

SEPTEMBER 2015



Hi to all our Club members. I am pleased to announce that PARC has been designated a federally tax exempt non-profit entity. We are working on the details by which donations to the Club may be counted as tax deductions for the donor. Watch the newsletter for information.

You will find important information about SCOPE elsewhere in this issue. In brief, the Board of Directors is working to identify a way to continue distributing Scope. We no longer have a printer. Research as shown that to continue printing Scope in color will likely cost \$700.00 a month. An alternative is printing the Scope in black and white.

Consequently we are investigating member's acceptability of going to an electronic distribution only. The two very informal, anonymous, random surveys taken at the January and August General Club meeting show that 95% of the respondents accept the idea that Scope move to electronic distribution. This has several advantages. Much more timely arrival of the newsletter, full color, interactive displays online, and significant financial savings.

Scope may be issued monthly, and distributed electronically only. If you have strong opinions about this, please tell us!

Charlie NN3V

# Save the Date

## Club Meeting

**2 September 2015**

Kevin KK6FRK Ham Radio and Scouting. Scouts are doing radio and electronics! Come listen!

## Board Meeting

**9 September 2015**

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

## Club Events

**October 2015**

3-4 SD Maker Faire  
15-18 JOTA+Microwave Update!  
24-25 SSB CQWW

## Advertisements are free for members

Have items that need to find a new home? Advertise here! Send your ads to [scope@palomararc.org](mailto:scope@palomararc.org)

### Work Party on Palomar Mountain

13 September 2015

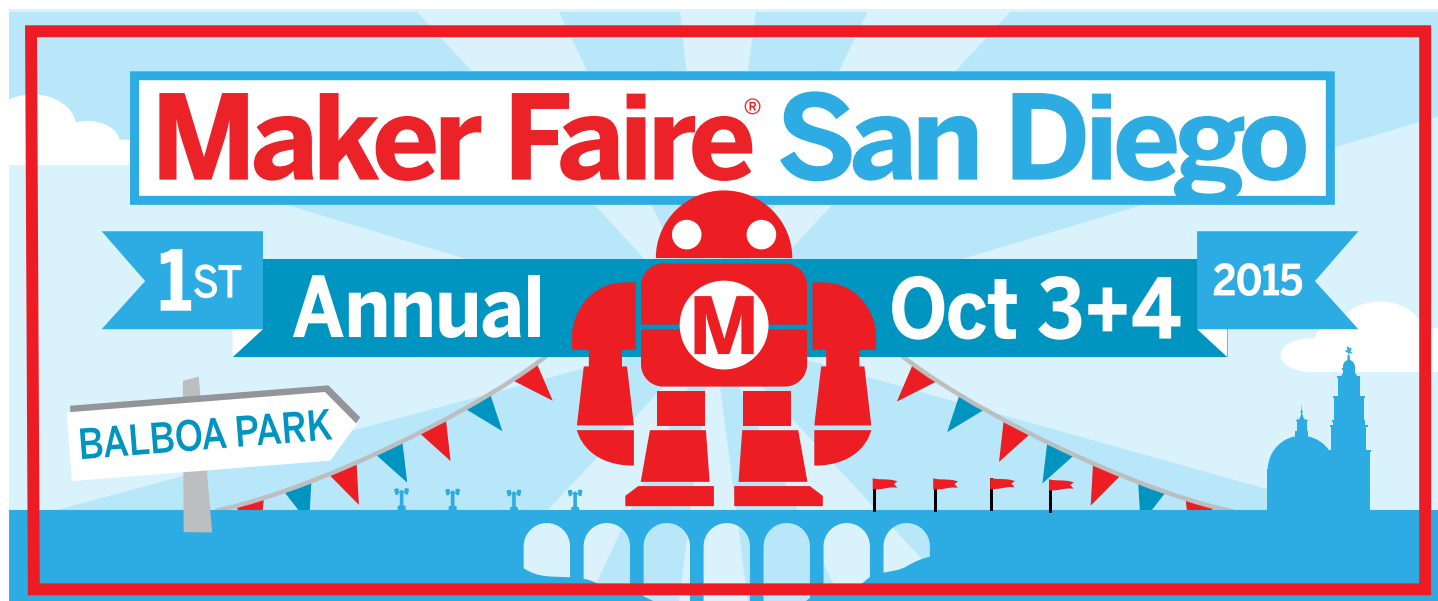
This will be part two of the freezer building repainting.

We could use at least 4 helpers for this project. Contact Dennis KD6TUJ to volunteer for part 2 of the work party. See page 8 for photos and report on part 1!

### Maker Faire San Diego

Amateur Radio will be a big part of the San Diego Maker Faire. This will be an amazing event full of all sorts of DIY techie goodness! It's the world's biggest show and tell.

