powered or miniature applications, such as watches. However, in return, the oven-controlled oscillator achieves the best frequency stability possible from a crystal. The short term frequency stability of OCXOs is typically $1x10^{-12}$ over a few seconds, while the long term stability is limited to around $1x10^{-8}$ (10 ppb) per year by aging of the crystal. Achieving better performance requires switching to an atomic frequency standard, such as a rubidium standard, caesium standard, or hydrogen maser. Another cheaper alternative is to discipline a crystal oscillator with a GPS time signal, creating a GPS Disciplined oscillator (GPSDO). Using a GPS receiver that can generate accurate time signals (down to within ~30 ns of UTC), a GPSDO can maintain oscillation accuracy of 10^{-13} for extended periods of time.

Crystal ovens are also used in optics. In crystals used for nonlinear optics, the frequency is also sensitive to temperature and thus they require temperature stabilization, especially as the laser beam heats up the crystal. Additionally fast retuning of the crystal is often employed. For this application, the crystal and the thermistor need to be in very close contact and both must have as low a heat capacity as possible. To avoid breaking the crystal, large temperature variations in short times must be avoided.

1 Glossary. Time and Frequency Division, NIST. 2008. Retrieved 2008-08-07.

2 Marvin E., Frerking (1996). "Fifty years of progress in quartz crystal frequency standards". Proc. 1996 IEEE Frequency Control Symposium. Institute of Electrical and Electronic Engineers. pp. 33–46.

3 Marvin E., Frerking (1996). "Fifty years of progress in quartz crystal frequency standards". Proc. 1996 IEEE Frequency Control Symposium. Institute of Electrical and Electronic Engineers. pp. 33–46.

4 "Temperature Controller for Crystal Oven". 091117 freecircuitdiagram.com

5 "EKSMA OPTICS - manufacturer of laser components - Oven for Nonlinear Crystals TK7". 091117 eksmaoptics.com

6 "IQXO-350, -350I Commercial Oscillator". 091118 surplectronics.com

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Editor: Michelle Thompson W5NYV
Submissions: scope@palomararc.org
Questions? Ideas? Comments? W6NWG@amsat.org

Featured Program:

At 7:30pm, Palomar Amateur Radio Club will host a program at the monthly membership meeting on 7 July 2010. The program will be presented by Marty Woll N6VI, asst. Southwest Director of ARRL.

Arrive at 7:00pm to socialize.
We look forward to seeing you at the Carlsbad Safety Center, 2560 Orion Way, Carlsbad, CA.

SCOPE

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

Club Picnic

The annual Palomar Amateur Radio Club Picnic will be on Sunday, August 29th at San Dieguito County Park, area 4. The park is located at 1628 Lomas Santa Fe Drive, Del Mar, CA 92014.

Thomas Brothers map page: 1167-J6

Park hours are 9:30 a.m. - dusk and we probably use them all. An operating station will be on site.

This is the place for you to redeem those participation points earned as a result of your going to meetings and events sponsored by the club. Participation points become tickets for the drawing. We always have a variety of fun and exciting prizes for the drawing. A maximum of 20 participation tickets will be allowed to a person.

10GHz and Up Contest

Work as many North American stations as possible on frequencies from 10GHz to light during contest days and hours. Contact Michelle W5NYV@amsat.org (put 10GHz in subject) if you would like to participate but need some encouragement. 21-22 August 2010.

Look who won the raffle at the club meeting! Photo above left taken by Paul KB5MU at the July Membership meeting. Our lucky winner was also at Field Day. Photo below left taken by W5NYV.

Save the Date

Club Meeting
4 August 2010

Program at 7:30pm
Ed KG6UTS presents on Military Radios

Board Meeting
11 August 2010

Palomar Amateur Radio Club board meeting at 7:00pm at W6GNI QTH

Club Picnic
29 August 2010

Club Picnic Area 4 at San Dieguito Park. 9:30am-dusk. Drop in anytime!

Recipes

by Jamie Boudreau - The Rosewater Rickey

brulee in bottom of mixing glass:
5 cherries
bar spoon of sugar
flamed angostura mist

fill with ice and add:
3 oz gin
1 bar spoon of rosewater
1/2 oz fresh lime juice
shake and strain into an iced Collins glass
top with soda water

garnish with brandied cherries

Enjoy before the California QSO party, coming up in October, along with our club auction.

Upcoming General Meeting Topics
Month TBD - Lin Robertson KJ6EF – Vintage broadcast radios
Month TBD David Doan KC6YSO "AM and other boat anchors"
Month TBD - AK6QJ – Subject TBD

July Fold & Staple Crew
W6GNI Al & Kathy
WA5ACE Sonny
KB6YHZ Art & Janet
KB6NMK Jo & Toby

2010 ARRL Southwestern Division Convention

September 17, 18 & 19, 2010

San Diego, California

Four Points Hotel Sheraton, San Diego

It's time for one of the best ARRL Conventions on the West Coast! Come see the Ham Gear and take in the sights of Sunny San Diego!

For up to date information about the Convention, please visit us at the website: www.sandarc.org/Click on Convention Button.

Contact Person: Paul KC6QLS at (619) 593-9445 or Email at kc6qls@cox.net

See you at the Convention!

Advertisements are free for members.

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

For Sale

Item	Price
YAESU FT-1000	$2,500.00
Kenwood TS-950 S	2,500.00
FT-2500 M	350.00
Kenwood SWR/PWR Meter, Model SW-2000	50.00
TR-7330 2 M	150.00
Astro PS7 A	25.00
Cubic Astro -150 A-10-80M Transceiver	250.00
Ten-Tec Centuriom amp 1kw	1,500.00
Ten-Tec Titan amp 1kw	2,500.00
FLUKE Meter Model 77	65.00
SHURE Microphone Push to talk Modle 444	30.00
3-500 tubes	100.00 ea.

Contact: R. F. Krist, W6KTE, (760) 724-2786

For Sale
Crank-up tower, 4 sections (collapsed length=12′ 9″), triangular- 18″ bottom to 10″ top. 3′ top bolt on tapered section with rotor head and thrust bearing installed + 6′ of pipe above the taper. Base plate 22″ x 22″ with 3 spuds to set tower on. Lifting winch had a motor at one time but now gone, leaving a spline shaft sticking out of the worn gear box to which a handle or motor can be grafted. Located in Poway, weight 400+/- lbs for tower alone and 150+/- lbs for the top piece, base plate and winch - $250. Gary 858-748-6076 wb6gsn@gmail.com

For Sale: HUSTLER 6BTV High Performance HF Vertical Antenna system, 80/75/40/30/20/15/10 m, complete with 250ft spool 14 ga wire and all precut radials, SS Tilt base and SS Radial plate. Used one year. Bought new at $400, will sell for $200. contact: Rich Ortloff KE6DUG 760-861-1406

For Sale: 6BTV Vertical Antenna. Crank up Tower with rotor and 3 El Yagi. Must be taken down and removed. Call Lee, (760) 726-1097

Recommended Remote Reading

by Roger AD5T

A new book, Remote Operating for Amateur Radio, was recently published by the ARRL. Covering a method widely regarded as a way to work around neighborhood antenna and tower restrictions, the book shows how improvements in both the throughput and availability of broadband Internet access have enabled and will continue to improve the ability of individual hams, groups, or clubs to build and operate fully featured remote stations. Author, WB8IMY, starts by covering reasons a remote station is desirable and concludes with a description of several different remote station architectures.

Basics of Internet addressing and configuration of a home network to support remote operation are covered in the second and third chapters, and hardware requirements are addressed in the next. Later chapters cover the transmission of two-way audio over the Internet and give example setups ranging from simple single antenna stations to ones with antenna switching and rotor control. There are a few items worth considering that didn't get much or any coverage in the text. Remote AC power control isn't addressed, but is easily accomplished with Internet power switches intended for remote web server control. There could be more coverage of the types of voice encoding and their different quality characteristics, some mention of terminal servers as a means to extend serial ports across the Internet, and more about free dynamic DNS services. The ability to access the radio host router remotely, a great aid in operating a remote station, isn't addressed.

The book is a good overview and would help a prospective remote station operator get up to speed quickly. It is available from the ARRL or from Amazon.

Radiosport Win

A Letter from John K6AM

"Jeff,

Just got back from WRTC 2010 in Moscow.

I'm very happy to report that the N6MJ/KL9A USA team took home the bronze third place medal at the 2010 World Radiosport Team Championship in Moscow using the first ever IMC HF Triplexer. They competed on an equal playing field against 94 of the very best contesters in the world

The Triplexer worked admirably. The boys reported absolutely no interference or other problems. There were quite a few home made triplexers at the event, but none that I saw could compare to the construction, quality and performance of our IMC unit.

IMC's participation was absolutely key to their success. On behalf of the team, our eternal thanks to you and the crew at IMC. Here are some pictures you may use as you wish.

73,
John"

HRO is **sponsoring a class** for newly licensed hams. This will give info on what to do with new license, programming transceivers, etc. Contact Joe at HRO for details. (858) 560-4900

Contest Report from N6KI

IARU HF World Championship 2010

Call: NX6T
Operator(s): N6KI, WQ6X, K4RB, AF6WF, K6KAL, W2PWS, NN6X
Station: W6HCD
Class: M/S HP
QTH: SDG
Operating Time (hrs): 21
Total Score = 467,002
Club: San Diego Contest Club
Comments:
Looks like we had a good balance of CW and Phone QSOs ! 553 CW vs 468 SSB = 1022 QSOs

We Beat Our 2009 Effort by 83,000 points even though we had almost 100 QSOs less than last year ! We had 13 MORE ZONES and 1 MORE HQ Stations compared to last year and I think we made quite a few more 5 point QSOs by working more stations on another continent

IARU HF Championship -- 2009
Ops: N6OX, K6GO, N6KI, N6XT, AD6ZJ
HRs: 19
Score: 384,788 points
Comments: Greetings to newcomers to the San Diego Contest Club - Bob K4RB, Rusty AF6WF, Dick, K6KAL and lastly Peter W2PWS, Gaylord N4SF

Next Multi Opportunity will be CA QSO Party the first weekend in October. (Mixed Mode)

Please let me know if you want to participate from W6HCD site.

73, Dennis N6KI

Education

There has been interest expressed in classes for the following:

- Initial (Tech) licensing classes
- General and Extra upgrade classes
- Advanced instruction (Not just exam prep)
- Getting on the air
- Programming radios

We'd like to get an idea of interest in these, both from potential students and potential instructors. Please email Ron K2RP at K2RP@ARRL.net and let me know of your interest.

Field Day 2011

by Michelle W5NYV

No, that's not a misprint. The past few years we've had successful Field Days, but we'd like to start planning for 2011 now in order to avoid "last-minute-itis".

Fortunately, we have a very generous volunteer offer from Greg Gibbs KI6RXX. He will coordinate the PARC Field Day for 2011. He attended the July 2010 PARC board meeting, and the board appointed him Field Day Chair for 2011.

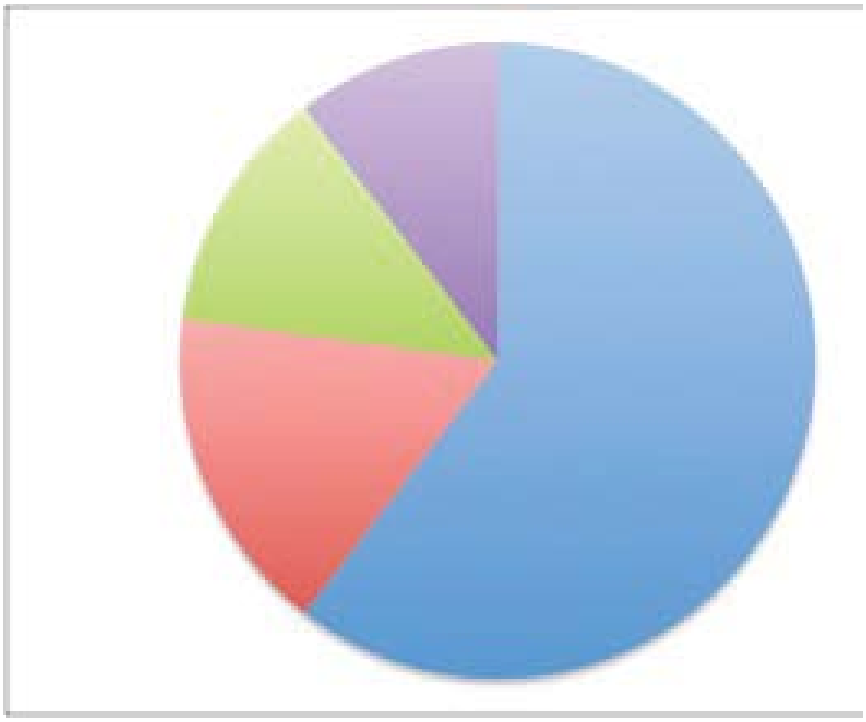
Please look for regular Field Day planning features in the Scope. There will be a wide variety of volunteer opportunities for Field Day 2011. We'd like to make it the best PARC Field Day event ever. Greg wants to especially emphasize public outreach, and we need a team of people to publicize, promote, and represent our event.

Here is a photo of Greg at the June 2010 PARC meeting. When you see him, please introduce yourself!

Logging Programs
Used in 2010 WRTC IARU Contest World Championship

Graphic at right was sourced from http://www.wrtc2010.ru/result_table.php

Thanks to Dennis N6KI for spotting the link!



Contest Loggers and Power SDR
For Flex Radios

by Howard KY6LA

During Field Day, Paul NN6X, Conrad KG6JEI and I ran my Flex 5000 to see how well it would do under contest conditions.
Paul ran CW while Conrad and I ran SSB and PSK. The filter abilities of the SDR were astounding as we could easily remove any offending signal by just not decoding it…Something that even a old technology IC-7800 that costs 3 x as much cannot do. Needless to say we had a ball.

BUT… the one issue that seems to have given us issues was the issue of "FOCUS"… what is Focus? Well when you click on an application such as a logger, you change the focus to the logger… however, the SDR radio is in itself also a computer program … so to work with that program … such as tune frequencies.. you need to click on it and change focus to the program. Unfortunately during the heat of the contest, you sometimes mix up where your focus is and inadvertently change frequencies which can be very annoying.

I have brought the Focus issue up on the FlexEdge Reflector…Flex is already developing an entirely new app (Called Deep Impact) for SDR Control but now they also have formed a working group to design an entirely new way for controlling the entire station (Radio, Contest Loggers, CW Skimmer, Spots, Loggers, Rotors, Tuners, SteppIR's, etc, etc) called the Software Defined Station (SDS) as opposed to the current just Software Defined Radio…. This is a very exciting development as we are looking at 100 Mb/s TCP communications between radio devices to replace the slow clunky, obsolete and hard to find 0.038Mb/s serial ports currently used. It paves the way for very easy to use and very responsive remote stations…

However in the interim I have found three things helpful when running contest loggers with PowerSDR..

1. Disable PowerSDR keyboard shortcuts for the duration of the contest. This will prevent inadvertent frequency changes.

2. Load and enable HOTWHEEL. Information can be found in article 50156 and 50420 in the knowledge base at kc.flex-radio.com. This will force the mouse wheel to retain control of PowerSDR VFO A frequency regardless of where the Windows focus is.

3. Use X-Mouse from within the Tweek UI portion of powertools.

http://www.microsoft.com/windowsxp/downloads/powertoys/xppowertoys.mspx

With X-mouse, the windows focus follows the mouse pointer without the need to click the mouse.[1]

If you add N1MM to the mix, you can leave the mouse pointer in PowerSDR to point and click and wheel tune even when N1MM grabs the focus for keyboard entry.

Bottom line, these tactics should fix the Focus issue well enough until the Deep Impact arrives.

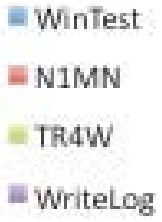
---

1 for Windows XP load the Powertools package. It is already in Win 7. Enable X-Mouse. I use an activation delay of 200 msec

Logging Programs for Field Day

by Michelle W5NYV

The most important aspect of a logging program for an event like Field Day is ease of use. Because many of the participants are either new to operating or are operating an unfamiliar station arrangement, the logging method should ideally be one that is easy to use, easy to teach, and easy to learn. Asking a more experienced logger to sit with an operator or logging with pencil and paper are probably the simplest two methods to use and adopt, since they don't require the operator to do anything other than what they may already know how to do.



If a computerized logging system is used, and the operators are unfamiliar with it, then training and/or an instruction sheet becomes necessary.

Several years ago, PARC purchased WriteLog for use at Field Day. The website for this program is located at http://writelog.com/ WriteLog is by W5XD and costs $30. As you can see on the chart at the left, WriteLog is used by a respectable fraction of the top contesters.

Field Day organizers and operators have chosen in the past to use, or require, various programs, or to allow stations to choose their own logging method. Each Field Day team decides during the planning process what seems right for them.

What's WinTest?

http://www.win-test.com/

From the graphic at the above left, one can see that WinTest captured a large fraction of the market for WRTC-2010 contesters. 60% of the 48 stations used WinTest.

Win-Test is contest logging software written by Olivier F5MZN. Olivier also wrote DXNet, an Open Source DX Cluster system.

Collected funds by Win-Test sales are exclusively dedicated to the non-profit association RACK (Radio Amateur Club de Kourou) to help contest activities, especially the FY5KE activation during international contests.

AF6WF Gears Up For Contesting

A NEW Contester emerges

by Dennis N6KI

AF6WF (XYL of Dick K6KAL) operated last weekend in the IARU contest at W6HCD site in Fallbrook, CA (850 ft elevations and 360 degree horizon) where we used "K6QK" (SK) Antenna Trailer with 3 element SteppIR and 2 element 40m Yagis and also a 4 element 20m Yagi on the Palomar ARC Trailer (loaned from KD6TUJ) with 80m coax stub wideband dipole at apex of tower.

Here is some useful info for newbies who have trouble tuning in SSB stations as Rusty did as she had very little HF SSB operating experience.

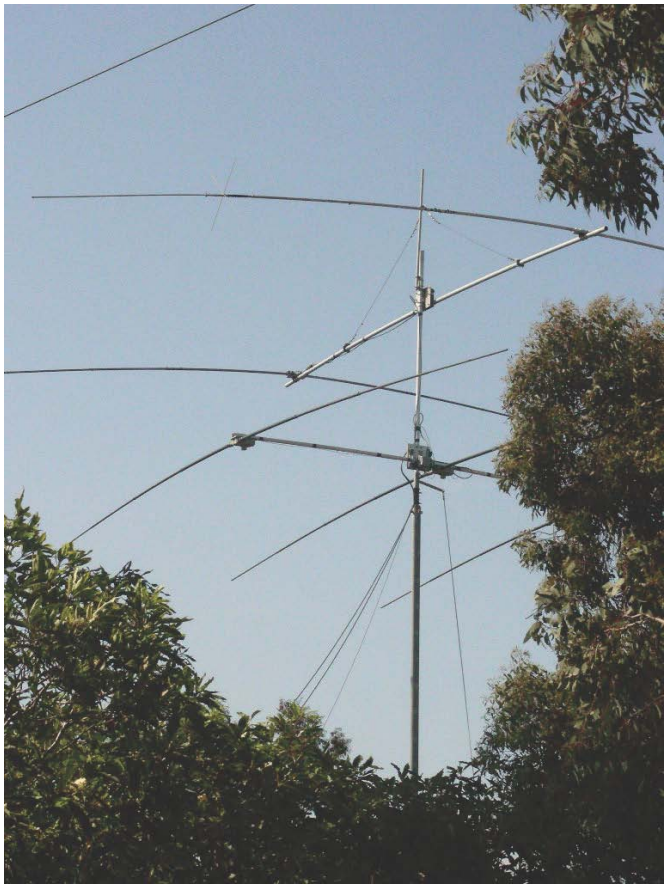
Check www. contesting.com web site and look at contest listings by WA7BNM in center of page and usually there is some sort of contest happening just about every weekend, especially "State QSO Party" types. These contests allow new operators to get practice tuning in stations.

Here is a good primer on Tuning In SSB Stations

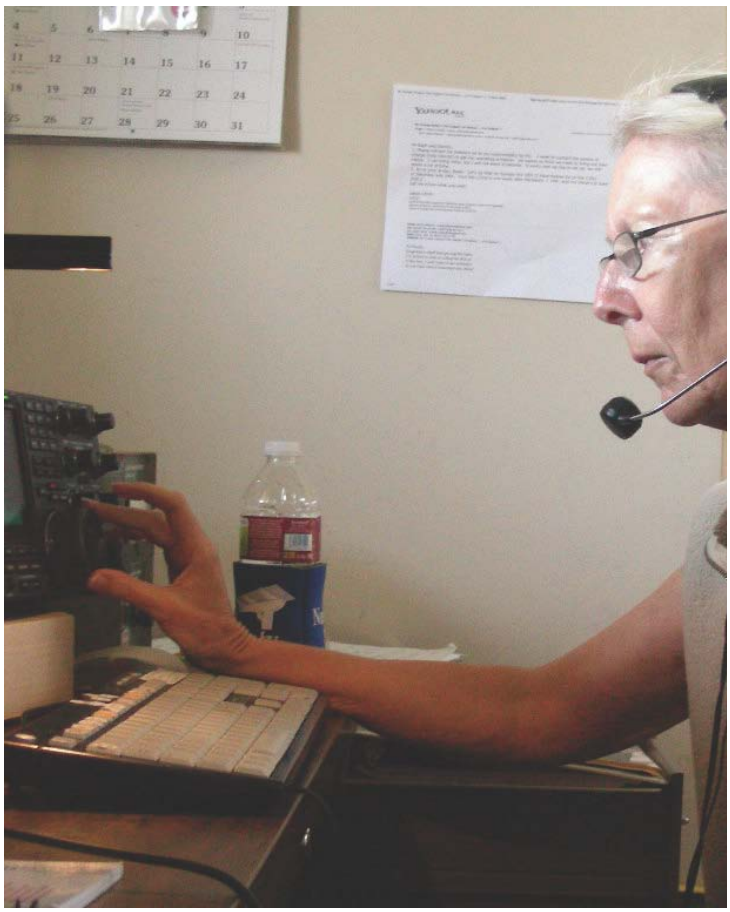
http://www.k5sld.com/presentations/kd5ra-articles/new-general-class-operator-2.pdf

And, also a good thing would be to get a map that shows Call Sign Prefixes so one can get an idea where to point a directional antenna to better capture signals.

73, Dennis N6KI



Photos from K6KAL of the operating station, antennas and towers, the operator Rusty AF6WF, and mentor Dennis N6KI.




20 MK YAC


NX6T

Field Day Report

by Ron K2RP

Field Day 2010 has come and gone. Many of us are still catching up on sleep and nursing sore joints, but we'll all be back next year! Nash, W6HCD, was gracious enough to offer his world class hilltop location for an experience none of us will soon forget.

We operated in the unusual "6E" category. This means we had 6 transmitters on the air simultaneously, and were at a licensed location but using all emergency power. There were 5 towers in the air, plus dipoles and VHF antennas.

Our results were very respectable, if not record setting: There were 958 phone QSOs recorded, along with 1913 on CW, for a total score of 9568. We earned bonus points totaling 850, for a final score of 10,418. For once, we had a surplus of good CW ops! In my many years of FD participation, I can't remember that ever happening!

Sign in sheets added up to 28 participants during the event, but many more were involved in setup, teardown, food service and general "labor." As in any project, a few members stood out with outstanding efforts and generosity.

OUR PARC 2010 ALL STARS WERE:

N6KI: Dennis not only arranged for the site, but was everywhere, doing everything, and checked and double checked every detail. In addition, he supplied 3 of the 4 HF rigs: The K3 and IC7800 used for CW were his, as was the 80/20 SSB Kenwood 850S. Dennis had originally agreed only to provide the site, but when the going got tough, Dennis got going. It would not have happened without his experience, knowledge and dedication. 2 stars for N6KI!

K6KAL/AF6WF: Dick & Rusty were there, beginning to end, at every work party, planning session and setup. They were instrumental in keeping things on an even keel.

N1OW: Rick "saved the day" twice! At the "11th Hour," we were in need of two vital pieces. Rick stepped up and brought "Daisy," the water trailer, to fill the barrels that stabilized the towers. A job that would have taken hours with hoses was done in minutes! Then, hearing that our food service had canceled out due to a health situation, he brought his catering trailer and served not only Saturday dinner, but Saturday lunch and Sunday breakfast as well. Burgers and dogs for lunch, tri-tip for dinner, and full breakfast in the morning! Not only did Rick cook, but he did all the shopping too! I challenge any of the thousands of Field Day stations nationwide to equal our food supply!

WB6IQS: John has always been the stalwart in the setup of towers and antennas. Due to health issues, he was going to act only in an advisory capacity, but he came through 100% when he was needed. His experience and knowledge made the tower raising run smoothly and, most importantly, safely.

KC6UQH: Not only is Art our "go-to" guy for VHF, but his volunteering his front-hitched truck to move the tower trailers saved the day.

KJ6RET: Bob, a new member and recent ham, brought a solar powered trailer, with facilities to operate all 24 hours with only solar power. This was a first for our club, and a great learning experience for emergency communications in an entirely different way. Bob was there for many of the planning sessions as well.

Also on hand to help wherever needed: KG6JEI, KG6VVN, KC6VDX, KJ6DPR, KJ6HCT, KD6AKT, AI6IC

Without our dedicated operators, all this infrastructure would be for naught. Here are some of those who spent hours completing nearly 3000 contacts:

CW: K4RB, N6KI, K6BZZ, NI7R, N6NC, KM6Z, N4SF, K2RP

SSB: W2PWS, K6GO, KD6HYN, K6KAL, AF6WF

10 Meters: W6ASP (No one told Preston that there weren't many sunspots, so he made over 300 contacts on this band — highest total for any HF SSB band!)

6 Meters: WD6FWE (Don worked the country on this band, contributing 86 QSOs to our total)

VHF: KC6UQH contributed our 2m and 440 contacts.

My apologies to whomever I left out!

It's not too early to prepare for next year! We need to go over our antennas, coax, dipoles, etc. The only major "hitch" was that the 20m SSB station interfered with the 20m CW station so that they could not operate simultaneously. We're already working on a fix for that.

Members who couldn't attend this event missed an outstanding experience! Thanks once again to all who made it possible!

Ron K2RP

MDS/ERP Event Results

by Ed W6OYJ

This spreadsheet shows the results of a workshops where amateur microwave stations were compared on a unique test range for both transmitting and receiving performance. The test setup was developed by Kerry Banke, N6IZW and has been used by the San Diego Microwave Group and during joint Picnics held the past few years by the SDMG and the San Bernardino Microwave Society.

The test setup consists of a remote Tx/Rx transmitter/sensor unit installed on a pole about 15 ft. high at a distance of approximately 220 ft. from the stations being tested. The remote transmitter produces a stable signal on the operating frequency, such as 10368 MHz. Operators tune this in with their rigs and peak their antennas. The signal is then reduced in level until barely discernible (MDS). That level is logged. The operator then transmits with maximum cw power and the Rx sensor power level is logged. The spreadsheet is used with the logged data and with data on each rigs claimed antenna size and transmit power to allow comparison of measured versus expected performance.

The results have been useful, not from an absolute basis, but by allowing operators to compare their rig's results against other amateur's rigs having similar Tx, Rx, and antenna characteristics. Any major differences between performance can help to focus on unsuspected problems that can be solved before upcoming contest events. In past events, operators have discovered problems with relays, cables, connectors, and even non-functioning power supplies.

The test setup is described in detail in an article by Kerry Banke, N6IZW, along with block diagrams for the 10 GHz and 24 GHz remote transmitter/ sensor units.

The spreadsheets are provided in Adobe Acrobat (.pdf) format. You will need an Adobe Acrobat Reader program to view or download the spreadsheets.

What you should look for: Your receiving performance is shown in the column marked "MDS Gen dBm". You want the largest negative value compared to other stations having the same size or performance antenna on that frequency band. In the last column marked "Meas-Calc" your transmit ERP performance is shown. A zero means that your ERP came out exactly as expected given the claimed transmitter power and antenna gain. If you have a positive number, then your ERP is better than expected by that many dB. If you have a negative number
then your system measures worse than expected. Good Luck!

Results from the July 19, 2010 SDMG Workshop at N6IZW QTH in La Mesa, CA are below.

	July 19, 2010 SDMG EIRP/MDS Event					Range Feet	220			89
10 GHz NB										Path Loss dB
Call	Dish size "	Output dBm	ERP PM dBm	Atten. Value dB	MDS Gen dBm	Calc Ant Gain	Calc ERP dBm	Meas ERP	Meas-Calc	
N6IZW	24	37	-9	20	-86	33	70	69	-1	
K6DYD	48	42	-5	20	-80	39	81	73	-8	
WB6TFC	48	28	-11	20	-84	39	67	67	0	
WB6TFC	18	28	-7	10	-76	31	59	61	2	
WB6TFC	30	28	-5	10	-76	35	63	63	0	
W6VLF	30	28	-17	20	-80	35	63	61	-2	
KE6PBH	20	27	-7	10	-79	32	59	61	3	
W60YJ	30	26	-7	10	-79	35	61	61	0	
K6NKC	30	33	-11	20	-89	35	68	67	-1	
KD0IF	22	27	-10	10	-78	33	60	58	-1	
KI6ACI	12	15	-23	0	-50	27	42	35	-7	
K6VCR	30	25	-5	10	-81	35	60	63	3	
W5NYV/KB5MU	12	20	-17	0	-61	27	47	41	-6	
NB frequency is 10368 MHz, IF is 145 MHz with 18 dB cable loss & amp gain of 46 dB										
NB frequency is 24192 MHz, IF is 147 MHz with 18 dB cable loss										
Ant gain Calc assumes 64% efficiency =7+20*LOG(size inches/12)+20*LOG(freq in GHz)										
Measured ERP = Power meter reading+Attenuator + Pathloss +Cable & Mixer loss-Amp & Horn gain										
Path Loss = -37.5+20*LOG(Dist in feet)+20*LOG(Freq MHz)										

Oceanside Hams, Your 5 Minutes Are Up (Almost)

by Fred AE6IC

At the 2 June PARC meeting we learned of a proposed Oceanside zoning ordinance review meeting scheduled for Friday, 4 June 2010. Club president, Dennis had received a heads up email from Jon Studer, KI6PTN, who just happened to be on the Oceanside Telecommunications Committee (OTC.) Essentially we had one day to review the proposal. Dennis and I attended the meeting and were each given 5 minutes to cover our views on everything in the ordinance. Basically, this process was totally inadequate for the task at hand and served only to fill-in a procedural check box for the OTC.

Fred AE6IC speaks at the June PARC membership meeting. Photo taken by KB5MU.

At our July PARC meeting we discussed serious shortcomings of the proposed Article 39 zoning ordinance. To begin with, it attempts to combine Amateur Radio Service and commercial provider practices into a single standard. Not only does this twist all the rules of writing for clarity, it masks the special nature of the Amateur Radio Service. In a few places it actually makes impossible demands i.e. section 3908, third paragraph: "Within thirty calendar days following the installation of any Wireless Communications Facility permitted by this Article, the applicant shall provide FCC documentation to the City Planner indicating that the unit has been inspected and tested in compliance with FCC standards." And on and on. When was the last time the FCC certified your Amateur Radio station? Never, because the difference between a commercial and an amateur station is that the Amateur Radio operator is licensed, not the station equipment! This is exactly the kind of misconstruction that results from an attempt to combine Amateur Radio Service and commercial provider practices into a single standard.

I solicited a list of emails from Hams who wanted to be kept up-to-date and invited them to join a working group. At present, this list only contains 14 Oceanside Hams. There are over 350 Hams in the Oceanside! We definitely need more boots on the ground if we are to present a strong contingent of Oceanside Hams at the next OTC meeting. If you live in Oceanside and want to be kept informed, please send me your email address. My email is hamkt4fk@att.net. I have separate email lists for Blind (BCC) and for in-the-clear. If you don't specify in-the-clear then you will be placed on the BCC list. I'll attach a copy of the Proposed Article 39. BTW, this list is private and will be destroyed once the Article 39 situation is resolved.

This zoning ordinance will affect every Oceanside Ham application in the future. The benefits from every improvement will be part of each and every application. It is an opportunity to enhance the Amateur Radio Service. When do we start? NOW.

1. **Organize** Oceanside Hams. When a public hearing is called, notification and coordination with affected Hams is crucial. That first OTC review meeting was a wake-up call. Be involved. Be ready.

2. **Guide** the City with factual information that promotes a fair treatment of Amateur Radio such as Federal and State of California PRB-1 legislation, and Part 97.1 of 47 CFR.

3. **Expose** the fact that he cost of a Conditional Use Permit, now $4080 (plus "other" fees) is not only totally unreasonable, considering the cost of an antenna installation, but is virtually guaranteed for every Amateur Radio antenna application.

4. **Consider** the fact that the proposed 3918 identifies the potential of Green Technologies such as solar or wind generation yet nowhere in the proposed article does it acknowledge the actual contributions of Amateur Radio as referred to in Public Law 100-594, Sense of Congress. This discriminates against Amateur Radio by implication.

5. **Show** that the requirements for HF operation are based on the laws of physics. There is no reason for the City to generate a new study to examine the same physical laws each time an Amateur Radio operator applies for an antenna permit. The ordinance should cover this.

6. **Clarify** the fact that the physical design requirements for operations on HF wavelengths vs. shorter commercial wavelengths are profoundly different. The way the proposed article is written impedes Amateur Radio by assuming arbitrary antenna heights.

7. **Identify** every instance in the proposed article where it discriminates against Amateur Radio or fails to adequately address our requirements. Describe failure to meet PRB-1 guidelines.

8. **Reason** that mixing amateur and commercial practices defeats all the rules of writing for clarity. The regulatory schemes covering the Amateur Radio Service and the commercial service providers are distinctly different and warrant separate coverage. Two separate ordinances are needed: one for the Amateur Radio Service and one for commercial service providers.

9. **Reason** that defending a poorly written ordinance will result in wasting Oceanside tax payer's dollars on unnecessary litigation losses.

Pass the word; if you live in Oceanside please add your email to the list of Hams who want to be informed.

If you would like to participate as a member of a working group we need you! Please get in touch.

If you know a City Councilman, please make an appointment to present our side of the story. Provide a point paper covering your goals. Feel free to use anything here.

And remember, be positive; we are servants as well as hobbyists. A good source of useful information is Antenna Zoning for the Radio Amateur by Fred Hopengarten.

His suggestion: do not engage the media because you could wind up talking to the wrong person.

> "Never argue with a person who buys ink by the barrel."

Your five minutes are up. 73, Fred, AE6IC

Repeater Site Work Party

On Sunday, August 15, Palomar Amatuer Radio Club will host a work party at the repeater site. There will be a general clean up and maintenance. This is a chance for new hams to learn a little about the repeaters.

We will meet at Mother's Kitchen at 10:00am and proceed to the site. All are welcome to come early and enjoy the great foods at Mother's Kitchen before the party. A lot of hands will make for easy work. Contact board@palomararc.org for more information and to let us know you're coming.

Who needs a ladder? Photos submitted by Don WD6FWE.

Hello SD Microwavers,

At 3:28pm on 26 July 2010 I copied the Hawaii Beacon KH6HME on 144.169.4 MHz.

Not very strong but copyable on CW. Has a unique "whooping" signal.

73s de Ed W6OYJ

PARC Club Picnic - Details!

by Conrad KE6JEI

Plan for the club tower to arrive at 9:30am to start the day.

The club will be grilling up lunch basics throughout with the various festivities to be intermingled during the day. Bring a side, desert, or snack for the group and share the bounty. Conrad's famous brownies may just attend as well.

The site has a gated playground attached to it, plenty of green grass and fun for the whole family to enjoy.

Festivities to include:
10/15/20 HF BEAM to be setup and running to get you on the air.

Transformer Toss -- a fun event from last year

Fox-Hunt -- Can you find it? Bring your HT and DF antennas and see. Enjoy the park sights as you seek that pesky signal out.

Annual club points raffle -- Drawing to happen around 2:00pm You or your proxy must be present at the time of the drawing to win!

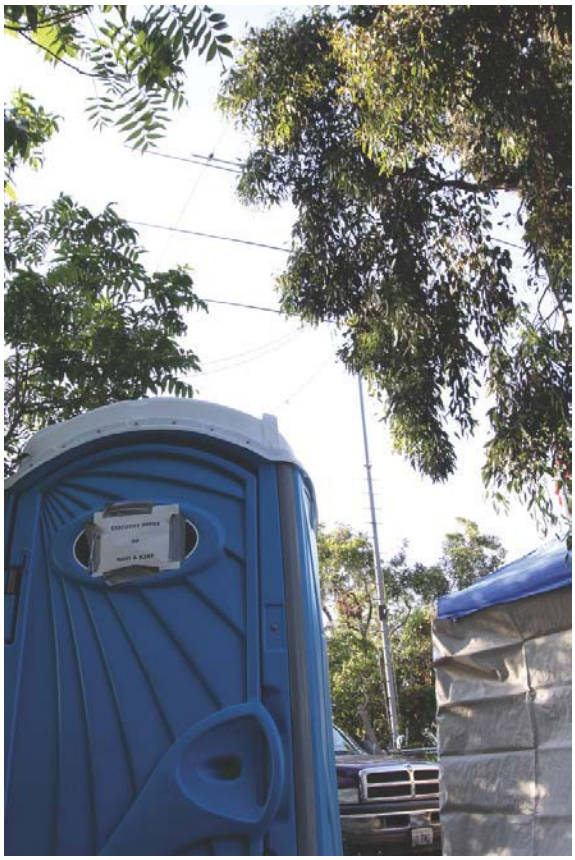
Points have been earned for each meeting you attended, each club work party you assisted on, field day, bringing goodies to club meeting, etc.
Picnic counts as two points! One for this year one for next year! (official rules available for review)

Hope to see you at the picnic, I know I will have a story or two of my own to share across the table as will many another ham, only way to hear is to attend!

More details to be announced on the club website and at the club meeting as available.

Left, below, and far right, Bob had a solar powered station a Day. He will give a presentat PARC about the station at an meeting. Photos by W5NYV.

Above left, our Field Day host Nash W6HCD enjoys the excellent cooking provided by Rick N1OW. Above, a tower at Field Day. At right, Field Day HQ (porta-potty). Left, Preston W6ASP with a Field Day participant at 10m station.



Old Glory flies at sunset.

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Editor: Michelle Thompson W5NYV
Submissions: scope@palomararc.org
Questions? Ideas? Comments? W6NWG@amsat.org

Featured Program:

At 7:30pm, Palomar Amateur Radio Club will host a program at the monthly membership meeting on 4 August 2010. The program will be presented by Ed KG6UTS on Military Radios. Subjects covered will include collecting/operating Military radios, Nets and operating events, West Coast Military Radio Collector's Group. Ed will have some sample radios and slides of some collections and MRCG events.
Arrive at 7:00pm to socialize. We look forward to seeing you at the Carlsbad Safety Center, 2560 Orion Way, Carlsbad, CA.

SCOPE

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

Palomar Amateur Radio Club will celebrate its 75th anniversary in February of 2011. Please send in stories and pictures (with description and names if possible) for inclusion in the SCOPE. Old-timers please help, newer members send in things also.

September Meeting

The September meeting presentation will be on Solar Power & Emergency Preparedness by Bob, KJ6RET. The presentation will include a practical explanation of how to use solar energy for off-grid mobile and portable applications and the use of modeling software to design critical emergency systems. It will overview a real life experiment to prove concept for the usage of solar energy for emergency communications and everything else in short term or long term disaster scenarios. It will include a hands-on demonstration of a portable solar power station and the open house of a mobile solar power off-grid trailer system.

Radio Club Resources

Check out these great local radio clubs on the web at the following addresses.
http://www.fallbrookarc.org/
http://www.sddxc.org/
http://www.earsclub.org/
http://roars.net/
http://www.wa6bgs.org/
http://n6six.50megs.com/

YL DXpedition

At the August 2010 PARC meeting, Gayle K6GO announced a YL DXpedition to Curacao, planned for a March 9-21 window during 2011. There are about a half dozen participants so far (some of us are pictured at left) and we are welcoming more! If you are a YL and would love to come to Curacao, please contact Gayle at gayle_olson@sbcglobal.net.

Save the Date

Club Meeting
1 September 2010

Program at 7:30pm
Bob Todd will talk about his mobile solar-powered station seen at Field Day.

Board Meeting
8 September 2010

Palomar Amateur Radio Club board meeting at 7:00pm at KB5MU QTH

Club Event
18-19 Sept. 2010

Second weekend of the 10GHz and Up contest.

www.arrl.org/10-ghz-up

Club Membership for September Edition

New Members Joining PARC: Eric Sprunk (No call yet) K4RB, N6TZQ, and N6TFL.

And one member sent a 10 year renewal, and we also received a 5 year renewal!!

6 members reinstated their membership, thank you!

Here is the list of members receiving the SCOPE on the web, that "expired" in the last month or so. Please check this list, and get your renewal checks in the mail!
Pretty PLEASE!!! N2DKO, KG6ETI, KI6GD, KI6ZLG, KI6THI, AD6Y, K6DRH, KD6FY, K6MHG, WB6MEI and W6CDU.

We sent out nearly 100 postcards to past members that let their membership run out last year (2009). A common response was that their failure to renew was an oversight, and quite a few sent in more than one year's renewal! Welcome back!

Al

Upcoming General Meeting Topics
October - Annual Club Auction - bring your cash!
November - Michelle W5NYV "Antenna Modeling"
December - Social

July Fold & Staple Crew
W6GNI Al & Kathy
WA5ACE Sonny
KB6YHZ Art & Janet
KB6NMK Jo & Toby

2010 ARRL Southwestern Division Convention

September 17, 18 & 19, 2010

San Diego, California

Four Points Hotel Sheraton, San Diego

It's time for one of the best ARRL Conventions on the West Coast! Come see the Ham Gear and take in the sights of Sunny San Diego!

For up to date information about the Convention, please visit us at the website: www.sandarc.org/Click on Convention Button.

Contact Person: Paul KC6QLS at (619) 593-9445 or Email at kc6qls@cox.net

See you at the Convention!

Advertisements are free for members.

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

For Sale

Item	Price
YAESU FT-1000	$2,500.00
Kenwood TS-950 S	2,500.00
FT-2500 M	350.00
Kenwood SWR/PWR Meter, Model SW-2000	50.00
TR-7330 2 M	150.00
Astro PS7 A	25.00
Cubic Astro -150 A-10-80M Transceiver	250.00
Ten-Tec Centurion amp 1kw	1,500.00
Ten-Tec Titan amp 1kw	2,500.00
FLUKE Meter Model 77	65.00
SHURE Microphone Push to talk Model 444	30.00
3-500 tubes	100.00 ea.

Contact: R. F. Krist, W6KTE, (760) 724-2786

For Sale
Crank-up tower, 4 sections (collapsed length=12' 9"), triangular- 18" bottom to 10" top. 3' top bolt on tapered section with rotor head and thrust bearing installed + 6' of pipe above the taper. Base plate 22" x 22" with 3 studs to set tower on. Lifting winch had a motor at one time but now gone, leaving a spline shaft sticking out of the worn gear box to which a handle or motor can be grafted. Located in Poway, weight 400+/- lbs for tower alone and 150+/- lbs for the top piece, base plate and winch - $250. Gary 858-748-6076 wb6gsn@gmail.com

For Sale: HUSTLER 6BTV High Performance HF Vertical Antenna system, 80/75/40/30/20/15/10 m, complete with 250ft spool 14 ga wire and all precut radials, SS Tilt base and SS Radial plate. Used one year. Bought new at $400, will sell for $200. contact: Rich Ortloff KE6DUG 760-861-1406

For Sale: 6BTV Vertical Antenna. Crank up Tower with rotor and 3 El Yagi. Must be taken down and removed. Call Lee, (760) 726-1097

Annual Club Auction

by Michelle W5NYV

It's almost October, and that means it's auction time. Come to the General Meeting on October 6th and join the fun!