If you are interested in volunteering for the Maker Faire through PARC, or volunteering directly, then contact: Michelle at [w5nyv@yahoo.com](mailto:w5nyv@yahoo.com)



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[microwaveupdate.org](http://microwaveupdate.org)



### Club Members ONLY!

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

Contact John WB6IQS [WB6IQS@att.net](mailto:WB6IQS@att.net)

**HAM  
RADIO  
OUTLET**

H  
R  
O

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# From Our Social Side



**Michelle Thompson**

June 16 at 7:33am · San Diego, CA

Looking for comments, narratives, and articles about the VHF contest this past weekend. The guys in the San Diego Microwave Group had mixed success - how did our Palomar crew do?

Like · Comment · Share

Lee Tydlaska likes this.

Seen by 28



**Paul E. Dorey** I wasn't part of any 'crew' but score fell short of last year. Sunday afternoon seemed to be the most productive but easterly reach on 6m was limited to Texas north to MN.

June 16 at 8:02am · Unlike · 1



**Paul E. Dorey** Operating Time (hrs): 8:44

Summary:  
Band QSOs Mults

6: 117 39  
2: 6 5  
222: 0 0  
432: 1 1  
903:  
1.2:  
2.3:  
3.4:  
5.7:  
10G:  
24G:

Total: 124 45 Total Score = 5,625

Club: Southern California Contest Club

Comments:

My FT-5000 is in the 'hospital' getting a facelift and tuneup so I had to use the 857. It worked ok but the frontend caved like an 1849 mineshaft with weak bracing.

Sunday afternoon in the later part of the day was about the best here with a better 6m opening to the middle part of the TX-MN areas. My goal was to look for my rover friends and try to get as close to last year's effort. But I was 11 mults and 27 Qs short of the mark. That made the score almost 3K short of last year.

Second Goal was to pick up a state or two of the 19 I needed confirmed on 6m and hopefully a grid or two - all being in the LoTW so keeping the fingers crossed.

WN6K, Paul

FT-857D @70w  
SteppIR -DB18 @55ft. (40-6m)  
Ringo Ranger 2m Vertical (2-70cm)

June 16 at 8:20pm · Edited · Unlike · 1



**Ellen Utschig** Maybe K6ZH could write something up about his DXpedition to activate DM02 (pretty rare) As always, Murphy raised his ugly head but, through all the adversities (praise God & thanks to the pilot stations & Vessel Assist), the team made it home safely. I got 'em...did YOU???

June 16 at 9:10pm · Like



Write a comment...



The Ham Radio Lunch Bunch meets Fridays for lunch and socializing at any one of a number of restaurants on a rotating schedule. The Lunch Bunch signup is <http://w0ni.com>

Reminders are sent out on Wednesdays. All are welcome for food and fun!