Where: 3096 Harding Street, Carlsbad CA

Any radio item new or used, working or not (boat-anchors included) will be tagged with the seller's information. Both buyers and sellers will register prior to the meeting. Please plan on arriving early to get a look at the auction items. Hams interested in bidding on items will be given a numbered card to hold up on items they would like to place a bid on. Any further questions can be directed to: board@palomararc.org

PARC Auction Schedule

Room Setup	5:30pm
Sellers Allowed In	6:00pm
Buyers Allowed In	6:30pm
Auction Starts	7:00pm
Auction Ends	9:00pm

A suggestion heard at the September 2005 meeting: put those address labels you get in the mail to good use by bringing them to the auction. Instead of writing your name over and over, use the stickers instead.

If you have a wagon or other wheeled cart, please consider bringing it in order to transport items more easily into the building. The club will provide one wheeled cart for transporting equipment in and out of the building.

Art KC6UQH will be the auctioneer for the evening. Start planning now for the treasures you'll want to bring and the treasures you'll be sure to find.

Room set-up starts at 5:30pm. As soon as the room is set up, sellers sign in and tag equipment. Bring your stuff early! 6:30 to 7:00pm buyers are registered (required!) and may view the offered equipment.

If you have questions about an item, this is the time to ask it. Inspect equipment before the auction so you know what you are bidding on (write its auction number down!) Auction begins at 7:00pm.

PARC receives 10% of the sale price and there is no other fee for buyers and sellers. Donations to PARC are accepted. All monies are paid to PARC. Seller(s) may set a written minimum bid on their items. Seller is responsible for removing any item(s) not sold. PARC does not guarantee the condition of any item sold.

You don't have to be a PARC member to participate in the auction, so invite your friends to join in on the fun. Sellers will not be paid their money until all monies have been collected that evening, so bring a Self Addressed Stamped Envelope if you want the check mailed to you the next day, or pick it up at the next club meeting.

In previous years, the auction has been held outdoors (in a surprise move due to a conflict in room reservation), in the smaller EOC meeting room, and in the larger EOC meeting room.

Education

There has been interest expressed in classes for the following:

Initial (Tech) licensing classes
General and Extra upgrade classes
Advanced instruction (Not just exam prep)
Getting on the air
Programming radios

We'd like to get an idea of interest in these, both from potential students and potential instructors. Please email Ron K2RP at K2RP@ARRL.net and let me know of your interest.

Learn Morse Code While Driving

Burn it to a CD and listen to it in the car, etc. Here's the link: www.tinyurl.com/morsemusic

Military Radio Redux

August membership meeting report

by Michelle W5NYV

Ed KG6UTS presented on military radios. Several members commented on how enjoyable and informative the program was. Ed collects and uses military radios from World War II through the 1950s. His motivation is threefold. First, in order to learn about history. Second, out of a technical interest. And finally, because the radios are fun to play with. Ed described the military collector community as a genuinely nice, social, and active collection of people that has swap meets, conventions, and ham fests. The community that Ed described is much less hierarchical than some other ham radio groups.

His Field Wireless photograph was excellent, and an early comment in the evening about the propensity for hams to bring loads of radio gear home from swap meets was met with a statement that none of us were "as bad as the guy who brought home eight halftracks."

The living history aspect of military radio collection was vividly shown in the first anecdote of the program. Ed assisted in restoring a radio room in a ship back to the way it looked on 6 June 1944. Unlike many restorations of radio rooms, this radio room was restored to working condition.

For those of us in the audience that have little exposure to this vintage of radio, the evening was quite the education. LOPS, RCA RBC, R390a, TDE and RAS - all introduced with excellent photographs from Ed's slide show. 130 watt CW, 30 watt phone radios for ship-to-ship, and very early HROs were next. No, not the store - HRO here means "Hell of a rush order." The TBL and TDE were very large, with the TDE weighing 800 lbs.

Aircraft Radio Corporation (ARC-5s, etc) were discussed, with the very active collector market described in compelling detail. World War II seaplane radios were talked about next, with a comment from the audience of "It was used as the anchor when landing."

Ed showed photographs of people using heliographs (used from 1860s until 1970s). Next, he talked about a type of Vietnam-era special forces field radio, a 15W one-time-pad burst-mode radio. After keying in your message, you wound up the radio with a mechanical movement and it sent your coded message at 300 words per minute. Ed described this GRA-71 as "the Mack truck QRP set". Thank you Ed for a great program!

Above, Ed KG6UTS points to the hard-to-find dynamotor on the ARC-5. Below, military radios brought for demonstration. Photos by KB5MU.

Below, Ed KG6UTS points to a detail during his presentation on military radios. Photo by KB5MU.

Minutes

Palomar Amateur Radio Club Board of Directors
July 14, 2010

The meeting was called to order at 7:19 PM by President Dennis Baca KD6TUJ. The meeting was held at the home of Al Donlevy W6GNI. Present at the meeting were:

President Dennis Baca KD6TUJ
Treasurer Georgia Smith KI6LAV
Secretary Gary Kent W6GDK
Director #1 Paul Williamson KB5MU
Director #2 Conrad Lara KG6JEI
Membership Al Donlevy W6GNI
Don Johnson WD6FWE
Greg Gibbs KI6RXX
Scope Editor Michelle Thompson W5NYV

Treasurer's Report The treasurer's report for June and July presented by KI6LAV. Total assets as of 6/30/2010 are $13,554.89. Motion to approve both reports by W6GDK, second by KB5MU. Approved

Secretary's Report- Minutes of the May meeting were presented by W6GDK. There was no meeting in June due to lack of quorum. Motion to approve by KB5MU, second by KG6JEI. Approved

General Meeting: August meeting will be by Ed Zeranski KG6UTS on Military Radios. September is Robert Todd KJ6RET on his solar station. October is the annual auction at the Harding Community Center in Carlsbad.

Membership Report: Current membership is 291.
Repeater Site/Technical Report: The 147.075 was reported to be off the air, but it mysteriously healed itself. We still need a PA. Loren Hunt AD6ZJ is resigning as Technical Chairman due to extensive overseas travel for work. Some antennas have bent elements. There will be a work party on August 15. Meet at Mother's Kitchen.

Field Day – planning is progressing on our Field Day for 2011. Greg Gibbs KI6RXX has volunteered to be the FD chair. Discussion regarding two potential sites was held. One site is in Oceanside, and would require the City of Oceanside to be an additional insured if we choose the Mesa and College site.

NEW business:
Annual picnic is scheduled for August 29, at 9:30 AM. Motion by W6GDK to reimburse Conrad Lara, KG6JEI $180.00 for the picnic reservation. Second by W5NYV Approved

After tedious discussion and aborted motions, it was moved by W6GDK that we approve payment to Roberts and Roberts Engineering Services $223.61 for Field Day food. Second by W5NYV. Approved.

Don Johnson WD6FWE proposed making some coaxial stub filters for the antennas for Field Day. He will demo a 20 meter version at the picnic.

Motion to adjourn at 9:12 PM by W6GDK, second by W6GNI. Approved. Next meeting will be at home of Al Donlevy W6GNI on August 11, 2010 to start at 7PM. Submitted by Gary Kent W6GDK

Below, concrete around footing is chipped out for bolt inspection. Photo by KB5MU.

A Letter From Tom Dailey W0EAJ

What fun to find this site. I just finished a story about my first rig, bought from WESTERN RADIO, back in 1963... a Heathkit "Twoer" (Lunch box)... and was musing about, then found this page.

I spent many years in Uncle Samuel's Canoe Club, stationed there in San Diego, and LOVED IT. Even lived on Pacific Beach for a while, but that's another story HI HI HI.

I wonder if anybody has any photos of the OLD Western Radio? I'd love to see one again. They sold me the "slightly used" (boy, was THAT an understatement) radio, and after removing the extra pounds of solder from it, I actually got it working. I knew a bunch of guys from National City, who were connected with the old CD (now ARES) station of WA6UUO. It was under a set of concrete bleachers in a park, and like the other stations of its genre, they had a Johnson Viking II, some manner of receiver I can't recall, and a WHOLE BUNCH of surplused Hallicrafters "Littlephone" FM rigs, converted to 2m. Doug Decker - WA6TAD (SK), and WB6BOX (now N6FM) were the two guys I knew best, and I still vividly recall the day that Doug used a "nibbling tool" on the roof of my pretty '60 Chevy Impala for the quarter-wave 2m whip I'd bought... he got tired of me whining about not buggering up the car, so the next thing I knew, there was a drill bit sticking out of my roof. That fixed that.

I and 5 other guys got the club station at the Fleet Anti-Submarine Warfare Center going (again). It was W6DCM (Donuts, Coffee, & Milk..... or Dis Carded Merchandise); that was in 1965, and in 1997, I ran into Bob Wagner - N6DUR (he lives in Clairemont) on 20m, and discovered we'd BOTH used the same equipment, only 8 years apart!. I was stationed there with COMTRAPAC, as a Staff Radioman.

I shall never forget the hams of the San Diego area. They always made me feel welcome, and provided friendships that were a pleasant difference to a young sailor, far from home. Many of the fellas I knew, are no doubt Silent Keys now, but the fun times, fox hunts, picnics, and "tech-support" they gave, was NOT wasted.

My heartiest 73 to all of you. It's been a long time since I drove up to Cabrillo Monument or Mount Helix, so I could "maybe" work DX on the "twoer", or using slope-tuning, maybe hear that NEW "repeater" they'd installed in Los Angeles. Some of the other stations that were around at the same time..... WA6NKC was over at the Naval Training Center, and WA6TBY was at North Island NAS.... can't recall what the others were, but of course.... all the callsigns are gone, save for W6DCM.... a very strange cat ended up with that one..

Warmest 73
Tom Dailey - WØEAJ*

*WAØEAJ "Electric Apple Juice" back then

Below, the bolt is exposed for inspection. Photo by KB5MU.

San Diego Microwave
10GHz and Up Contest Prep

The focus of the San Diego Microwave Group meeting for August was all about the "10 GHz and Up" Microwave Contests on August 21/22 and September 18/19.

This contest is like no other. You can work the same other station multiple times as long as one of you has moved at least 10 miles from any former location. The score is made up of the kilometers separating you from the other station, and it is cumulative over the two operating periods. You get 100 points for the first time you work the other station on each band above 10 GHz.

At our meeting we provided all kinds of information especially for all the new members who haven't been involved in these contests, as well as to update the old-timers on any changes they may not be aware of. Places to go, where to aim your antennas, and how to use the 440 MHz Cactus system for liaison, etc.

73s from Ed Munn, W6OYJ
remunn@earthlink.net

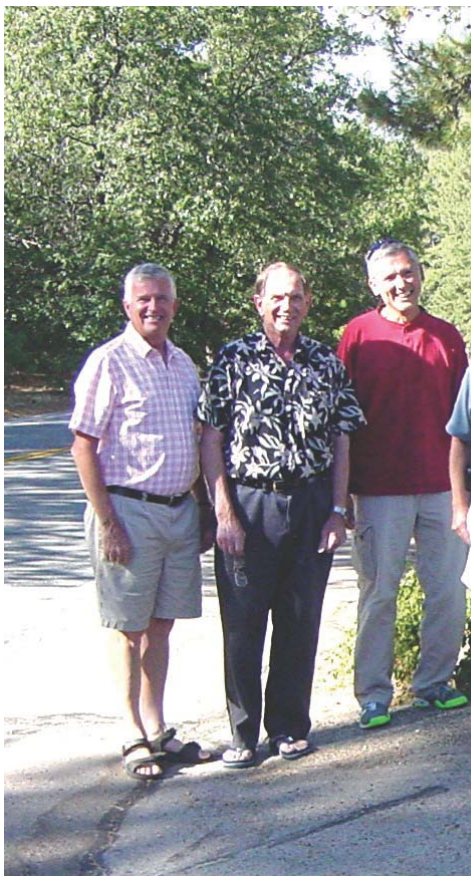
Above, Ed Munn W6OYJ at the range party. Top of page left, a group photo of range party participants. Photos by KB5MU.

SDMG is happy to announce that we sponsored five new operators during this contest- in addition we had two 'old salts' that returned to 10GHz after being absent for a few years.

Greg
K6QPV

PARC Members Participate In 10GHz and Up Contest

Several Palomar Amateur Radio Club members successfully participated in the first weekend of the 10GHz and Up contest. On Saturday, 21 August, a group comprising 9 stations formed a caravan and ascended San Miguel. Stations were set up a short walk from one of the parking lots, with plenty of sun shades providing protection against the midday warmth. Activity began at about 10am. Stations were struck and packed up for departure when the wind began to tear down the pitched and tied tarps after 2pm.



On Sunday, 22 August 2010, most of the Saturday group assembled again to tackle Mt. Laguna. After some reconnoitering and some strategizing, the group was set up along a dirt road with a commanding view of the horizon that included Arizona. Conditions changed throughout the day, but there were several impressive contacts made.

Microwave contesting has some significant differences from HF contesting. An HF contester usually sits indoors, at a traditional ham station, and doesn't usually move around during the contest. The antenna at an HF station is normally up above the house on a tower. The antenna is usually a Yagi, and (in general) is rotated towards the direction the desired station or stations. A microwave contester usually goes out to a location on top of a mountain or hill in person, and may move several times during the contest. The rules for 10GHz and Up reward distance, with points given for unit distance between the two stations in a QSO. Making arrangements for contact attempts is encouraged. This is not the case in HF contesting, where virtually all contacts are supposed to be made without outside assistance or prior arrangement. Repeated contacts on the same band can be made in the 10GHz and Up contest, as long as one of the stations has moved at least 10 miles. The range for microwave contesting is different than the range for HF contesting. It's an achievement for a Southern California station to contact a station in Arizona, while HF contacts can be worldwide.

The 2010 Laguna group: (Front row R to L) Paul KB5MU, Michelle W5NYV, Joe KE6PHB, (Second Row) Tom K6VCR, Dan K6NKC, Ed W6OYJ, Lee KD0IF, Dave (our host for the day) WB6TFC, Rod N6JND, Art KC6UQH, Greg K6QPV. Photo taken by Random Guy At Laguna Lodge.

First Contest for "Hello Giggy"

I had such a great time during the 10GHz contest!

I got several questions during the contest about the head covering I wear during hot weather. It's called a tagelmust, and is generally worn only by Tuareg men. I borrowed the practice after spending some time in Anza Borrego and the Black Rock desert. I learned the hard way that when the temperature is warmish (85+) and the air dry, that a tagelmust (http://en.wikipedia.org/wiki/Tagelmust) is the way to go. It's nonintuitive to cover up the head when it's hot, but after working side by side with various groups, at various times, at various places, I have learned that those that leave their skin exposed to the heat end up less comfortable, more dehydrated, and more fatigued by the end of the day. Especially in cases where it's windy and dusty, there is simply no comparison for cotton cloth.

Paul KB5MU snapped this photo of me taking a photo of him taking photos of the group on Mt. Laguna. After the 10GHz rig failed (more on that next month), we did several hours of photography at the soon-to-be-demolished abandoned radar site.

Work Party Report

by Dennis KD6TUJ

Some of the gang went to the repeater site on Palomar Mountain on Sunday, August 15, 2010. Planned was a general maintenance of the property, check of power output and SWR on the repeaters, a check of the 6 meter antenna, and a check of the tower base bolts by sampling one footing. Things seemed to go well starting with cutting a downed branch. Al Donlevy was very busy with yardwork. Pete, Michelle, and Dave got the generator started after it sat unchecked for quite a while. Al discovered the air/fuel needle was used to shut off the gas instead of using the fuel shut off. Bob, Cynthia, and Pete came for general help and a tour of the site. Batteries were checked for water level, and all batteries looked good.

Dennis did the power checks with the aid of Paul. Bob, Michelle, Paul, Pete, and Dave laid the 6 meter tower down to inspect the antenna. It had only has one ground radial of the three that were there at one time. We first checked the SWR on the 6m antenna and feedline and found it to be low. We suspected it was low due to loss in the coax. In order to test that theory, we disconnected the coax from the antenna and measured power out to the feedline with no antenna connected at 2W. We then measured power at the antenna end of the feedline, which was 1W. This is a reasonable amount of loss for this length and type of feedline. About this time the meter started reading zero for all measurements, and had to be swapped out with another meter.

The 146.700 packet repeater was found to have some serious antenna problem with 12W out and 10W reflected. To prevent damage to the repeater we turned it off until we can go check the coax and antenna with a time domain reflectometer.

Bob decided to check and note the DC current consumed when each repeater was in use. 6m consumption was about 1A during transmit, which was consistent with the low output power that has been observed. The 447 repeater went from 1.5A standby to 5A transmit, the 075 machine went from 1.5A standby to about 4A transmit, and the 730 and 130 both had about 2A in standby and both pulled about 3.5A in transmit. The 1.5A standby current was the total for the whole site, and not a standby current for each repeater. These currents were measured at about 55 volts (48 volts nominal).

Don, Cynthia and several others chipped out the tower leg for the visual check of the leg mount bolts. The bolt legs had a light coat of surface rust. Not bad for a tower sitting on a base set by Stan in 1984. Paul read the directions and sprayed galvanizing on the bolts. Dennis then sealed the legs back into concrete.

Don helped to find the problem with the temperature-activated cooling fan in the generator building. After not being able to trace power through the walls, it was diagnosed from the connection box outward in both directions. We could not find the temperature switch, so off we went checking the housing of the fan, and it was not there. Where did the power come from? We checked the light switches (who knows after so many years and changes of members) for an extra lead. Then right in front of us, there it was next to the breaker box. The best place to hide something is right in front of us. Worked very well. After finding the sensor switch we noted it was set for 110 degrees, the cause of our problems. Resetting to 85 degrees turned on the fan for this very hot room.

Michelle made written notes for the record, while Don, Michelle, and Paul made photo records to go along. Before leaving, Conrad did a final check of the site for loose/soft dirt spots. He decided to park in the softest spot possible. Dennis came over to try and get the truck out. Tried to rock it by going forward a ways, then powering out in reverse. Tried it a couple of times. Worked great, if you like digging ruts and blowing dust to impair everyone's vision. Finally decided to go forward, either making it out or getting stuck even better. Aren't hams great at making things better. Making the plan to go in and

make or bury it trying, it was noted that there are a few stumps spaced just right to slide through with an inch or so left. Using the human markers of Don and Conrad on the stumps, Bob help guide Dennis through the course. Driving in by Don the first stump was

felt just barely, but continued, going through the course to make a hard right to slide by the generator building, and making it out. We will now have a no parking area on the entrance lane. Additional help was given by Art through advice and equipment loan. The day was beautiful with moderate temperatures, sunshine, and gentle breezes.

Here is the to-do list generated at the work party. The list has items that are related to the repeater site but also includes other tasks and jobs that club members are interested in doing or getting help with.

- Don Johnson will be writing a filter article.
- Pete from Oceanside had a handout about the antenna ordinance.
- Dig out concrete at base of tower and inspect tower supports.
- Check SWR and rated power for all repeaters.
- Power Puck Project: Rig remote control power system. We have the hardware, need work.
- Design and build a battery monitoring system.
- Improve the 075 machine power amplifier. We have the hardware, we need work.
- Spectral purity check. We need a spectrum analyzer to do this.
- Control receiver antennas are all bent to heck and need to be fixed. This requires tower climbing.
- ATV antennas include a BBQ-style dish, a box, and a vertical. The vertical has missing elements.
- The 6m antenna needs replacing.
- 730 repeater needs to have the capacitors replaced.
- Our ATV system is being refurbished, but we don't know if the fellow that volunteered needs help or additional resources. We need to check and see how it's going.

- Webcam on tower!

Conrad KG6JEI and Dennis KD6TUJ went up to the repeaters on Sunday, August 22 to check on the 73 machine, and sent in the following report.

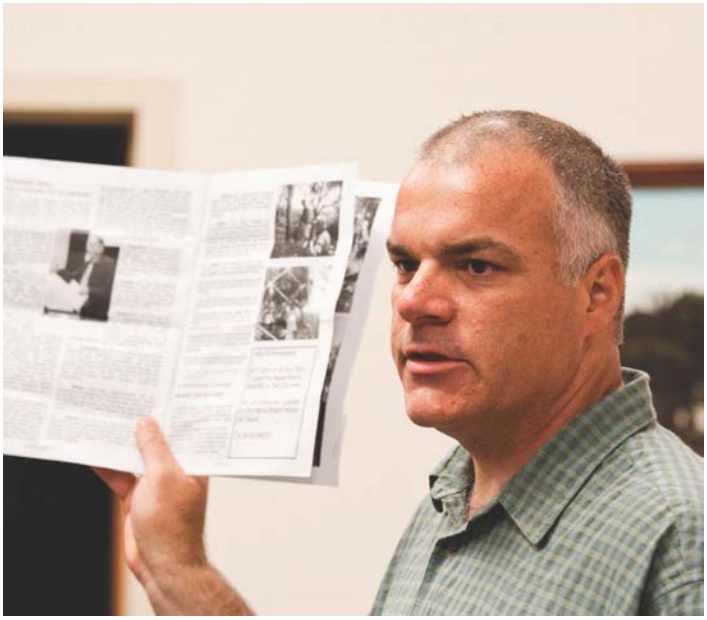
"We found that the power lead to the preamp came loose. We tried to connect it but the lead would not stay as we are trying to set the lead to a small nub.

We then decided to bring the pre-amp down to check and also check the BNC connector. All was not lost as we found both ground plane elements for the six meter antenna, so we put them back on. Imagine, a 5/8 wave 6 meter antenna with all three ground radials on the hill.

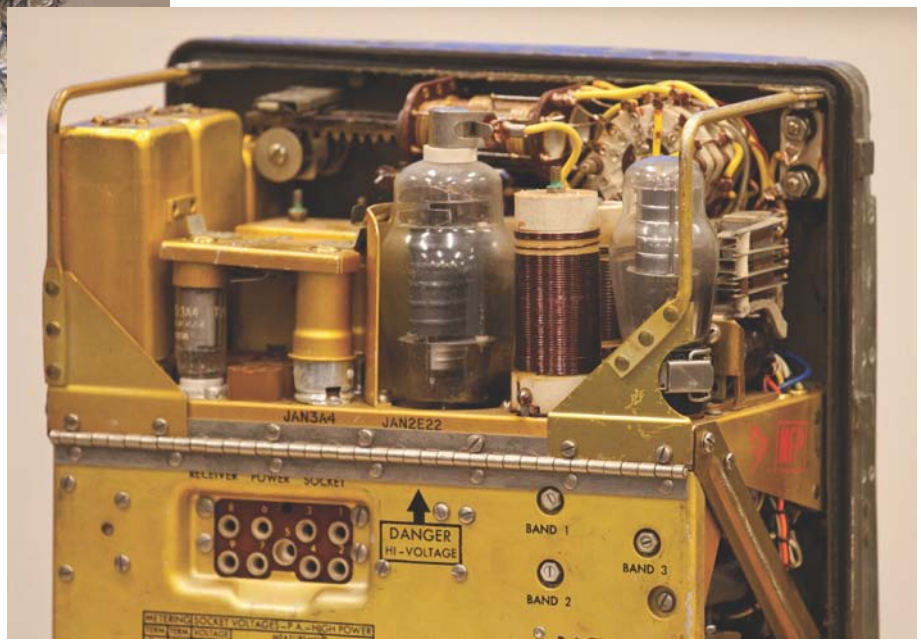
Conrad also noticed that a hardline was disconnected to the sunken building. After all of us walking right by the connector box last Sunday and no one noticing, it was good to find. This may be why the 146.700 packet repeater was with a high SWR.
We reset the connector on the hardline and Conrad will test it later. We weren't planning on finding the SWR problem today, so we did not take any watt meters."

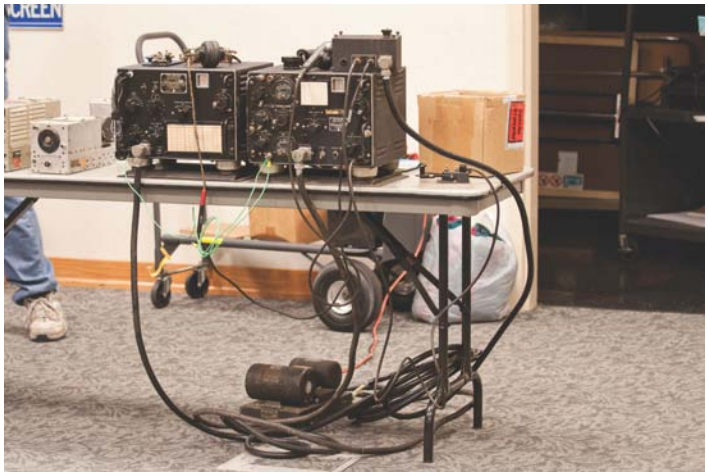
Thank you to everyone that has helped with the repeaters this August. The site looks better and a lot of progress was made towards improvements.

Above, Gayle KG6O expertly upsells books for a good cause. Ham Radio For Dummies - buy one to help out the utes! Below, Wild Bill WB6BFG announces the roving station for the VHF/UHF contest. We're hoping to get a full report for inclusion in a future Scope. Photos by Paul KB5MU.

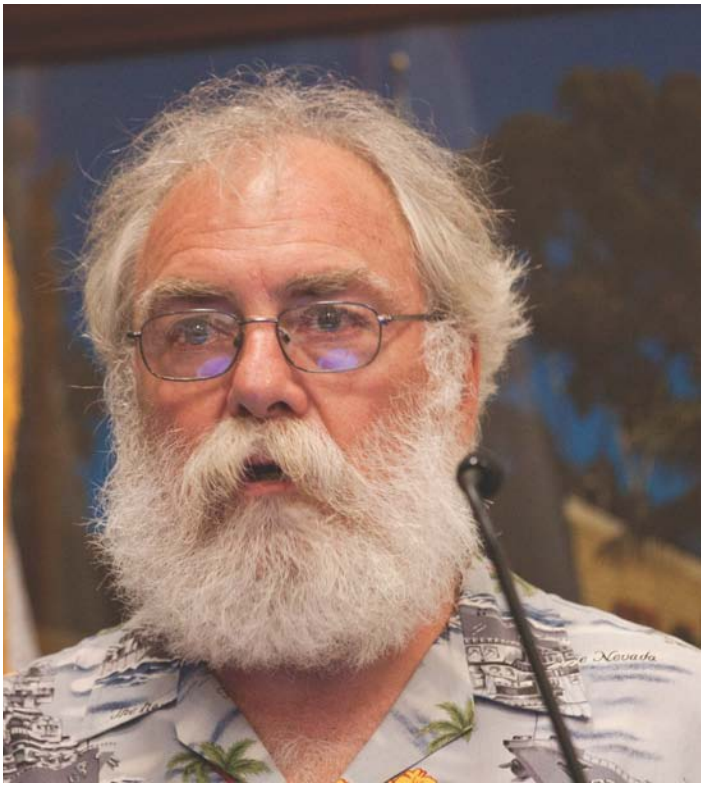


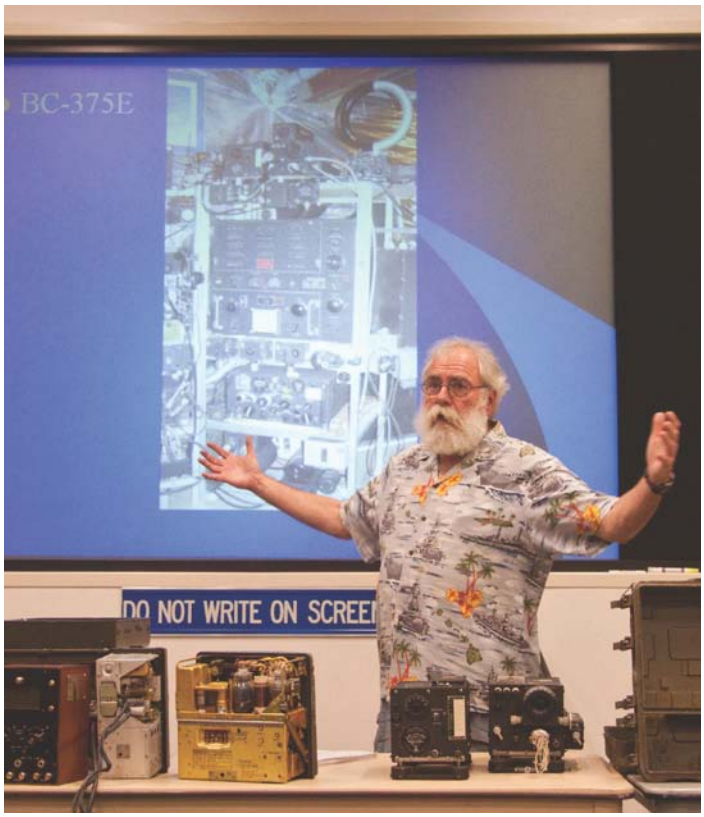
Above, Fred Atchley's son brings everyone up to speed on the latest plans for influencing Oceanside's proposed antenna ordinance. This is a critically important issue to amateur radio in San Diego. Help is needed with the effort to make sure that amateur radio antennas are treated fairly under the laws of all communities in San Diego County. Below, military radios demonstrated at the August PARC meeting. Photos by Paul KB5MU.





Above, Dennis N6KI poses with a piece of test equipment that W5NYV brought home. The rest of the photographs on this page are from Ed KG6UTS program on military radios. Photos by Paul KB5MU.





Above, Stan Rohrer W9FQN (recently accorded "legend" status in PARC from none other than Nash) talks with another well-known local ham, none other than Ed Ross N6GZI. Photos by KB5MU.

Nash W6HCD at 95! Here are some photographs from the celebration.

"That must be the secret to Nash's longevity!" -Some Guy at Nash's Party (We think it was Dick K6KAL) Photo by KB5MU.

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Editor: Michelle Thompson W5NYV
Submissions: scope@palomararc.org
Questions? Ideas? Comments? W6NWG@amsat.org

Featured Program:

At 7:30pm, Palomar Amateur Radio Club will host a program at the monthly membership meeting on 1 September 2010. The presentation will be on SoLar Power & Emergency Preparedness by Bob, KJ6RET. The presentation will include a practical explanation of how to use Solar Energy for Off-Grid Mobile and Portable applications and the use of Modeling Software to design Critical Emergency Systems. It will overview a real life experiment to prove concept for the usage of Solar Energy for Emergency Communications and Everything Else in short term or long term disaster scenarios. It will include a hands-on demonstration of a Portable Solar Power Station and the open house of a Mobile Solar Power Off-Grid Trailer System.
Arrive at 7:00pm to socialize. We look forward to seeing you at the Carlsbad Safety Center, 2560 Orion Way, Carlsbad, CA.

SCOPE

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

Palomar Amateur Radio Club will celebrate its 75th anniversary in February of 2011. Please send in stories and pictures (with description and names if possible) for inclusion in the SCOPE. Old-timers please help, newer members send in things also.

October Meeting

The club's annual auction will be held on October 6, 2010 (the first Wednesday of the month) at 3096 Harding Street in Carlsbad. Sellers arrive at 6pm, buyers arrive at 6:30pm, auction starts at 7:00pm. Please see page 4 for complete details.

Radio Club Resources

Check out these great local radio clubs on the web at the following addresses.
http://www.fallbrookarc.org/
http://www.sddxc.org/
http://www.earsclub.org/
http://roars.net/
http://www.wa6bgs.org/
http://n6six.50megs.com/

YL DXpedition

At the August 2010 PARC meeting, Gayle K6GO announced a YL DXpedition to Curacao, planned for March 17-22, 2011. There are eight participants so far and we are welcoming more! If you are a YL and would love to come to Curacao, please contact Gayle at gayle_olson@sbcglobal.net.

Save the Date

Club Meeting
6 October 2010

Come to the annual club auction. Buy and sell some treasures - get inspired for a new project!

Board Meeting
13 October 2010

Palomar Amateur Radio Club board meeting at 7:00pm at KB5MU QTH

Club Event
November 2010

We're planning another operating day at Double Peak Park.

Club Membership for October Edition

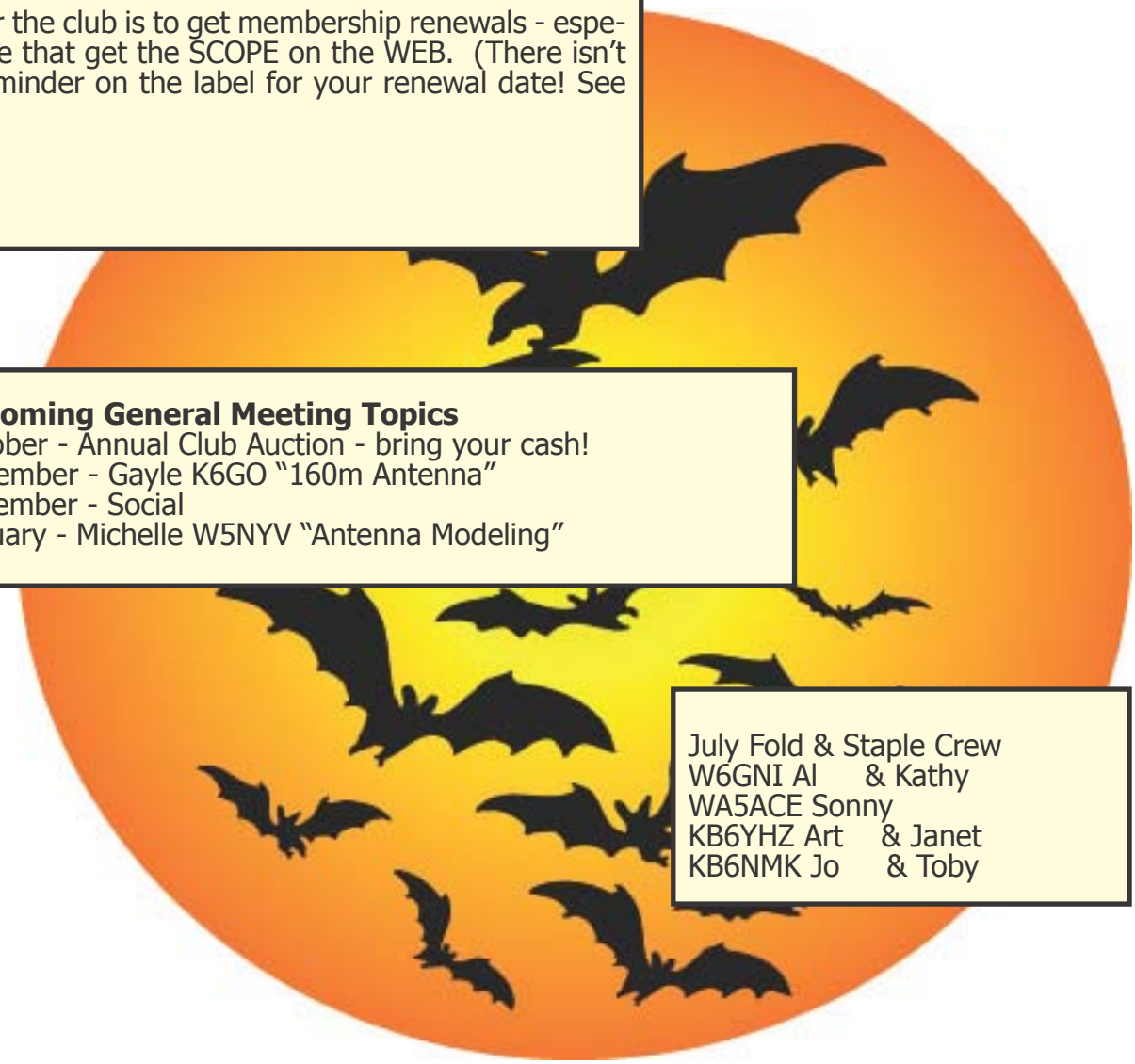
New Members Joining PARC:
KJ6KGH, KJ6KDM, KJ6JUS, and K6JQE.
Be sure to greet these new members when you see or hear them on the repeaters. In addition, 5 reinstated their membership. Thank you.

Here is the list of members receiving the SCOPE on the web, that "expired" in the last month or so. Please check this list, and get your renewal checks in the mail! Please!!!
N2DKO, KG6ETI, KI6GD, WB6MEI, W6CDU, KI6ZLG, KI6THI, K6DRH, KD6FY, K6MHG, KG6NDX.

It costs about one dollar for us to print and mail the SCOPE now, and it was only 47 cents early last year. We are looking for ways to reduce this cost!! Those that chose to receive the SCOPE on the WEB represent a nice cost saving per issue!! (And you see the photos in color, and receive the SCOPE the same day it goes to the printer). Why not check out the web site, and see if receiving the SCOPE there would work for you! Think - Palomar amateur radio club dot Org. (www.palomararc.org)

The problem for the club is to get membership renewals - especially from those that get the SCOPE on the WEB. (There isn't the monthly reminder on the label for your renewal date! See the above list!)

Al W6GNI



Upcoming General Meeting Topics

October - Annual Club Auction - bring your cash!
November - Gayle K6GO "160m Antenna"
December - Social
January - Michelle W5NYV "Antenna Modeling"

July Fold & Staple Crew
W6GNI Al & Kathy
WA5ACE Sonny
KB6YHZ Art & Janet
KB6NMK Jo & Toby

Advertisements are free for members

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

For Sale

This is a Hewlett-Packard 3577A with the 35677A S-Parameter test set and all interconnect cables.

With an open – short – load you can calibrate out transmission lines and take antenna measurements up on the tower.

I am looking for $3000 or best offer.

Mike-lebo@gmail.com

For Sale

Item	Price
YAESU FT-1000	$2,500.00
Kenwood TS-950 S	2,500.00
FT-2500 M	350.00
Kenwood SWR/PWR Meter, Model SW-2000	50.00
TR-7330 2 M	150.00
Astro PS7 A	25.00
Cubic Astro -150 A-10-80M Transceiver	250.00
Ten-Tec Centurion amp 1kw	1,500.00
Ten-Tec Titan amp 1kw	2,500.00
FLUKE Meter Model 77	65.00
SHURE Microphone Push to talk Model 444	30.00
3-500 tubes	100.00 ea.

Contact: R. F. Krist, W6KTE, (760) 724-2786

For Sale
Crank-up tower, 4 sections (collapsed length=12' 9"), triangular- 18" bottom to 10" top. 3' top bolt on tapered section with rotor head and thrust bearing installed + 6' of pipe above the taper. Base plate 22" x 22" with 3 studs to set tower on. Lifting winch had a motor at one time but now gone, leaving a spline shaft sticking out of the worn gear box to which a handle or motor can be grafted. Located in Poway, weight 400+/- lbs for tower alone and 150+/- lbs for the top piece, base plate and winch - $250. Gary 858-748-6076 wb6gsn@gmail.com

For Sale: HUSTLER 6BTV High Performance HF Vertical Antenna system, 80/75/40/30/20/15/10 m, complete with 250ft spool 14 ga wire and all precut radials, SS Tilt base and SS Radial plate. Used one year. Bought new at $400, will sell for $200. contact: Rich Ortloff KE6DUG 760-861-1406

For Sale: 6BTV Vertical Antenna. Crank up Tower with rotor and 3 El Yagi. Must be taken down and removed. Call Lee, (760) 726-1097

Annual Club Auction

by Michelle W5NYV

It's almost October, and that means it's auction time. Come to the General Meeting on October 6th and join the fun!

Where: 3096 Harding Street, Carlsbad CA

Any radio item new or used, working or not (boat-anchors included) will be tagged with the seller's information. Both buyers and sellers will register prior to the meeting. Please plan on arriving early to get a look at the auction items. Hams interested in bidding on items will be given a numbered card to hold up on items they would like to place a bid on. Any further questions can be directed to: board@palomararc.org

A suggestion heard at the September 2005 meeting: put those address labels you get in the mail to good use by bringing them to the auction. Instead of writing your name over and over, use the stickers instead.

If you have a wagon or other wheeled cart, please consider bringing it in order to transport items more easily into the building. The club will provide one wheeled cart for transporting equipment in and out of the building.

Art KC6UQH will be the auctioneer for the evening. Start planning now for the treasures you'll want to bring and the treasures you'll be sure to find.

Room set-up starts at 5:30pm. As soon as the room is set up, sellers sign in and tag equipment. Bring your stuff early! 6:30 to 7:00pm buyers are registered (required!) and may view the offered equipment.

If you have questions about an item, this is the time to ask it. Inspect equipment before the auction so you know what you are bidding on (write its auction number down!) Auction begins at 7:00pm.

PARC Auction Schedule

Room Setup	5:30pm
Sellers Allowed In	6:00pm
Buyers Allowed In	6:30pm
Auction Starts	7:00pm
Auction Ends	9:00pm

PARC receives 10% of the sale price and there is no other fee for buyers and sellers. Donations to PARC are accepted. All monies are paid to PARC. Seller(s) may set a written minimum bid on their items. Seller is responsible for removing any item(s) not sold. PARC does not guarantee the condition of any item sold.

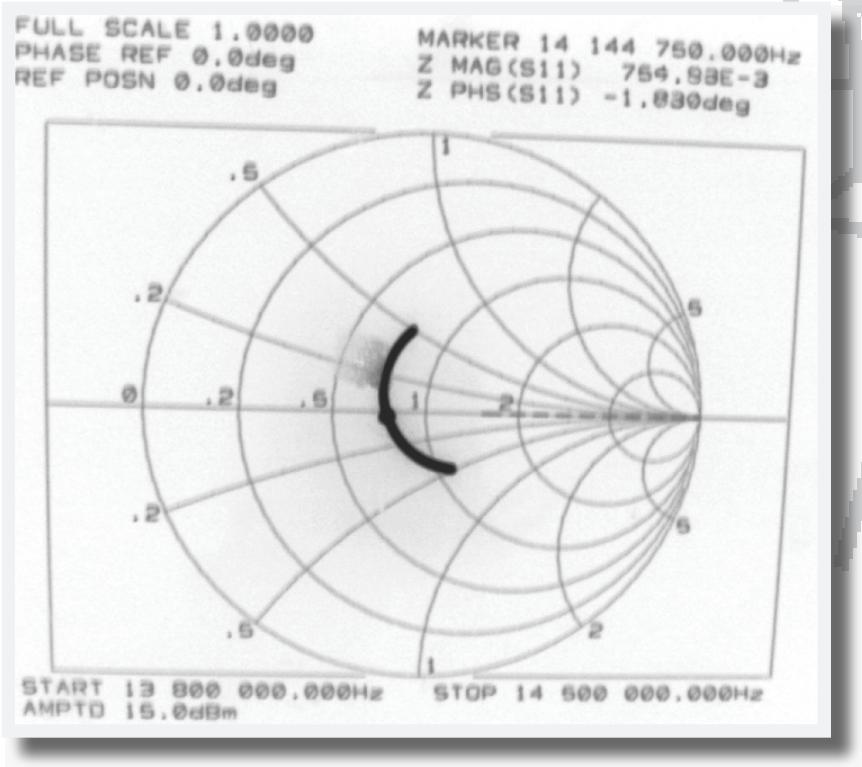
You don't have to be a PARC member to participate in the auction, so invite your friends to join in on the fun. Sellers will not be paid their money until all monies have been collected that evening, so bring a Self Addressed Stamped Envelope if you want the check mailed to you the next day, or pick it up at the next club meeting.

In previous years, the auction has been held outdoors (in a surprise move due to a conflict in room reservation), in the smaller EOC meeting room, and in the larger EOC meeting room.

So how do you measure the gain of a 20 meter beam?

By Mike Lebo N6IEF

The answer is that you can't. So what is the practical solution to the question? You design a beam, calculate the gain and SWR, build the antenna, and measure the SWR with a vector network analyzer over the antenna bandwidth. If the measure SWR is very close to the calculated SWR, then the antenna gain should be close to the calculated gain. See the figures below.



Upcoming Program

Interested in antenna modeling? The PARC program for January 2011 will be about the art and practice of mathematical models, with an emphasis on antenna modeling for amateur radio.

Also, PARC has a team that will model proposed designs for an upgrade of the club's 6m antenna on Palomar Mountain. See page 11 for details.

Minutes

Palomar Amateur Radio Club Board of Directors
August 11, 2010

The meeting was called to order at 7:21 by Gary Kent, W6GDK, who then yielded to Ron K2RP who then yielded to Dennis KD6TUJ who was late in arriving.