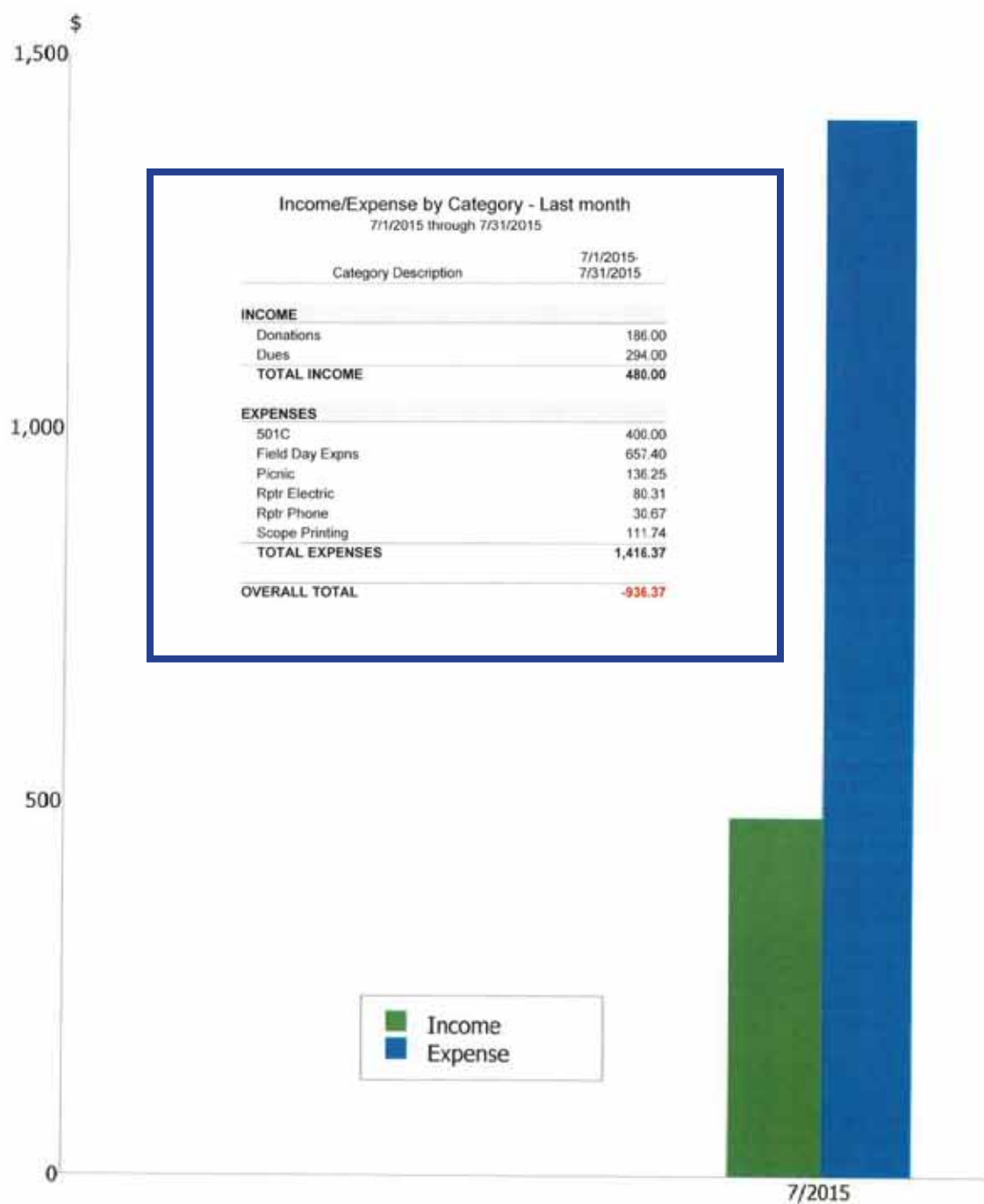
Some of the restaurants on the schedule are Fuddruckers, UTC Food Court, Spices Thai, Savory Buffet, Denny's, Callahan's Pub and Grill, and Phil's BBQ.



# Club Financial Update

## Income/Expense by Category

7/1/2015 through 7/31/2015



# July Membership Meeting Photos





# TASMA Presentation to PARC



*Photos by Paul KB5MU.*





We had a good work party on August 9, 2015 on the mountain. The group of Mike N6PIH, Jason KK6POP, Doug KG6ACO, and Dennis KD6TUJ put a new primer coat on the freezer building.

Scraping and wire brushing were done first to remove all the loose paint. When done, minor fixes were done to replace missing/aged nails, and reseal a joint above the doorway.

The paint shop said we could color the primer, so it was asked to try to get a tree leaf green. Did not quite work out that way! [See the inset photos for the color we got. Compare against the background -W5NYV]

Oh well, we are going to come back and paint another coat to a better green with the paint we still have on the hill. Still, this is better than plain white.

As the painting was finishing, it was decided to raise the tree near the block building. Moving the tree is hard work. A tour was taken before work started including airing out the block building. Started at 10:15. Finished by 12:15.

The next work party for the repeater site is scheduled for Sunday September 13, 2015. This will be part two of the freezer building repainting.

We could use at least 4 helpers for this project. Contact Dennis KD6TUJ to volunteer for part 2 of the work party.

Dennis



Before painting



After painting. Primer is bright green!



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Preparing to paint.



# Diamond Antenna Failure Analysis

By Paul KB5MU

After many years of faithful service on the roof of W5NYV's minivan, and a month or two of gradual performance loss, her Diamond NR770HB dual-band mobile antenna stopped working. After we replaced it with another of the same model antenna, I undertook to take it apart and try to find out what had gone wrong.

The whip itself had no obvious failure modes, so I loosened the two set screws and saved the whip as a spare. The base unit (shown in Fig. 1) would be sacrificed for science. The base unit included a handy fold-over feature (shown in Fig. 2). By pulling up on the whip against spring tension a little hinge arrangement could be revealed, allowing the whip to fold down without removing the antenna. At first the fold-over seemed to be integral, but with a little brute force (and Vice-Grips) the fold-over was found to unscrew from the rest of the base unit (Fig. 3). I drilled out the hinge pin and found just four other parts of the fold-over: the two outer housings, the spring, and a shiny metal plunger (Fig. 4). The smooth top surface of the plunger makes contact with the top of the main base unit.

Unless of course the top of the main base unit is horribly corroded (Fig. 5). The corrosion alone was probably enough to keep the antenna from working well. For the sake of science I should have cleaned the contact, reassembled the antenna, and re-tested it. But I was on a disassembly mission and not to be distracted by a possible repair.

With more force, Vice-Grips, and another large pair of pliers I was able to unscrew the UHF-style connector from the bottom of the main aluminum tube. Once unscrewed, it resisted coming out with gentle spring tension: the inductor of the matching network. I pulled harder, deforming the inductor and pulling the connector assembly out of the tube (Fig. 6). With it came several drops of water, loaded with corrosion, and two pieces of what had once been the capacitor of the matching network (Fig. 7). The capacitor was broken in half, and the other end of both its leads were also severed. I suspect the capacitor leads corroded through, and that was the final hard failure mode. Some or all of the capacitor damage might also have occurred during disassembly.

No amount of force at my command sufficed to remove the assembly at the top end of the main tube, so I fired up an oscillating multi-tool and cut it in half (Fig. 8). Embedded inside the plastic part was a threaded stud, with one end of the inductor wire in the bottom end. The top end of the stud stuck out to contact the plunger in the fold-over. So, no electronic components were found in the top assembly. The inductor and tiny capacitor were the entire circuit.

So: corrosion. No surprise there. Corrosion is the enemy of antennas everywhere. It might seem surprising that water could get into such a tightly sealed assembly, but experience says otherwise. There is no such thing as a tightly sealed assembly.

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Figure 1



Figure 2



Figure 3



Figure 4



Figure 5



Figure 6



Figure 7



Figure 8

*Photos by Paul KB5MU*



# San Diego Microwave Group Range Party

In anticipation of round 1 of the ARRL's August 15-16 10GHz & Up contest, the San Diego Microwave Group held their annual Tune-Up party last weekend at N6IZW's QTH. Fourteen operators attended with gear covering 10-47GHz. The largest antenna and RF power award went to K6NKC (48" 25W) and the Peanut award was taken by KK6GZL (24" 27dB) who is our newest member.

The San Diego Microwave Group will be operating its antenna measurement range at 2015 MUD, which is being sponsored by SBMS and held in San Diego on Oct 15-18. For MUD 2015 information and reservations see:

[http://ham-radio.com/sbms/mud2015/mud\\_index.html](http://ham-radio.com/sbms/mud2015/mud_index.html)

For Mud 2015 information on the antenna range contact :  
Kbanke -at- sbcglobal -dot- net

Thanks!  
Greg  
K6QPV



Ed Munn W6OYJ tests his rig at the range party.





Drew KB9FKO says “take it down lower” in the minimum discernible signal test.



Kerry N6IZW adjusts the attitude of the command station.

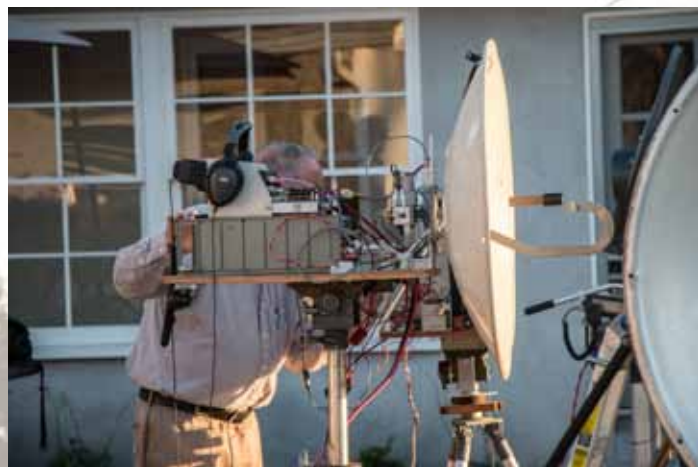


Michelle W5NYV and Kerry N6IZW.



# San Diego Microwave Group Range Party

*Photos by Michelle W5NYV and Paul KB5MU.*







Kerry Banke N6IZW tests W5NYV's 3D-printed 10GHz horn.



Kerry N6IZW runs the two tests for the range party. Minimum discernible signal and measured output power are recorded for each station. This is a great checkup before the contest season.



Greg Bailey K6QPV assists another member with his station's range test.

SCOPE  
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PERIODICALS

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

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Questions? Ideas? Comments? [W6NWG@amsat.org](mailto:W6NWG@amsat.org)

### Featured Program:

At 7:30pm on 2 September 2015, Palomar Amateur Radio Club will present our monthly program. We look forward to seeing you at the Carlsbad Safety Center, 2560 Orion Way, Carlsbad, CA. Arrive at 7:00 for socializing. Kevin KK6FRK talks about Ham Radio and Scouting. Kevin will discuss the actions being taken to get scouts interested in ham radio and electronics, and will tell us about all the ham radio activities planned leading to the 2015 Jamboree On The Air (JOTA) in October.

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