President Dennis Baca KD6TUJ
Vice President Ron Pollack K2RP
Treasurer Georgia Smith KI6LAV
Secretary Gary Kent W6GDK
Director #1 Paul Williamson KB5MU
Director #2 Conrad Lara KG6JEI
Membership Al Donlevy W6GNI
Scope Editor Michelle Thompson W5NYV

Treasurer's Report The treasurer's report for July presented by KI6LAV. Total assets as of 7/31/2010 are $13,446.09. Income was $843.02, Expenses were $959.93. Motion to approve both reports by KB5MU, second by K2RP. Approved

Secretary's Report- Minutes of the July meeting were presented by W6GDK. Motion to approve by KI6LAV, second by W6GNI. Approved

General Meeting: September meeting will be by Robert Todd KJ6RET on Solar Power for Amateur Radio. October is the annual auction at the Harding Community Center in Carlsbad. November is Antenna Modeling by W5NYV

Membership Report: Current membership is 287.

Repeater Site/Technical Report: There will be a work party on August 15. Meet at Mother's Kitchen and leave there at 10 AM for the site. Still need a new Technical Chairman

NEW business:

Nash Williams, W6HCD will be celebrating his 95th Birthday. N6KI wants the club to get Nash a new two meter antenna. K2RP moved that the club donate $50.00 to Nash's Birthday Fund. Second by W6GDK. Approved.

Annual picnic is scheduled for August 29, at 9:30 AM. A discussion about awarding participation points was held.
K2RP moved that we allocate $300.00 for the raffle prizes. Second by KI6LAV. Passed by 6 Aye, 1 Nea.

W6GDK moved that we approve a food budget not to exceed $200.00 for the picnic. Second by K2RP. Approved.

The Palomar water department wants us to vote with a proxy vote. No action at this time.

It was also noted that we need to renew our Raffle permit with the state. No cost is involved.
OLD Business:

The generator conversion for propane still needs to be done.
On February 26, 2011 the club will celebrate its 75th Birthday. Discussion of plans was held. No decisisons.

Motion to adjourn at 9:12 PM by W6GDK, second by K2RP. Approved

Next meeting will be at home of Paul Williamson KB5MU on September 8, 2010 starting at 7PM. Address is 5371 Carmel Knolls Drive.

Submitted by Gary Kent W6GDK

Repeater Site Report

On Sunday September 5, 2010 Art KC6UQH, Don WB6FWE, Conrad KG6JEI, John KJ6DPR, and Dennis KD6TUJ went to the PARC site to continue maintenance on the 146.730 machine. Art and Conrad went to work on the 673 replacing the power injector for the pre-amp changing sensitivity from -84 dBm to -130 dBm. Quite a difference. Next they went to the 075 machine and traded out the PA unit with a replacement started by Loren AD6ZJ and completed by Conrad and Art. The 6m box was also checked. A history of contacts becoming dirty has lowered power out in the past so it was suggested to wiggle the contacts clean. Art also used "blue stuff". The result was an improvement upwards of 5 watts from 1.5. I also cleaned and adjusted the receive helical resonators on the 075 in hopes of solving the intermittent receive sensitivity. Also removed the two diodes in series to lower the 12 volt battery supply on the 6m.

John was given a tour of the site. Don and Dennis found the tension meter and checked the guy lines. They varied from 45 pounds to 110 pounds. All were adjusted to 85 pounds. Thanks for the lesson Don. The batteries are still holding water well and did not need topping. We, as a group decided to find the 12V DC source. Surprised us all that there is a drawer under the 48V charger that has the 12V DC system in it. A 12V charger into two 6 volt golf cart type batteries.

For our next trip we should bring up some roof patch and again seal the seam covering the 6m repeater. Also we should print a copy of the current club license for on site posting.

PACIFICON

The American Radio Relay League Pacific Division & the Mt. Diablo Amateur Radio Club Present PACIFICON 2010

Ham Radio Convention Returns to the San Francisco Bay Area October 15-17, 2010, San Ramon Marriott Hotel San Ramon, California
For Event Schedules, Latest Updates and Ticket Sales go to: www.PACIFICON.org
Call the Marriott Hotel Reservations Desk at 1-800-228-9290 before October 1, 2010, to ask for the special Pacificon rate of $90/night.

PACIFICON 2010 Events Include

** Friday All-Day Antenna Seminar
** Friday Legal Seminar
** Friday Evening Open MDARC Meeting
** Saturday Keynote Breakfast
** Saturday Evening Banquet
** Outstanding Technical Forums
** Ham Equipment Exhibitors
** Great Swap Meet
** Daily Radio Prize Drawings
** ARRL Forum
** Transmitter Hunt
** ATV Forum
** HFpack & QRP Activities
** Ham License Exams
** Saturday All-Day Technician License Class
** Boy Scout JOTA

Club Picnic Report

by Dennis KD6TUJ

On Sunday, August 29, 2010 The Palomar Amateur Radio Club held it's annual picnic for the membership at San Dieguito County Park.

Upon arriving with the antenna trailer (Conrad, Greg, and Dennis) we noticed Rick N1OW arrived just prior to us and was already setting up shop. Conrad actually parked the trailer in the far corner. I wanted to bring it closer to the table areas so the coax would reach. After setting the trailer closer, it was pointed out that above the spot was 10,000 volt power lines. Not a good choice. I then moved it across the lot to the far side for assembly. By this time Rick was almost done setting up. The antenna assembly went well. Setting the tower upright we noticed a little angle to the beam. Instead of being flat to the ground (90 degrees), it was about 70 degrees. Oh well. Some members started showing up. Looking back toward Rick, he had started cooking and was going full out.

Bringing out an ICOM IC_735 Tom KG6RCW tuned up 20 meters and dialed around. Greg KI6RXX and Conrad KG6JEI got the supplies together to place 2 t-hunt radios. Checking back on the HF I found a strong station at 14.246.9 and contacted TF8GX. Iceland. Other contacts made included W9IMS, Indianapolis Motor Speedway, W9Y at an airshow, and KC7YRA in Casper, Wyoming.

Conrad and Greg made radio checks for the hidden transmitter hunt radios and ended up bringing one back as it was not working right. It showed it was transmitting, but it could not be received. Ron K2RP brought a Heathkit HW 101 Plugged it in and made a few more contacts. Rick then called for the feed. A great spread was put out.

A portable extendable J-pole type 2m antenna was brought out to demo but only displayed as a piece was not there to finish the project. It will extend to 19 feet, collapse to 38 inches and store into the base section of 43 inches, and is UPS shippable. When finished at home it carried a .8 to 1.2 SWR across the 2m band. (W2IK's quick-stic) Plans were brought to try a halo antenna project, but they would not display on the computer brought. (KR1ST halo antenna) Waiting for the 2:00 drawing I decided to check the problem with the t-hunt radio. Turned it on. Batteries seemed good. Transmit light shows it was transmitting. I dialed up the frequency on another hand held, nothing heard. Checked the frequency again. 145.570, Yep, on frequency. Looked at the Tx radio and DUH. The ICOM 2AT was dialed at 570. When the frequency was changed to 145.560 it must have lost a digit. Resetting to 557 brought the radio to life (reception).

Bringing us to the raffle for participation points, there were over 250 tickets distributed. Prizes are gift certificates to HRO. Winning are N6KI $100, KB6NMK $50, K2RP $50, W6GNI $25, W6YOO $25, KC6VDX $25, KJ6RET $25. Also a wifi adapter was won by W6GDK.

An ICOM IC V-82 was also brought out for a raffle. Enough sales were made for a drawing. The winner is Eugene, a friend of Dick and Rusty. After the drawings some more fun was had before finishing the day.

After the trailer was parked back at TOWizard it was noticed that the stay bolt for the tower in the up position was missing. Small loss but easily replaced. Guess what? On Tuesday I noticed a bolt just like the one used for the stay bolt in the middle of the intersection of hiway 76 and Benet. Less than two miles from storage.

A random drawing of those who found the hidden

Make sure you're on the right frequency! This is good advice for any and all amateur radio activities.
Photos by Dennis KD6TUJ.

transmitter was to be held after the picnic. Only one eligible entrant was received.

At the September meeting KG6HSQ Ron Patten received 5 raffle tickets towards the next IC-V82 raffle for his diligent efforts in locating the hidden transmitter.

Hopefully next year more people will find where we hide them. Keep an eye out for tools of the trade at swap-meets, gatherings, and of course the club auction and build up that DF toolbox!

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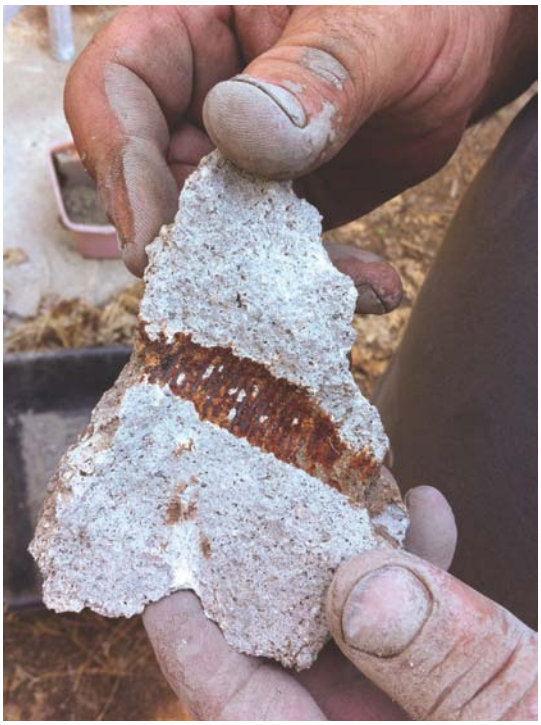
	b1.	0	0	PD out of Co.
	b2.	175	174	Pd in Co
	b3	0	0	
	b4.	1	1	Other mailed
	c.	176	175	
d1.	0	0	Free out Co (3541)	
	d2.	5	4	Free in Co
	d3.	1	1	Other Class Mailed
	d4	7	8	1st Class Paid
e.	13	13	Sum 15d 1 - 4	
	f.	189	188	Total Free/Dist.
g.	2	2	Publisher Copies	
	h.	191	190	Sum 15f + g
	i.%	93.12	93.09	15c / 15g x 100

Printed October 2010 issue of SCOPE
(Mailed Sept. 2010)
Signed: A.L. Donlevy Publisher
09/20/2010

20m Field Day Antenna Rooftop Installation

by Mike Lebo N6IEF



August work party. Above, concrete that surrounded the inspected bolt. Above right, tower footing covered back up with fresh concrete. Below left, fresh concrete being applied. Thank you to all who helped with the August work parties! Photos by Paul KB5MU.

SWAT!

Six-meter Wildass Antenna Team

by Michelle W5NYV

At the August work party, the Palomar Amateur Radio Club kicked off an effort to redesign the 6m antenna. The existing antenna has suffered some damage and hasn't been at its best over the past few years.

Several club members decided to do something about it, and have organized a SWAT (with apologies to Preston W6ASP) with the goal of completing the modeling, design, construction, installation, and testing of a new 6m antenna. Designs for the new antenna will be unveiled at the January 2011 club meeting as part of the Antenna Modeling program presented by Michelle W5NYV.

SWAT invites any and all interested club members to participate. There are two requirements. You must come up with a fancy title. Browse the list of SWAT members for inspiration. The second thing that you need to do to participate is to model a 6m antenna suitable for use on Palomar Mountain.

There is a variety of modeling software available for free. One does not have to spend a lot of money to begin antenna modeling.

SWAT succeeds if a diverse variety of designs are submitted for consideration. If you have been mulling over antenna modeling, or casting about for a reason to play with modeling software, then this may be the perfect project.

Here we are! Join us and have some fun fixing up the 6m antenna for PARC!

SWAT Members as of October 2010

Captain Cynthia KJ6HCT
Colonel Rob KJ6RET
Empress Michelle W5NYV
<your name and title and call here!>

Palomar Mountain has ice during the winter, so durability is a primary concern. The mast that supports the antenna is raised and lowered by hand-operated winch. It's a steel tubular telescoping crank-up mast with a tiltover base, and is about 25 feet tall.

To participate, mail a quick note with your name and SWAT title to board@palomararc.org and we'll be in touch with you to assist and collaborate. This is an opportunity for fun and learning. Any level of experience with antenna modeling is welcome.

Free Antenna Modelling Software
To get you started

Download free version of Expert MININEC Classic by following the link at http://www.emsci.com/

Free version of EZNEC (limited to 20 segments) available at http://www.eznec.com/

Have a Mac? Try the free cocoaNEC 2.0 http://homepage.mac.com/chen/w7ay/cocoaNEC/Contents/Downloads.html

Or, embrace your inner geek and run raw NEC. It's free. Read more about it at http://www.nec2.org/

Trailer Installation

by Paul KB5MU

Michelle W5NYV and I (Paul, KB5MU) recently bought a 23' travel trailer for Burning Man and other adventures. We purposely selected an older well-used model, so we wouldn't feel bad about cutting holes and radically redecorating. Of course, the first order of business was to install a convenient ham radio station for HF, VHF, and UHF.

As with any mobile installation, the key questions were where to put the antennas, where to put the radios, how to run the coax between those two places, and how to hook up the radios to a clean source of power.

Antennas first. There's plenty of room on the roof of the trailer, but the roof is already pretty high, so any significant antennas mounted up there would have to be folded down before driving. What's more, the trailer is roofed like a cheap shed, with no access between the ceiling and roof, and no really good way to seal up any new holes. The roof isn't metallic, so it's no use as a ground plane, either. After struggling with these issues for a while, I finally realized that there's actually no reason to permanently mount antennas on the trailer. Nobody is in there to operate when it's in motion. The typical usage pattern is to drive somewhere, park it, and set up to stay for a while. A temporary antenna that's easy and quick to set up would be just as good as an installed antenna that has to be deployed from a folded position on the roof. Maybe better, since it can be higher.

The base is in two parts: the horizontal platform provides a standard 2" trailer hitch receiver, and the vertical tubing is welded to a square tube that fits inside it. The cardboard you can see sticking out of the vertical tube (from a 12-pack of Coke) is to protect the surface of the telescoping mast from being damaged by the screws in the base.

With that insight, the plan came together quickly. I picked up a lightweight telescoping mast about twenty feet tall (see photos), and installed a bracket at the top of the type intended to clamp to a truck's mirror bracket. For VHF/UHF, I bought another copy of my favorite mobile antenna, a Diamond NR770. This is a dual-band (2m and 70cm) half-wave vertical design, so it works fine floating in air with no ground plane in sight. Stuck on a 20' mast, it should outperform most mobile antennas. That same mast can also support an HF wire antenna of whatever type is convenient for today's RV parking place, be it a dipole or a random wire or whatever. One catch is that the lightweight mast really needs to be guyed if fully extended, if strong winds are a possibility. (At Burning Man, strong winds are a certainty.)

A good base for the mast makes it sturdier and much easier to deploy, so while at HRO I also bought a clever aluminum base (see photo). You plop it down on the ground and drive one wheel of a vehicle onto its side platform, pinning it to the ground quite securely. In our case, we put it under one tire of the trailer. This is a convenient location for coax routing, and also permits the tow vehicle to leave the campsite without dismantling the antenna. This base doesn't fold over, which would be useful with a heavier mast or bigger antenna, but is not necessary with our lightweight choices.

Inside the trailer, there are a couple of different

places to sit down, so it's not immediately obvious where the radios ought to be. That's where the question of power comes into play. In this particular trailer, the main AC and DC power distribution, circuit breakers, and fuse panel are centrally located near floor level below the sink. That location is on the opposite side of the hall from the main kitchen table. Bringing power across from one side of the trailer to the other would be easy -- in the factory. But in the field, there's no non-destructive access to the insides of the walls or below the flooring or above the ceiling. It wouldn't be pretty. Luckily, there's a little auxiliary side table that folds out next to the sink, facing a sofa. That would be our operating position.

Yes, the IC-7000 can also do VHF and UHF, but I wanted to be able to monitor VHF and UHF FM continuously while also tuning around on HF. A separate VHF/UHF rig makes this possible. The FT-8900R also supports 6m and 10m; these bands don't add much to the price and might come in handy someday.

The sink in an RV is plumbed pretty much like your kitchen sink. That means there are big awkwardly-shaped pipes below the sink that render that compartment pretty useless as storage space (see photo). But the inside surfaces of the cabinet are available. That compartment is just inches away from the main DC distribution panel. Miraculously, an unused fuse position was available in the DC panel, so hooking up to trailer power was as simple as wiring up to the existing terminal strips and installing a new fuse. For power distribution within the ham radio station, I installed a small Rigrunner with Anderson Powerpole connectors. There are extra Powerpole outlets for future additions, and I can also choose to hook up a separate battery for the radios to avoid running down the trailer's main power.

We chose transceivers that have separate front panels: the Yaesu FT-8900R for VHF and UHF, and the Icom IC-7000 for HF. The main bodies of the radios are installed inside the cabinet below the sink (see photo), where we have our fingers crossed that the drain pipes won't be leaking. Besides the two rigs, I installed an IT-100 automatic antenna tuner from LDG Electronics. This tuner is designed to be remote controlled by the Icom transceiver, so it can stay hidden in the cabinet. With the tuner, we hope that nearly any kind of HF antenna we can throw up will be usable. A small hole drilled in the side wall of the cabinet provides routing for the cables to the control heads, which are mounted on the cabinet wall just above the little folding table (see photo). The IC-7000's control head isn't as deep as the FT-8900's, so I installed a couple of small wooden blocks to bring it out to a convenient position (see photo). The FT-8900R's microphone connector is conveniently located on the control head, but the IC-7000's is on the main body. Another hole in the cabinet wall provides access for that microphone (not shown). The internal speakers are, of course, in the main body on both radios, so a couple of speakers are mounted on the wall nearby. The inexpensive MFJ-281 is fine for

August and September are the months of the annual ARRL 10GHz and Up contest, which is a highlight of the year for microwave amateur radio.

Above, Paul KB5MU helps set up "Hello Giggy" for operation from Las Flores Vista Point, located on the 5 freeway in North County. The tripod supports the box containing the transverter, oven-controlled crystal oscillator, relays for transmit and receive coordination, power supplies, battery, microwave dish, microwave feed, and IF radio. As you can see, there is slightly less need for a compass rose from this particular location.

Upper left, a failure in the power supply connectors can be seen held in my left hand. These are Anderson Power Pole connectors, and sometimes the crimp pulls out. Fortunately, we had tools to fix this particular failure. Unfortunately, the rig failed again in similar fashion to Mt. Laguna after a few contacts at Las Flores. In both cases, the rig simply stopped responding. Power supply oltages were present and the OCXO was still operating, and could be heard at its frequency of 105.6 MHz. The problem is suspected to be related to a particular can in the local oscillator chain. When the screw is turned, the rig often starts working again.

At left, Kerry N6IZW helps investigate Hello Giggy in his garage lab.

Photos by W5NYV and KB5MU.

this purpose.

That leaves coax routing. The nice thing about a small trailer is that every wall is an exterior wall. The back wall of the compartment behind the sink plumbing is such a wall, and not very far away from the left front tire, where the antenna base is to be deployed. I obtained a nice scrap of aluminum plate from Industrial Metal Supply (a very inspirational place, stay away if you don't want to start any new projects). I marked off four holes in the plate, thinking to install four coax connectors. I drilled the corresponding locations in the side of the trailer. Oops! One of the holes ended up dead center on a framing stud. That hole was reallocated for a grounding and mounting bolt, and the other three holes were enlarged with a hole saw to allow plenty of room around the SO-239 bulkhead connectors (see photo). Oops again! One of the other holes ended up drilling into some wires that were inside the wall. These wires had to be repaired before I could proceed with the installation. The plate was sealed to the outside wall of the trailer with plenty of goo (see photo). One of these days I'll clean off the excess.

With the coax feedthrough panel right in the same cabinet with the main bodies of the radios, a short coax jumper is all that's needed to hook the radios up to outside antennas. The connectors remain accessible from inside the trailer, too, so if there's a new configuration it will be easy to change things around. On the outside of the trailer, we just hook up the coax from the NR770 to one of the SO-239 connectors on the panel (see photo) and we're on the air. The HF part of this scheme has yet to be tested in practice.

Nothing here is rocket science, or even innovative in any particular. We just took the easy, simple path, but with some careful forethought about our requirements and desires. Many of the parts we purchased new could have been homebrewed for less money. Your mobile installation will be different, but it won't be rocket science, either. Figure out what will work best for you, and find a way to make it happen.

Here is the antenna deployed at Burning Man 2010. The HF conditions were severely impacted by electrical noise generated by the participants. Electroluminescent wire and a wide variety of generators combine to almost completely blank out the HF bands. However, VHF and UHF communications are common. The daily noon ham net was fun, and KB5MU served as net control at least once.

The open-source cellular software project Papa Legba attended in 2010, but we were unable to connect to their cellular system.

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Editor: Michelle Thompson W5NYV
Submissions: scope@palomararc.org
Questions? Ideas? Comments? W6NWG@amsat.org

Featured Program:

The club's annual auction will be held on October 6, 2010 (the first Wednesday of the month) at 3096 Harding Street in Carlsbad. Sellers arrive at 6pm, buyers arrive at 6:30pm, auction starts at 7:00pm. Please see page 4 for complete details.

SCOPE

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

Do you have news? An idea for an article? Please submit it! We are always looking for articles, and need your help to spread the word on club member activities.

Palomar Amateur Radio Club will celebrate its 75th anniversary in February of 2011. Please send in stories and pictures (with description and names if possible) for inclusion in the SCOPE. Old-timers please help, newer members send in things also.

On October 16, 2010 Palomar Amateur Radio Club supported three different repeater hosted events. On the 147.075 MARA conducted an exercise to achieve simplex mapping. On 147.130 the MS140 bicycle ride conducted safety communications. On 146.730 the Boy Scouts participating on the Jamboree On The Air used the repeater to introduce and promote amateur radio. Over 40 Scouts received their Merit Badges on Saturday.

PARC also provided HF equipment, some members, a total solar station, and t-hunt radios. Kudos to N6KI, KG6RET, KG6JEI, KJ6BWX. KJ6BWX, a 15 year old scout coordinated this event.

October's annual auction went well.

November's meeting will be with Gayle K6GO, and compatriots on a 160m portable antenna.

November 14 PARC will host another Operating Day at Double Peak Park in San Marcos from 8:00 to 5:00 PM. We will have HF, d-star, PSK31 and other digital modes, satellite, and hoping for ATV. We are trying to demonstrate and encourage new users to try different modes and upgrade. Open to all, especially the public.

December meeting is elections and year end social.

January will be on antenna modeling.

Dennis KD6TUJ
Palomar Amateur Radio Club

Save the Date

Club Meeting
3 November 2010

Gayle Olson K6GO will present a program on 160m antennas.

Board Meeting
10 November 2010

Palomar Amateur Radio Club board meeting at 7:00pm at K2RP QTH

Club Event
14 November 2010

Club Operating Day at Double Peak Park. Everyone welcome!

Club Membership for November Edition

New Members Joining PARC:
KJ6JQV, KJ6KHZ, KJ6KIB, and W6JPK Not bad for the "Auction Night".

I'm pleased that a few members listed as "expired" in the SCOPE, that receive their SCOPE by the web have renewed - great. But still the list grows each month. Since we have published the SCOPE on the web, we have lost 69 members that chose to get the SCOPE on the web, but have not renewed their membership when renewal was due.

The following have not renewed, due in October and November this year, and hopefully they will see their calls here, and get a check in the mail! KI6ZLG, KI6THI, KD6FY, K6MHG, KG6NDX, WZ6RAM, KH6YFS, N6MJS, and W6TXK. Please Renew, Pretty Please!
The club does need your support.

Al
W6GNI

Upcoming General Meeting Topics
November - Gayle K6GO "160m Antenna"
December - Social
January - Michelle W5NYV "Antenna Modeling"

October Fold & Staple Crew
W6GNI Al & Kathy
WA5ACE Sonny
KI6LLC Roni

YL DXpedition

At the August 2010 PARC meeting, Gayle K6GO announced a YL DXpedition to Curacao, planned for March 17-21, 2011. Satellite operations are being investigated. Phone is planned to be the primary mode. The DXpedition will include Gayle Olson K6GO, Rusty Kalkofen AF6WF, Michelle Thompson W5NYV, Ellen Utchig N6UWW, Georgia Smith KI6LAV, Cathy Gardenias K6VC, and Marilyn Bolnick KJ6YL. These seven participants will be operating the Caribbean Contest Consortium (CCC) station PJ2T on as many bands as possible. This permanent station is operated by and for the members of CCC. Members have priority in reserving the station, and have amassed a very impressive record in the 10 years the station has been active in its current form. While none of the YL DXpedition members belong to the CCC, they are hoping to use this experience as a springboard to further YL DXpeditions.

The history of PJ2T has roots in a 1994 VP5VW CQWW CW Multi-Multi expedition organized by Don Karvonen, K8MFO. The operating locations at the station are located in the expansive living room of the station house.

YL DXpedition website
http://www.yldxpeditions.com/

Caribbean Contest Club
http://asgard.kent.edu/ccc/

Advertisements are free for members

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

For Sale

This is a Hewlett-Packard 3577A with the 35677A S-Parameter test set and all interconnect cables.

With an open – short – load you can calibrate out transmission lines and take antenna measurements up on the tower.

I am looking for $3000 or best offer.

Mike-lebo@gmail.com

For Sale

Item	Price
YAESU FT-1000	$2,500.00
Kenwood TS-950 S	2,500.00
FT-2500 M	350.00
Kenwood SWR/PWR Meter, Model SW-2000	50.00
TR-7330 2 M	150.00
Astro PS7 A	25.00
Cubic Astro -150 A-10-80M Transceiver	250.00
Ten-Tec Centurion amp 1kw	1,500.00
Ten-Tec Titan amp 1kw	2,500.00
FLUKE Meter Model 77	65.00
SHURE Microphone Push to talk Model 444	30.00
3-500 tubes	100.00 ea.

Contact: R. F. Krist, W6KTE, (760) 724-2786

For Sale
Crank-up tower, 4 sections (collapsed length=12' 9"), triangular- 18" bottom to 10" top. 3' top bolt on tapered section with rotor head and thrust bearing installed + 6' of pipe above the taper. Base plate 22" x 22" with 3 studs to set tower on. Lifting winch had a motor at one time but now gone, leaving a spline shaft sticking out of the worn gear box to which a handle or motor can be grafted. Located in Poway, weight 400+/- lbs for tower alone and 150+/- lbs for the top piece, base plate and winch - $250. Gary 858-748-6076 wb6gsn@gmail.com

For Sale: HUSTLER 6BTV High Performance HF Vertical Antenna system, 80/75/40/30/20/15/10 m, complete with 250ft spool 14 ga wire and all precut radials, SS Tilt base and SS Radial plate. Used one year. Bought new at $400, will sell for $200. contact: Rich Ortloff KE6DUG 760-861-1406

For Sale: 6BTV Vertical Antenna. Crank up Tower with rotor and 3 El Yagi. Must be taken down and removed. Call Lee, (760) 726-1097

Microwave Update 2010

by Michelle W5NYV

At least a half-dozen members of the San Diego Microwave Group and the Palomar Amateur Radio Club traveled up to Cerritos, CA for this year's Microwave Update. Held at the Sheraton on 21-24 October, this remarkable amateur microwave event attracted over 150 ham radio operators.

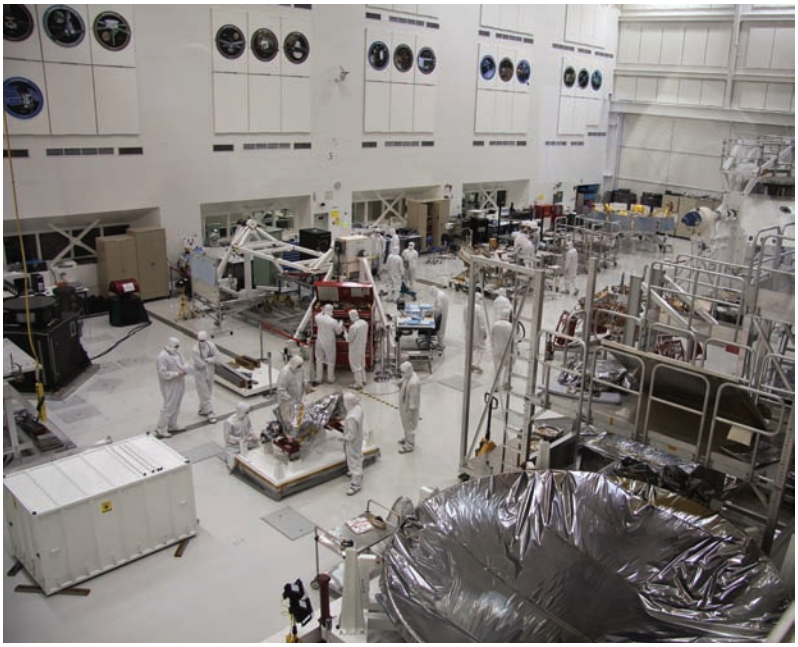
For those able to arrive in Cerritos on a chilly, overcast, and drizzly Thursday morning, there was a tour of the Jet Propulsion Laboratory. At 10:21 am, we were interrupted by an earthquake drill called the Great California Shakeout. We evacuated out into the parking lot and waited for the all clear. The 5000 employees of JPL gradually joined us as their buildings were emptied and volunteer "floor wardens" checked that everyone was present and accounted for. Coworkers greeted each other and held impromptu conferences. While walking back to the next stop on the tour, we saw several detailed smaller-scale drills with practice triage exercises. Volunteers acting as casualties were given patient assessments and then treated by drill participants. There were patients on backboards being moved to a staging area and ambulances being loaded in the alley. After a time, we resumed our trek through JPL, heading next to the labs to see the next Mars rover being assembled in a clean room.

The tour was enabled by Pete Lyman, K6PTL a member of the San Bernardino Microwave Group who happens to be a former deputy director at JPL. Through his efforts, and with the logistics support of Tony Long KC6QHP, forty conference attendees were able to tour JPL's science labs and get several highly detailed technical presentations. One of the presentations was given by someone directly involved with a major refurbishment of the azimuth races on a 70m dish belonging to the Deep Space Network. Repair of such a large structure is an art unto itself. The descriptions of the problem-solving and efforts required to make necessary adjustments and provide required maintenance to the dishes were amazing. These 70m dishes are going to be replaced with pairs of 34m dishes over the next several years. However, the 70m dishes will continue to be used for other radio astronomy after they are retired as front-line DSN infrastructure. Thursday was also the day dedicated to an area surplus tour.

Conference talks began on Friday morning and continued through Saturday afternoon. Between talks were numerous auctions of microwave-related equipment and tantalizing previews of the prizes to be awarded at the Saturday evening banquet.

The variety and quality of the talks was very high, with several extremely entertaining presentations.

Did you participate in the California Shakeout? We sure did! Along with over 5000 employees of JPL. Here we all are, assembled in the parking lot near the visitors center. The view is looking back towards the buildings. Photo by W5NYV



Assembly of the Mars Science Laboratory on the day of our JPL tour. For a live feed of the assembly floor, visit http://marsprogram.jpl.nasa.gov/msl/ photo by W5NYV.

The conference room at the Cerritos Sheraton fills with microwave enthusiasts as the first set of talks begins. Photo by W5NYV.

Walter "Mad Scientist" Clark demonstrates classical optical physics experiments at microwave frequencies. Photo by W5NYV.

Tony Long KC6QHP described his 47 GHz Transverter. His shared his experiences constructing his transverter with bare MMICs and gave results from experiments making the physical connections to the MMICs. Tony used both traditional machine tool construction as well as electronic discharge machining in the construction of his rig. An extremely attractive design, Tony's transverter sparked a lot of conversation.

Walter Clark presented a two part program that summarized efforts to repeat all the major optical physics experiments in the microwave bands. The most enthusiastic response was given to a simple apparatus that clearly demonstrated different types of polarization.

If you have ever slogged through a college physics lab, with two-slit experiments, and diffraction gratings, then this presentation was a real delight, as all those old familiar experiments were re-purposed into an amateur radio context.

Kent Britain WA5VJB gave a whirlwind tour of very early radio electronics. While most radio operators in the room were familiar with the frequently recited narrative of early radio spark gap experimentations, Kent uncovered new territory by focusing on the extremely compelling contributions of Indian scientist J.C. Bose. Bose demonstrated radio transmission in 1896 in Calcutta in front of the British Governor General. The three-mile transmission was impressive enough that he was invited to repeat his demonstration to the Royal Society in London in 1899. Bose was offered the position of Professor at Cambridge, but he declined.

It is believed that Marconi, who was present at the meeting of the Society, stole Bose's notebook. Marconi's "Coherer", introduced in 1901, was (coincidentally?) an exact copy of that of Bose. Kent also gave a presentation on the many different types of waveguides. His examples ranged from the very small, to the extremely large, from the humble and simple, to the gloriously complex. The stories behind many of his photographs were ample proof of an extremely interesting career.

A non-ham presenter appeared at this year's Microwave Update. Dr. Cam Nguyen found out about Microwave Update while on the web, realized he'd be in town visiting relatives on the same weekend as the conference, and

continued bottom left of page 12

Minutes

Palomar Amateur Radio Club Board of Directors
September 9, 2010

The meeting was called to order at 7:02 by Dennis Baca KD6TUJ at the home of KB5MU.

President Dennis Baca KD6TUJ
Treasurer Georgia Smith KI6LAV
Secretary Gary Kent W6GDK
Director #1 Paul Williamson KB5MU
Director #2 Conrad Lara KG6JEI
Membership Al Donlevy W6GNI
Scope Editor Michelle Thompson W5NYV

Treasurer's Report The treasurer's report for August presented by KI6LAV. Total assets as of 7/31/2010 are $13,431.45. Income was $579.12, Expenses were $601.36. We had receipts of $178.02 from Rick Roberts N1OW for picnic food. Motion to approve by KB5MU, second by W6GNI. Approved

Secretary's Report- Minutes of the August meeting were presented by W6GDK. Motion to approve by KB5MU, second by W5NYV. Approved

General Meeting: October meeting will be the annual auction at the Harding Community Center in Carlsbad. Meeting in November will be by K6GO- a portable antenna for 160 meters. W5NYV's presentation on modeling antennas will be in January.

Membership Report: Current membership is 291.

Repeater Site/Technical Report: There was work done on the 146.73 repeater. The 147.075 repeater power amp is now operating. Using sound engineering principles, the 6 meter box was improved by the magic of wiggling connectors, and applying some mystical blue stuff. Guy wires were tensioned to 85 pounds. Need to reinforce the seal on the roof on building 4 (maybe the blue stuff would help?). See page 7!

NEW business:

We will hold Operating Day Redux on November 14 at Double Peak Park. (There is a scheduling conflict with a picnic on that day)

Motion to adjourn at 8:15 PM by KB5MU, second by W6GDK. Approved.

Being some what taken aback by the earlier adjournment time, the board had a tour of KB5MU's lab and photo studios.

Next meeting will again be at home of Paul Williamson KB5MU on October 13 starting at 7PM. Address is 5371 Carmel Knolls Drive.

Submitted by Gary Kent W6GDK

TECHSPRAY™

Product Information

Blue Stuff™

Abrasive Cleaner/Lubricant

2422

Introduction

Unique formulation cleans, polishes, and lubricates drum and switch type tuner contacts. Formulated with mild abrasive cleaners dispersed throughout a thick lubricant. This combination works continuously, removing oxidation and improving the electrical contact for months after application.

Features / Benefits

Cleans and Lubricates Drum and Switch Contacts
Mild Abrasive Cleaner
Removes Oxidation
Lithium Grease
Mineral Oil

Chemical Components

White Mineral Oil……(8042-47-5)	<1%
1,1,1,2-Tetrafluoroethane……..(811-97-2)	15-25%
Dye	<1%
Diatomaceous Earth/Attapulgite Clay……...(8031-18-3)	<1%
Petroleum Lubricant Blend	20-30%
n-Heptane……(142-82-5)	40-60%
Fragrance	<1%

Environmental Policy

Techspray® is committed to developing products to ensure a safer and cleaner environment. We will continue to meet and sustain the regulations of all federal, state and local government agencies.

Packaging and Availability

Blue Stuff™ is available in the following sizes:

2422-10S 10 Ounce Aerosol

Resources

Techspray® products are supported by a global sales, technical and customer services resources.

For additional technical information on this product or other Techspray® products in the United States, call the technical sales department at 800-858-4043, email tsales@techspray.com or visit our web site at: www.techspray.com.

Good News, Bad News

compiled by Michelle W5NYV

This article is about the recent legislative action in Oceanside. Reports from eyewitnesses and those directly involved with the process are presented, without any editing. I feel that this original narrative, even though it is only a partial accounting, is the best way to frame the events that have occurred. If you live in Oceanside, then your participation is needed. Thank you to those that have taken the time to write about their experiences.

Fred AE6IC wrote:

"Pass the word: Wednesday, October 20, 2010, at 6:00 PM, Same place as last time. Your presence is super important.

You have all the information. You know that something is wrong. If you don't have time to read the whole agenda thing, the bottom line is this the same old arbitrary antenna height restrictions are still there. Our efforts to address the physical requirements for ham antennas have fallen on deaf minds. A 40 meter antenna is a 40 meter antenna is a 40 meter antenna … we've even provided them with a website that explains the physics in layman's terms. Yet every Radio Amateur antenna application will be encumbered by special studies and redundant justifications.

Our efforts to apply the statute in California Section 65850.3 are being ignored. They know it's there; I've seen it in their paperwork. By not acknowledging it in public they think it will go away or that we will get tired and go away. Something is wrong.

We provided them with references to the "Sense of Congress" in Public Law 100-594 and to the "Joint Resolution of Congress to Recognize the Achievements of Amateur Radio as Public Record" in Public Law 103-408. Their strategy continues to exclude Oceanside members of the Amateur Radio Service from any meaningful input into the proposed Article 39. Something is wrong.

Each of us has a duty to respond. Every ham should send another email addressed to every member of the City Council , NOW. Their email addresses are:

1. His Honor, Mayor Wood, jwood@ci.oceanside.ca.us
2. Council Member Sanchez, esanchez@ci.oceanside.ca.us
3. Council Member Feller, jfeller@ci.oceanside.ca.us
4. Council Member Kern, jkern@ci.oceanside.ca.us
5. Council Member Lowery, clowery@ci.oceanside.ca.us

Your presence at the meeting is super important. If you are physically able; BE THERE WITH YOUR ENTIRE FAMILY!

Pass the word.

Lastly, say a prayer. "Take the wings of the morning" (Psalm 139, 9 and 10)
73, Fred , AE6IC, hamkt4fk@att.net

" Do or Do-not. There is no 'Try'..." ~ Yoda"

Fred AE6IC wrote:

"If the City Council goes along with a request to create a special ham-only ordinance we need to have a proposed ordinance ready to discuss. Attached is my first draft. Please read and respond with constructive comments. I used the Costa Mesa ordinance as a starting point.
73, Fred, AE6IC"

Blue Stuff can fix anything.
Maybe even politics.
Photo submitted by KB5MU.

Dennis KD6TUJ wrote:

"Wednesday, October 20, 2010 at 4:00 PM the Oceanside City Council will be recom-

mending on the aproval of the ordinance as written. The amatuer community needs to have a presence to request this ordinance be redone.

Actual time will be 6:00 PM on item 27

Pass the word and please help.

Dennis
Palomar Amateur Radio Club"

Howard KY6LA wrote:
"The Bad News is that they passed a highly restrictive Anti-Antenna Ordinance designed for cell towers but including ham towers, which if fully implemented would cost a ham thousands of dollars to apply for a permit and for all intents and purposes make it virtually impossible to erect a ham antenna.

The Good News is that they acknowledged that the ordinance as passed really should only apply to cell towers and would be unduly burdensome to the "Unsung Heroes" Amateur Radio Operators. They agreed to have their legal people work with the ham community and report back to the council at the First Meeting in January with suggested modifications to the ordinance that would be much less burdensome to this vital public safety service.

DO NOT APPLY for a permit in Oceanside in the next 60 days… you will not get a tower approved until those changes are approved.

The Hams were well organized through the untiring efforts of Fred Atchley AE6IC and Dennis Baca KD6TUJ (President of Palomar Amateur Radio). Fred and Dennis clearly had worked on several council members as the councilors were positive about ham radio. My personal kudos to both these fine gentlemen for all their visibly hard work.

A lot of different hams spoke about separating the Amateur Radio Support Structure Regulations from the Commercial Cell Phone Regulations. Perhaps more important, a number of members of the general public, who were there primarily to oppose any cell phone towers whatsoever, spoke in favor of treating amateur radio differently than cell phones and acknowledged the vital public service of hams during emergencies.

Special Legal Counsel to the City for antenna matters, Jonathan Kramer, W6JLK suggested that changes should be made for amateur radio and looked forward to meeting with local hams to work out the differences.

Frankly, while the currently ordinance is outrageously (likely illegally) restrictive, the positive attitude towards reasonably accommodating amateur radio was a pleasant change from the hostile attitudes of Poway and the prevarications and enmity of the staff at the City of San Diego.

My only real disappointment was the utter lack of any visible support from SANDARC or our ARRL Section Manager and/or his staff.

Oceanside is the largest city in North San Diego County.
How it ultimately frames its ham antenna ordinance will likely influence all the surrounding cities.

The Jury is still out… The fight is NOT over.

I am sure that Fred could use all the help he can get!!!!!"

Fred AE6IC wrote:
"for your comments Howard. Yes there was bad news and there was (is!) good news. Note that the OCEANSIDE CITY COUNCIL MEETING REPLAY [TAPED 10/20/10] is lo-

cated on the internet:
http://www.ci.oceanside.ca.us/council_video/2010/10-20-2010_cm/10-20-2010_cm_exphtml.html. Our portion starts at 3:50 or thereabouts. Also it will be aired on KOCT (Channel 19) tomorrow, Saturday 23rd and Sunday 24th.

This is my first experience with the council "general meeting". It was a sad display of egos combined with an overdose of PR. This meant that the business at hand was pushed back in time. It was past 10 PM before we finished up which for some of us old-timers was almost life-threatening.
There were two low points for me.

The first was Jerry Hittleman's cheap shots. He thanked me for my efforts to improve the ordinance then proceeded to ostracize ham radio antennas. He displayed examples of commercial antennas camouflaged as a cactus and a palm tree; then displayed Kruger's ham antenna for comparison. There were audible guffaws from a small group which was obviously his intent.

The second low point was when city attorney John Mullen made his disingenuous comments that separating-out the Amateur Radio portion could not be accomplished without jeopardizing the urgent article 39. In spite of the fact that on September 30, 2010, I hand delivered a letter to all city council members concerning just such a change. Out of 732 lines, only 46 lines specifically regulate Amateur Radio antennas. All other references to "Amateur Radio" are just phrases inserted to exclude it. Obviously, the ad hoc committee's efforts to obliterate our requirements limited this content. So, Mullin had plenty of time to be prepared.

Offsetting these negatives were the numerous favorable compliments from the gallery, including the anti-cell-tower group! Other non-hams commented on the need to nurture the ham capability. Even Jonathan Kramer commented that a subsection for hams was doable. His comments pertained mostly to cell tower citing.

Many thanks to all the hams that stood up. You really did a fabulous job. The impact on the council members was obvious. They were not expecting such support. Sorry for the delay in reporting, but Lillian and I took the next day off to recuperate. (We drove up to the Edwards complex in Irvine to see a movie.)"

Dennis KD6TUJ wrote:
"Usual meeting timelines were kept. The 6:00 PM start time was 8:20 PM through 9:50 PM. There were two distinct sets of speakers. One for the cell phone ordinance, and one group for separating commercial from Amateur Radio (non-commercial). Comedic relief was provided by my wife calling on my cell as I was at the podium professing how people have accustomed themselves to the cell services. After I hung up, she called again. The audience was amused. After saying I would call later, The Mayor announce the she called his cell to make sure I would call her back.

Several speakers spoke for Amateur radio and stayed on point for separation from commercial services while adding good points why this separation would benefit the community. Only one speaker for the cell ordinance spoke in favor of the amateurs, as she was the daughter of a ham.

When the vote came, There was a motion to affirm the ordinance as an emergency, giving enforcement the next day. The second added a statement that "there is to be a revision for amateur radio with a review date in January to review the progress of resolution. The ordinance was affirmed with the revision provision.

After the meting a city staff member approached me to confirm there would be public meetings as soon as November to start work on the revision."

Fred AE6IC wrote:
"Take heart.

Yesterday afternoon I recorded the replay of the Oceanside Council meeting. KOCT, channel 19, will replay it one more time tonight at 5 PM. Our portion is about 3 hours and 50 minutes into the session, so you can watch (and record) it at about 8:50 PM. The schedule is at: http://www.koct.org/pages/schedules/24.htm Try to watch it if you can … you may be able to spot some nuance we can use. I did.

There, on the tape, was something I had not realized. Every single comment from the floor about ham radio was positive! The only unfavorable comments were from Hittleman (Planning) and Mullen (city attorney). Some of the comments from the anti-cell tower people and the general public were absolutely glowing. I had been so upset by Hittleman's cheap shot that I failed to realize that the people were behind us 100%! Of about 2 dozen who stood up, not one made a derogatory comment, and there were many unsolicited praises.

So far, only six people have responded to my request about their availability. The consensus is weekdays 6 PM or thereabouts.

Please send me your input.
73, Fred , AE6IC, hamkt4fk@att.net"

SWAT!

Six-meter Wildass Antenna Team

by Michelle W5NYV

At the August work party, the Palomar Amateur Radio Club kicked off an effort to redesign the 6m antenna. The existing antenna has suffered some damage and hasn't been at its best over the past few years.

Several club members decided to do something about it, and have organized a SWAT (with apologies to Preston W6ASP) with the goal of completing the modeling, design, construction, installation, and testing of a new 6m antenna. Designs for the new antenna will be unveiled at the January 2011 club meeting as part of the Antenna Modeling program presented by Michelle W5NYV.

SWAT invites any and all interested club members to participate. There are two requirements. You must come up with a fancy title. Browse the list of SWAT members for inspiration. The second thing that you need to do to participate is to model a 6m antenna suitable for use on Palomar Mountain.

There is a variety of modeling software available for free. One does not have to spend a lot of money to begin antenna modeling.

SWAT succeeds if a diverse variety of designs are submitted for consideration. If you have been mulling over antenna modeling, or casting about for a reason to play with modeling software, then this may be the perfect project.

Here we are! Join us and have some fun fixing up the 6m antenna for PARC!

SWAT Members as of November 2010

Captain Cynthia KJ6HCT
Colonel Rob KJ6RET
Empress Michelle W5NYV
Tentative Titan Mark Raptis KF6WTN
<your name and title and call here!>

Palomar Mountain has ice during the winter, so durability is a primary concern. The mast that supports the antenna is raised and lowered by hand-operated winch. It's a steel tubular telescoping crank-up mast with a tiltover base, and is about 25 feet tall.

To participate, mail a quick note with your name and SWAT title to board@palomararc.org and we'll be in touch with you to assist and collaborate. This is an opportunity for fun and learning. Any level of experience with antenna modeling is welcome.

Free Antenna Modelling Software
To get you started

Download free version of Expert MININEC Classic by following the link at http://www.emsci.com/

Free version of EZNEC (limited to 20 segments) available at http://www.eznec.com/

Have a Mac? Try the free cocoaNEC 2.0 http://homepage.mac.com/chen/w7ay/cocoaNEC/Contents/Downloads.html

Or, embrace your inner geek and run raw NEC. It's free. Read more about it at http://www.nec2.org/

Dave WA6CGR tests so fast that his hands blur. Here he is in the temporary test lab set up for attendees to use to make measurements they may not be able to make at home. A lot of microwave gear is prohibitively expensive for the microwave enthusiast to purchase. San Bernardino Microwave Society operates a lab for use by the Southern California amateur microwave community, and hosted the lab at Microwave Update 2010. Photo by W5NYV.

a quick and productive dialogue about the approach to limiting power levels between Dr. Nguyen and Kent WA5VJB.

A banquet, with numerous awards and over 1000 prizes, was held Saturday evening. Yes, that's right, there were over 1000 prizes. Everyone at the conference was almost assured of walking away with multiple prizes. All you had to do was show up at the banquet. The more persevering banqueteers stayed up to claim the last batch of prizes at 9:45pm. The final auction was for a cake made by Tisza KI6DBR expertly formed in the shape of a Yaesu 817. The grand prize, a portable spectrum analyzer (an Agilent N9430B), was won midway through the evening by a very joyful Jeff Fort KN6VR, a member of the San Bernardino Microwave Society. The guest

continued on page 14

Kent WA5VJB demonstrates a purple laser pointer on a defenseless backpack. Kent then illuminated the EXIT signs. Photo by W5NYV.

At left Pat N6RMJ, The chair of Microwave Update 2010. At right, Michelle W5NYV. Pat and Michelle partially disassemble a 3GHz rig for testing that Michelle bought from Pat at the conference. The rig passed "tech" with flying colors. Photo by KB5MU.

From left, Kerry N6IZW, Ed W6OYJ, Lee KD0IF, and Greg K6QPV. These members of the San Diego Microwave Group headed up the antenna range test. Note that Ed is writing down something very important on a cocktail napkin. Photo by W5NYV.

continued from page 5

offered to give his talk about Ultra Wideband CMOS Antenna and Transmitters. Expecting a crowd more similar to an industry group composed of people paid to be interested in this sort of work, he was astounded to find that everyone in the room passionately pursues microwave radio engineering as their hobby. His talk was well received, generated several questions from the audience, and there was

Mel WA6JBD staffed the front table of the temporary test lab at Microwave Update. Thanks to Mel and Dave for providing such extensive test capabilities. Photo by W5NYV.

Above, Microwave Update 2010 concludes with the 1000-prize-banquet. A cake, shaped and decorated to look like radio equipment, was cut for dessert. This work of art was handmade by Tisza KI6DBR, who also chaired the extremely successful and highly popular family program. Below, Pat N6RMJ and Phyllis Kolbly, wife of Dick K6HIJ (SK) cut the cake. Photos by W5NYV.

Above, Paul KB5MU now has two antennas on 10GHz. This one is an omnidirectional slotted waveguide antenna, suitable for mobile use. Photo by W5NYV.

Below left, the antenna range test team on the roof. Below right, the team down in the parking lot with the measurement gear. The device under test reported to the parking lot, and was connected to the test system. Photos by W5NYV.

continued from page 12

Michelle W5NYV attempts to operate the 10GHz slotted waveguide omnidirectional antenna at audio frequencies. More research will be required in order to achieve this band. Tony Long KC6QHP looks on in amusement. Photo by KB5MU.

speaker, Dr. Kate Hudson of JPL, talked about California earthquakes, compared and contrasted the January 2010 earthquake in Haiti to the May 2010 earthquake in Chile, and discussed the motivation for and participation in the Great California Shakeout.

Sunday morning was antenna testing, headed up by Kerry N6IZW and Lee KD0IF. The far end of the antenna test range was on top of the hotel looking down into the parking lot and was managed by Greg K6QPV and Ed W6OYJ. The other side, with the measurement equipment, was set up in the parking lot, along with the public swap meet. I was able to test my new-to-me 3GHz and 5GHz rigs, which I had purchased at Microwave Update from Pat N6RMJ. The rigs had been tested the day before in the dimly lit indoor lab that the San Bernardino Microwave Society had set up for the conference. The lab was able to test for frequency stability, conversion gain, power, and output spectra. Now, backlit by the gentle warmth of the sun on a beautiful October Sunday morning, the rigs were tested for antenna gain. The only troublesome result was the 5GHz dish gain being lower than expected. The consensus of the antenna range team was that the feed should be investigated.

Carlsbad Amateur Radio Exam Updates

by Paul KB5MU

Since the FCC turned over amateur radio exams to volunteer examiners in 1984, the Palomar Amateur Radio Club has sponsored and supported one of the local teams of volunteer examiners, which provides a scheduled exam session on the second Saturday morning of just about every month in the north county. These exams are held in the same room where the club meets, in the Carlsbad Safety Center, and are coordinated by ARRL VEC. The schedule is aligned with SANDARC-VEC sessions held in other locations in San Diego County, so that exams are scheduled on every Saturday somewhere in the county. Additional exam sessions are scheduled as needed when there's a license class or a convention in the area. How many other parts of the country have this much access to exams?

Detailed information on the Carlsbad exam session is available at

http://www.kiloxray.com/vec/

or via a link on the club's web page.

The Carlsbad VE team has made it easier than ever to register for the exam. There's now a very simple online form to fill out, and the system automatically acknowledges your registration. On the session's web page, you can see the roster for the next upcoming session. You can confirm that your registration is on the list, and you can see how many others are signed up. This is nice to know, since if fewer than three candidates pre-register, the exam session will probably be canceled. Registrations are also accepted by email or telephone, as an alternative to the web page form.

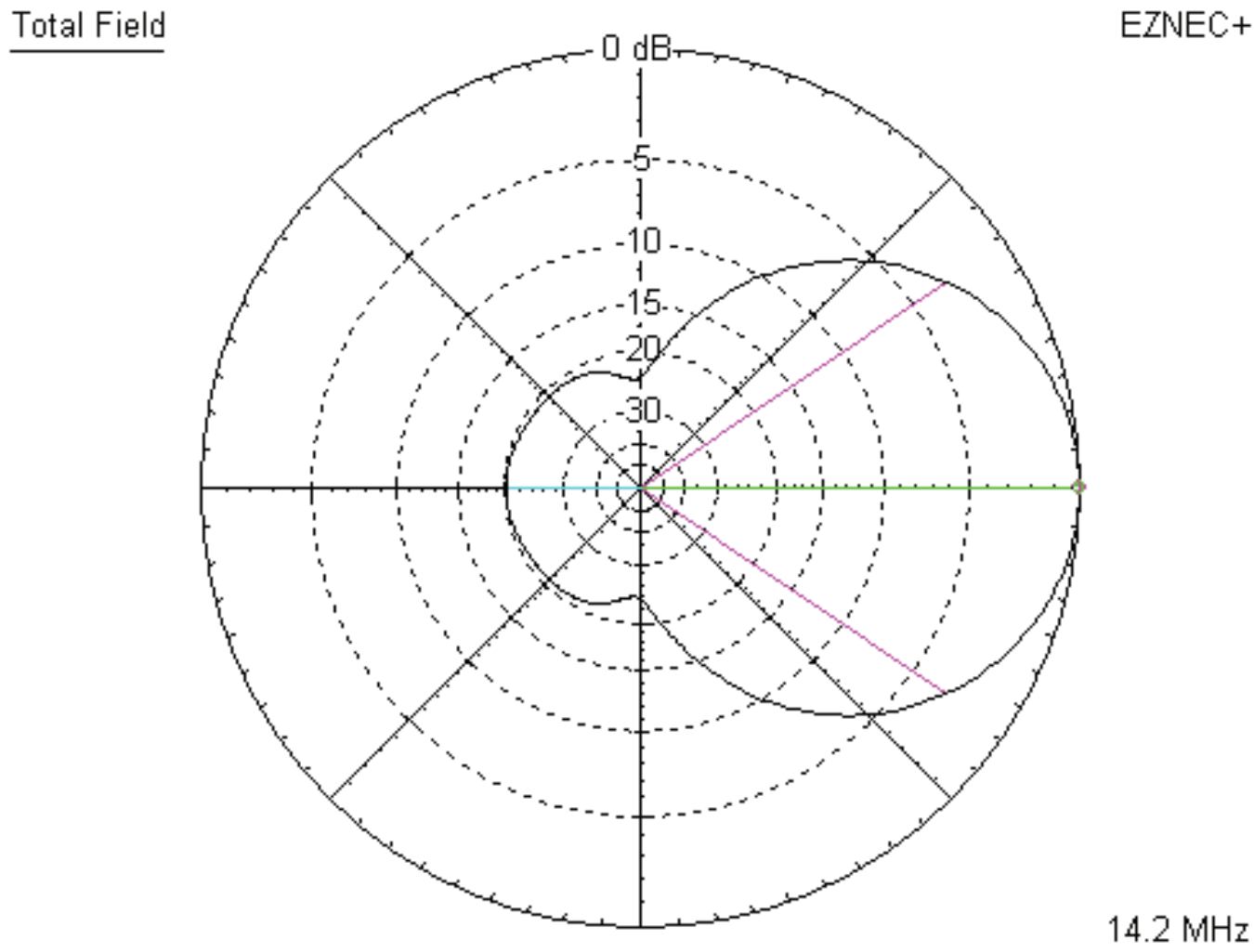
Special Notice: I've been working on revamping the collection of photographs on the club's web page. Instead of a mishmash of different presentations and links to off-site collections, all the photos are now displayed in a unified photo gallery driven by the free software package Zenphoto.

You can find the new photo gallery under "Look at Us" on the club's web page. - Paul KB5MU

http://www.PalomarARC.org.

20m Field Day Antenna Design Documents

by Mike Lebo N6IEF



Azimuth Plot	
Elevation Angle	19.0 deg.
Outer Ring	12.46 dBi

Cursor Az	0.0 deg.
Gain	12.46 dBi
	0.0 dBmax

Slice Max Gain	12.46 dBi @ Az Angle = 0.0 deg.
Front/Back	20.28 dB
Beamwidth	67.8 deg.; -3dB @ 326.1, 33.9 deg.
Sidelobe Gain	-7.82 dBi @ Az Angle = 180.0 deg.
Front/Sidelobe	20.28 dB

To be continued! More design documents from this 20m Field Day antenna project will run in the upcoming Scopes.

At right is the antenna modeled in above.

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Editor: Michelle Thompson W5NYV
Submissions: scope@palomararc.org
Questions? Ideas? Comments? W6NWG@amsat.org

Featured Program:

At 7:30pm, Palomar Amateur Radio Club will host a program at the monthly membership meeting on 3 November 2010. The presentation will be on 160m Antennas by Gayle Olson K6GO. Arrive at 7:00pm to socialize. We look forward to seeing you at the Carlsbad Safety Center, 2560 Orion Way, Carlsbad, CA.

SCOPE

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

November was a busy month for the Palomar Amateur Radio Club. A well-attended membership meeting was followed by a highly successful operating day. The membership meeting featured a program on 160m antenna construction presented by Gayle Olsen K6GO. Many members were spotted at the quarterly swap meet at Ham Radio Outlet.

December will start out right with a Holiday Social at our membership meeting on the 1st. Bring a dish to share! Food, fun, and games will happen at the Carlsbad Safety Center, and we look forward to seeing you there.

Last year, we shut the place down with Scrabble and answered all questions with a Magic 8 Ball. We're pleased to report that all predictions from the Magic 8 Ball came true. Bring your Yes or No question to the social and get some answers.

The club is preparing to help support ARRL Kids Day at Double Peak Park on 2 January. Please contact Dennis KD6TUJ@amsat.org about the event.

Now, why is there a toilet on the cover of this month's Scope? Well, correctly name this publicly accessible ham-radio related site and be the first winner of our Mystery Photo Contest! First person to contact W5NYV in person or on the air with the correct answer wins the contest.

Email doesn't count this time around!

Save the Date

Club Meeting
1 December 2010

Holiday Social! Bring a dish to share for the party.

Board Meeting
8 December 2010

Palomar Amateur Radio Club board meeting at 7:00pm at K2RP QTH

Club Event
2 January 2010

Kids Day at Double Peak Park. Please help volunteer and participate in this enjoyable event.

Club Membership for December Edition

New Members Joining PARC: AF6UA,and KI6FER

And three reinstatements.

A number of members have elected to receive the SCOPE on the WEB. This saves the club the cost of printing and mailing, which is good. The 'not so good' is that they do not get the monthly reminder that their membership is up for renewal - which is printed on the mailing label for those that receive the SCOPE by mail. As a service, we are printing the call's of the web SCOPE members that have let their membership expire, hopefully by oversight. The following memberships have expired in the last couple of months: WZ6RAM, ZZ9RJ, KG6YFS, N6MJS, W6YXK, N6BMR, W7ECC, AF6SH, AND KJ6CKB. PLEASE RENEW!!

Al
W6GNI

Upcoming General Meeting Topics
December - Social
January - Michelle W5NYV "Antenna Modeling"

October Fold & Staple Crew
W6GNI Al & Kathy
WA5ACE Sonny
KI6LLC Roni

Bike to Bay Tour

Public Service Success

The Palomar Amateur Radio Club provided invaluable assistance to the National Multiple Sclerosis Society's Pacific South Coast Chapter at the recent 28th annual Bike MS Bay to Bay Tour, a cycling fund-raiser million for research and programs and services for people with MS, a chronic, unpredictable and disabling disease of the central nervous system with no known cause, cure or prevention.

Mobile communications at the Bike to Bay Tour.

Photos submitted by Jessica Read.

Members of the Club assisted with monitoring more than 2,400 cyclists who participated in rides of 30, 100 and 150 miles over two days, Oct. 16 and 17. Club members used the radio repeater located on Palomar Mountain during the Saturday portion of the event. The fund-raiser was open to all levels of cyclists ranging from beginner to expert. More than $2 million was raised, and online donations can be made at

http://www.biketofinishms.com/

The MS Tour has been voted the year's best cycling event for the past four years by the readers of Competitor Magazine. Information on next year's ride can be found at the website.

Advertisements are free for members

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

For Sale

This is a Hewlett-Packard 3577A with the 35677A S-Parameter test set and all interconnect cables.

With an open – short – load you can calibrate out transmission lines and take antenna measurements up on the tower.

I am looking for $3000 or best offer.

Mike-lebo@gmail.com

For Sale

Item	Price
YAESU FT-1000	$2,500.00
Kenwood TS-950 S	2,500.00
FT-2500 M	350.00
Kenwood SWR/PWR Meter, Model SW-2000	50.00
TR-7330 2 M	150.00
Astro PS7 A	25.00
Cubic Astro -150 A-10-80M Transceiver	250.00
Ten-Tec Centurion amp 1kw	1,500.00
Ten-Tec Titan amp 1kw	2,500.00
FLUKE Meter Model 77	65.00
SHURE Microphone Push to talk Model 444	30.00
3-500 tubes	100.00 ea.

Contact: R. F. Krist, W6KTE, (760) 724-2786

For Sale
Crank-up tower, 4 sections (collapsed length=12' 9"), triangular- 18" bottom to 10" top. 3' top bolt on tapered section with rotor head and thrust bearing installed + 6' of pipe above the taper. Base plate 22" x 22" with 3 studs to set tower on. Lifting winch had a motor at one time but now gone, leaving a spline shaft sticking out of the worn gear box to which a handle or motor can be grafted. Located in Poway, weight 400+/- lbs for tower alone and 150+/- lbs for the top piece, base plate and winch - $250. Gary 858-748-6076 wb6gsn@gmail.com

For Sale: HUSTLER 6BTV High Performance HF Vertical Antenna system, 80/75/40/30/20/15/10 m, complete with 250ft spool 14 ga wire and all precut radials, SS Tilt base and SS Radial plate. Used one year. Bought new at $400, will sell for $200. Contact: Rich Ortloff KE6DUG 760-861-1406

For Sale: 6BTV Vertical Antenna. Crank up Tower with rotor and 3 El Yagi. Must be taken down and removed. Call Lee, (760) 726-1097

Gayle Olsen K6GO presented our November program. She spoke about her 160m antenna, a continuously-loaded helically-wound short ground-plane vertical with a small capacity hat. The design was inspired from a QST article, and the construction was accomplished with a can-do spirit and continual small adaptations along the way.

Above, Bob K9RHV expands upon Gayle's remarks about the 160m antenna construction and installation. The monthly membership meeting usually has a program presented by a club member or guest speaker, a goodie table where for a small donation to the club various items can be offered or obtained, and an exciting raffle. Coffee and cookies can be had at the back table. Photos by KB5MU.

Above, Fred AE6IC brings the club up to speed about what's been happening in Oceanside with a new antenna regulation. The regulation, which lumps amateur radio in with commercial tower interests, was passed. However, an amendment is in the works. Fred has been leading the effort to educate and influence the law in Oceanside, so that ham radio operators will not be completely prevented from having an antenna support structure (i.e. tower) in Oceanside. Thank you Fred, for all your hard work. Photo by W5NYV.

Above, our membership chair Al Donlevy greets members from across the room. He handles many membership tasks as well as the coordination of the monthly fold and staple party. Please drop by the membership table and volunteer to help out with fold and staple. Also, check out all the wonderful club-related items for sale. Thank you Al, for helping out the club so much! Photo by W5NYV.

At right and below: Wild Bill got to go to Qatar, and all I got were these lousy photos. He told quite the tale at the November membership meeting, and showed the medal that he and the operating team were awarded. Yes, that is a medal. It makes a printed paper certificate pale in comparison!

If you see Wild Bill, please tell him to write an article for the Scope about his adventure in Qatar. Photos by W5NYV.

Below, Dennis of the South N6KI shows off an item from the goodie table. While he doesn't currently owe the Scope an article, I'm sure that's only due to an oversight on the part of the editor. So, if you see him or hear him on the repeater, please tell him to write an article for the Scope.

WANTED: STORIES FOR THE SCOPE

October Minutes

Palomar Amateur Radio Club Board of Directors

The meeting was called to order at 7:12 by Dennis Baca KD6TUJ at the home of KB5MU.

President Dennis Baca KD6TUJ
Vice President Ron Pollack K2RP
Treasurer Georgia Smith KI6LAV
Secretary Gary Kent W6GDK
Director #1 Paul Williamson KB5MU
Membership Al Donlevy W6GNI
Scope Editor Michelle Thompson W5NYV was late.

Treasurer's Report The treasurer's report for September presented by KI6LAV. Total assets as of 9/31/2010 are $13,723.35. Income was $751.08, Expenses were $465.76. Motion to approve by KB5MU, second by K2RP. Approved

Secretary's Report- Minutes of the September meeting were presented by W6GDK. Motion to approve by KI6LAV, second by W6GNI. Approved

General Meeting: November meeting will be by K6GO- a portable antenna for 160 meters. December is the election of officers and annual social.

Membership Report: Current membership is 279.

Repeater Site/Technical Report: No activity this month

NEW business:

We will hold Operating Day Redux on November 14 at Double Peak Park. Hours are 9 to 5

There are several requests for repeater use on October 16th. MARA, the MS140 Bike Ride, and Jamboree on the Air have requested repeater use. MARA will be on 147.075, MS140 on 147.130 and JOTA on 146.73.

SANDARC will have a meeting on October 19th to discuss the VE situation in Carlsbad. PARC will administer exams under the ARRL VEC in the absence of a SANDARC exam o n the second Saturday of the month. This exam session is no longer shown on the SANDARC website.

SCRRBA is having a meeting on October 16th.

N6KI has offered to rebuild the 20 meter beams. Motion by K2RP to allocate up to $100.00 for materials to reconstruct the beams. Second by KB5MU. Approved.

Motion to adjourn at 8:27 PM by K2RP, second by W6GDK. Approved.

Next meeting will again be at home of Ron Pollack K2RP on November 10 starting at 7PM. Address is
659 Shanas Ln
Encinitas, CA 92024

Submitted by Gary Kent W6GDK

EchoLink Rediscovered

By Bernie Lafreniere, N6FN

Monitoring some Las Vegas repeaters while on the way to Utah last year, Cheryl and I happened onto a very interesting QSO between several hams. Proceeding round-table wise in the usual fashion we found the conversation interesting and fun to listen to. All the stations were coming in Q5 copy and initially we assumed them to be local stations.

Eventually, though, it became apparent that one of the hams was in Ireland, another somewhere in the US and the third in Australia. We were amazed at the clarity of the conversation. After awhile, one of the hams asked a question which the station in Ireland could not directly answer, but he knew someone that could and placed a phone call to bring him on-line. A little later the fourth person came on, explaining that he had no repeater access and was talking to the group via his computer.

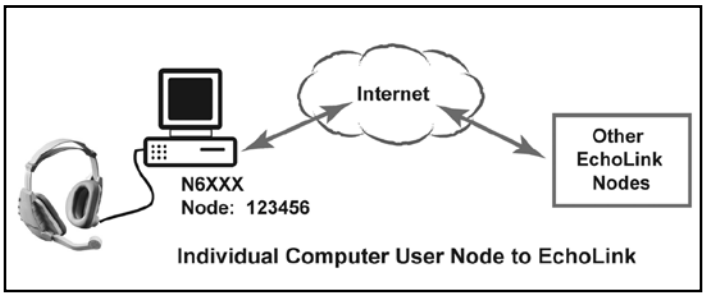
Knowing that VHF communications is generally limited to within range of a repeater, Cheryl was perplexed as to how this conversation was taking place, especially the guy using the computer. I knew that it had to be either IRLP or EchoLink, but didn't know much about either mode of communication except that they used the VoIP, (Voice Over Internet Protocol), method of communication.

Being sufficiently impressed by the QSO and the long-range capabilities of this mode of communication, I resolved to learn more about it. Some months later I finally got around to it, and what I learned was fascinating. I was impressed by the number of users all over the world and the extensive capabilities that had been built into the system.

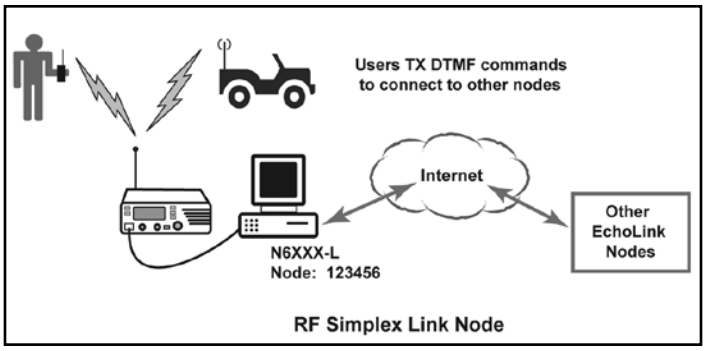
While the system was initially designed ten or more years ago, the popularity for this method of long-distance communication remains undiminished. The EchoLink network of simplex links, repeaters, conference servers and individual computer users has continued to grow. Today there are hundreds-of-thousands of registered users in more than 162 different countries. At any given time there may be several thousand repeaters and users on line.

The EchoLink system is interesting in that users can link to remote nodes either by using EchoLink software on their computer or by keying DTMF commands directly from their transceiver. Using DTMF commands from a transceiver requires communication with either an EchoLink equipped repeater or a Simplex Link.

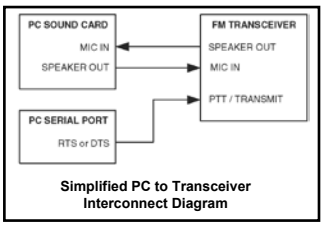
By making use of a PC that is connected to the Internet, the EchoLink software converts the audio input to a sound card into a stream of digital numbers, which when sent over the Internet can be received by a similarly equipped computer and converted back into a good approximation of the original audio. Using VoIP this sound information can be transmitted to similar equipped PC's anywhere in the world. This PC-to-Internet capability forms the basis for all EchoLink communication, be it from a computer or from HT or mobile transceivers without Internet connections.



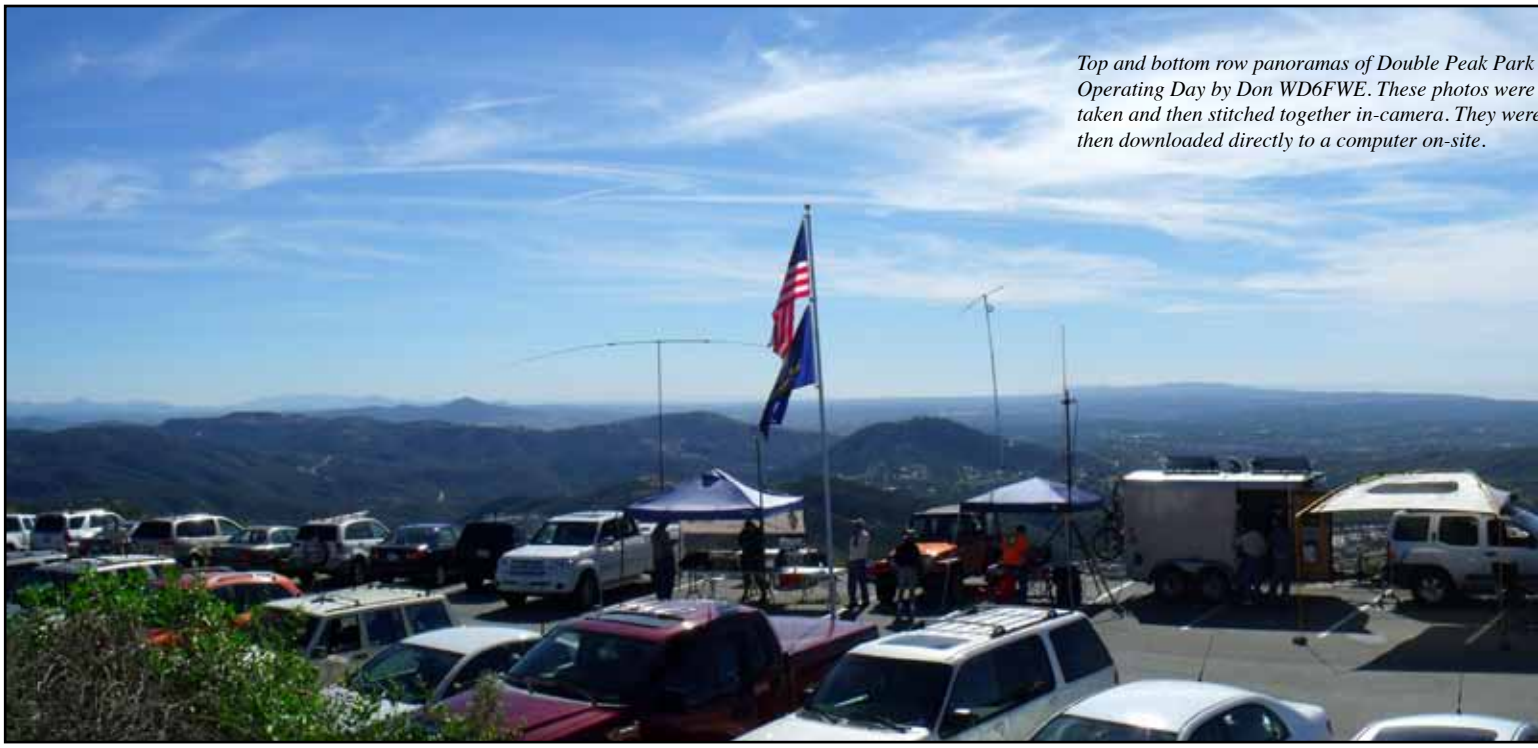
When using a HT or mobile rig, a transceiver "listening" to the frequency you are transmitting on intercepts your RF transmission and routes it over the Internet, thus freeing mobile stations from the necessity of having a direct Internet connection.



In concept the required transceiver-to-PC interface is quite simple. Since the computer's sound card provides the audio signal that modulates the transceiver, it follows that the sound card's Speaker Out jack is connected to the MIC input of the transceiver. Likewise the transceiver's Speaker Output is connected to the sound card's Microphone Input so that received signals can be transported over the Internet.



Next month we will explore different types of EchoLink nodes and how they are accessed for making various types of QSOs. For those who can't wait to learn more, visit http://www.echolink.org



Top and bottom row panoramas of Double Peak Park Operating Day by Don WD6FWE. These photos were taken and then stitched together in-camera. They were then downloaded directly to a computer on-site.

Center row of photos by Paul KB5MU. From left, antenna mast on tripod, secured with large rocks. Double Peak is windy! Flags fly proudly over the participants, who take in the sights and sounds of Operating Day. At right, multiple antennas, and a warning for wheels.

San Diego Boy Scout Jamboree-on-the-Air

Volunteers from Palomar Amateur Radio Club volunteered to help with this scouting event, which was active on APRS. Photos submitted by Timothy KJ6BWX.

Don WD6FWE stands next to an old boy scout uniform.

Rob KJ6RET demonstrates his solar power station.

by Timothy Higgins KJ6BWX Life Scout

San Diego, CA, October 16, 2010. Radio safety, schematic reading, and understanding the radio spectrum are just a few things that scouts learned at the San Diego Jamboree-on-the-Air (JOTA) and Radio Merit Badge day. Over forty scouts earned their radio merit badges and over one hundred scouts participated during this 8 hour event. The event gave Boy Scouts, Cub Scouts and even a few Girl Scouts a chance to experience the hobby of amateur radio.

This was the first year in a long time that San Diego Boy Scouts have had a radio event of this size. For many years, a small number of scouts visited the radio shack at the Boy Scouts camp in Balboa Park (WB6BSA) for the annual event. This year, over a hundred scouts visited the shack and surrounding area and each person had an opportunity to talk on one of several amateur radio stations setup by local amateur radio volunteers. There were three HF stations, four VHF stations, an echolink repeater, and an APRS (Automatic Packet Reporting System) station. Scouts had conversation with hams through out the country. One of the stations was the national Boy Scouts club station in Texas (K2BSA).

The Jamboree-on-the-Air is a world wide event on the third weekend in October where scouts have the opportunity to have conversations with amateurs and other scouts around the world. In years past, they have made contact with DX like Australia and Sweden, but this year, they talked mostly to stations thorough out the United States. They were fortunate enough to have a solar powered trailer and an antenna trailer loaned to them for use during this JOTA event. Representatives from the ARRL and the Palomar Amateur Radio Club (PARC) were there to help promote the hobby of ham radio.

This year's event was made more interesting with the help of all of the major radio companies and local distributors. Gift bags were available for each of the one hundred or more scouts who attended this event. The bag included world maps, radio band plans, fliers, and even a comic book. Door prizes were drawn for an FM radio, flashlights, hats, and other promotional items.

I would like to thank all of the companies that helped to support this event. I would also like to thank all of the volunteers who came out and gave their time to help support the education of these fine scouts.

The Desert Radio Amateur Transmitting Society of Palm Springs Invites YOU!

The Desert RATS & PS DX Club are inviting you and your groups members to attend "Palm Springs Hamfest 2011" on January 29.

We would like your help in making this years event surpass the 600 attendee mark to beat last years event!

Could you please forward the attached information sheet by e-mail to all your members… perhaps mention it on your NET… publish it in your Newsletter…list it on your Events Calendar…link our site on yours and mention it at your next couple of meetings! Helping us get the word out would really be great! The mild desert weather is perfect at that time of year. Make it a club outing! On air NETS are already a -buzz tell your pals.

Our Swap Meet was a big draw last year as well, with over 40 vendors selling their wares. There is room for more so bring your stuff (no fee charged to sellers means better prices for you!) We have a consignment table with experienced Hams selling for you if you want us to sell your gear for a small fee. We almost sold out last year.

Lest I forget, we have a gourmet food service at a bargain price. Raffles every hour. Our event as all about great deals in these tough times.

This year we'll have ICOM, Yaesu, HRO , DX Store, Byonics, RF Stuff, AMSAT, ARRL, Alpine Antennas and more. The list is getting longer!

Check our website for up to date announcements at http://desertrats.am

We will also be participating in Winter Field Day and having a Special Events Station that day.

Come join us for a fun Day with some great buying opportunities! It is worth the drive! Meet Gordon West, Clint Bradford " the Satellite Guy", Leo Meyers and all the ARRL guys from our Division.

I look forward to seeing you at our 2nd annual ARRL Sanctioned Palm Springs Hamfest January 29, 2011

73 ....Peter VE7REZ /w6
760-318-0186
Twitter name : hamradio

SWAT!

Six-meter Wildass Antenna Team

SWAT Members as of November 2010

Captain Cynthia KJ6HCT
Colonel Rob KJ6RET
Empress Michelle W5NYV
Tentative Titan Mark Raptis KF6WTN
<your name and title and call here!>

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Or, embrace your inner geek and run raw NEC. It's free. Read more about it at http://www.nec2.org/

Operating Day Success

Double Peak Park November 14 2010

by Dennis KD6TUJ

A beautiful day dawned for Operating Day in San Marcos at Double Peak Park.

Tom KG6RCW showed on time with Dennis KD6TUJ following shortly after. Like in April, we used the West end of the parking lot. We set up the canopies, then the antenna trailer. By the time we were set up with Tom's HF radio, David KC6YSO had his suitcase radio on 2m with a mag mount. Dennis KD6TUJ brought his J-pole, but there was a setback. The vertical off the upper nut had come loose. This had probably happened the last time Dennis had the antenna out for demonstration. The temporary fix consisted of stuffing the wire in beneath the nut to provide a much more robust friction fit. After repairing Dennis's emergency J-pole antenna it was switched over for demo purposes.

N6PIG equestrian mobile at PARC Operating Day. Photo by KD6TUJ.

Gee, where did the others come from? Bob KJ6RET brought his SLEEP trailer and provided solar power to all the stations. We worked of the portable power unit supplied by 2 panels creating 160 watts (2 amps) with 300 amp hours of storage into a 1000 watt inverter. Allen AK6AK brought out a D-Star setup for internet connection using an ICOM ID-1 to a Netgear wireless router to his laptop. He was using 1.2 GHz 16dB directional to achieve the connection with a ICOM ID-1. Doug KJ6ACO had a set up which included an ICOM ID-800H VHF/UHF, an ICOM ID-1 head above the body, and an ICOM 2200H 2m, all on D-star. His laptop was logging as the calls came through. It can also control and program at the same time. Bill oink oink N6PIG came by on his horse Scout (W1NEE?) and left a reminder to stay cautious. Ron K2RP brought out a Swan 140 from 1961 to work 40 meters on an inverted vee. Having a Swan on solar power was a special attraction. Kurt K6MD made a contact on 2m simplex 146.520 down to 5 watts and came through with good audio. Power up to 20 watts increased the RF signal, but the audio stayed the same.

Doug's setup at PARC Operating Day. Photo by KD6TUJ.

Contacts included Gary to KH6QR to Hawaii, Tom to WA2ROA in New York, Doug to the Netherlands and Italy on D-star 1.2 GHz. Allen contacted KB6NUL on 15 meters with 20 over 9.??? San Marcos to San Marcos. As a result, he came to the site to check out the event. Ed Boss got his first third party contact through Bob to Tim KJ6BWX. Now to finished getting his license.

Thirty one hams signed in for acknowledgement and any more stopped by. We had a chance to talk to many non-hams who showed an interest at least in what we are doing.

Bob KJ6RET reports that the HF station used 450 watt hours for the 6 ½ hour duration of operations. Tom's KG6RCW TS 2000 consumed .6 amp on standby, and 10 amps during steady use with 16 amp peaks. Ron's K2RP Swan 140 consumed 13 amp standby, and pulled 30 amps in transmit. The storage batteries appeared to not be used to any extent, ending at or near 100%. The starting voltage was no load 14.1v, with a charge rate of 13.5v, and a final rest rate of 12.5v after 20 min. This was due to Bob orientating the panels to the sun as needed.

Dennis

David KC6YSO checks a newly-constructed J-Pole antenna at PARC Operating Day. Operating Day is an opportunity to do more than just operate! Bring your project and test equipment to share with and support others. Bring a picnic lunch and enjoy the park. Photo by KD6TUJ.

Cynthia KJ6HCT operates the HF station at PARC Operating Day. With a commanding view of almost the entire county, and visibility clear enough to see five islands in the Pacific, participants and guests enjoyed a spectacular day at Double Peak Park. Photo by KD6TUJ.

Rob KJ6RET demonstrates his solar energy station. This station provided power to much Operating Day equipment, including the Swan at right. Photo by W5NYV.

Ron K2RP operates the solar-powered Swan. Photo by W5NYV.

Stations at November Operating Day. Photos by KB5MU.

YL DXpedition

At the August 2010 PARC meeting, Gayle K6GO announced a YL DXpedition to Curacao, planned for March 17-21, 2011. Satellite operations are being investigated. Phone is planned to be the primary mode. The DXpedition will include Gayle Olson K6GO, Rusty Kalkofen AF6WF, Michelle Thompson W5NYV, Ellen Utchig N6UWW, Georgia Smith KI6LAV, Cathy Gardenias K6VC, and Marilyn Bolnick KJ6YL. These seven participants will be operating the Caribbean Contest Consortium (CCC) station PJ2T on as many bands as possible. This permanent station is operated by and for the members of CCC. Members have priority in reserving the station, and have amassed a very impressive record in the 10 years the station has been active in its current form. While none of the YL DXpedition members belong to the CCC, they are hoping to use this experience as a springboard to further YL DXpeditions.

The history of PJ2T has roots in a 1994 VP5VW CQWW CW Multi-Multi expedition organized by Don Karvonen, K8MFO. The operating locations at the station are located in the expansive living room of the station house.

YL DXpedition website
http://www.yldxpeditions.com/

Caribbean Contest Club
http://asgard.kent.edu/ccc/

Below, a collection of photographs from the YLDXpeditions team during the operation of the 2010 California QSO Party. In the bottom photo, from left, are Rusty AF6WF, Michelle W5NYV, Georgia KI6LAV, and our host and organizer, Gayle K6GO.

The team had an absolutely marvelous home-cooked dinner during operations, and enjoyed using Gayle's station for the contest. As you can see, Georgia is quite expressive. Photos by W5NYV.

Palomar Amateur Radio Club Photo Gallery Update

by Paul KB5MU

I've been working on revamping the collection of photographs on the club's web page. Instead of a mishmash of different presentations and links to off-site collections, all the photos are now displayed in a unified photo gallery driven by the free software package Zenphoto.

You can find the new photo gallery under "Look at Us" on the club's web page.

http://www.PalomarARC.org

ou can participate in the new photo gallery, and I hope you will. As always, everybody who takes photos at club events (or other activities involving club members) is encouraged to submit photos to the gallery. I can set you up with an account authorized to post pictures directly to the gallery. If you don't want to deal with learning how to do that (it's easy, though!) you can still send me photos by email, or post them elsewhere and send me a link, or even hand me a CD at a club meeting.

Old photos are welcome, too. It'd be fun to fill in some of the club's history in the photo gallery. I can help you get your photos or slides scanned in so we can post them for everybody to enjoy.

Everybody can also participate by posting comments to the photos in the gallery. Every individual photo page has a comment form at the bottom. If you can help to identify people in a photo, or provide some context for understanding what's happening in the photo, or ask a question about a photo, please feel free to add a comment.

If you use an RSS reader to keep up with blogs and such on the internet, the photo gallery software has features for you. You can subscribe to the entire gallery and see each new photo that's posted, or you can subscribe to individual albums within the gallery. You can also subscribe to comments on a particular photo, which would be handy if you have a question about the photo.

Many other features can be added to the gallery software. If you have a particular request, please let me know. Comments and questions are invited, to webmaster@palomararc.org.

Carlsbad Amateur Radio Exams

Detailed information on the Carlsbad exam session is available at

http://www.kiloxray.com/vec/

or via a link on the club's web page.

by Paul KB5MU

Since the FCC turned over amateur radio exams to volunteer examiners in 1984, the Palomar Amateur Radio Club has sponsored and supported one of the local teams of volunteer examiners, which provides a scheduled exam session on the second Saturday morning of just about every month in the north county. These exams are held in the same room where the club meets, in the Carlsbad Safety Center, and are coordinated by ARRL VEC. The schedule is aligned with SANDARC-VEC sessions held in other locations in San Diego County, so that exams are scheduled on every Saturday somewhere in the county. Additional exam sessions are scheduled as needed when there's a license class or a convention in the area. How many other parts of the country have this much access to exams?

The Carlsbad VE team has made it easier than ever to register for the exam. There's now a very simple online form to fill out, and the system automatically acknowledges your registration. On the session's web page, you can see the roster for the next upcoming session. You can confirm that your registration is on the list, and you can see how many others are signed up. This is nice to know, since if fewer than three candidates pre-register, the exam session will probably be canceled. Registrations are also accepted by email or telephone, as an alternative to the web page form.

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Editor: Michelle Thompson W5NYV
Submissions: scope@palomararc.org
Questions? Ideas? Comments? W6NWG@amsat.org

Featured Program:

At 7:30pm, Palomar Amateur Radio Club will have our annual Holiday Social at the monthly membership meeting on 1 December 2010. Bring a dish to share. Arrive at 7:00pm to socialize. We look forward to seeing you at the Carlsbad Safety Center, 2560 Orion Way, Carlsbad, CA.