JANUARY 2009

the SCOPE

A Newsletter by and for the Palomar Amateur Radio Club

Photos by Suzann.

Antenna Repair

Thanks to our dedicated Cert members, our snow-damaged radio antennas at the Palomar Mountain Volunteer Fire Department were repaired on December 22nd 2008.

-Suzann Leininger

Our Board

I am pleased to announce the 2009 Board of Directors for the Palomar Amateur Radio Club. Elections were held at the Club Meeting on the 3rd of December.

President Dennis Baca KD6TUJ

Vice President Terry Runyon K3PXX

Secretary Loren Hunt AD6ZJ

Treasurer Georgia Smith KI6LAV

Director #1 Paul Williamson KB5MU

Director #2 Conrad Lara KG6JEI

Please find contact information on page 2.

Save the Date!

Club Meeting

7 January 2009

Ron K2RP demonstrates 1950s ham radio.

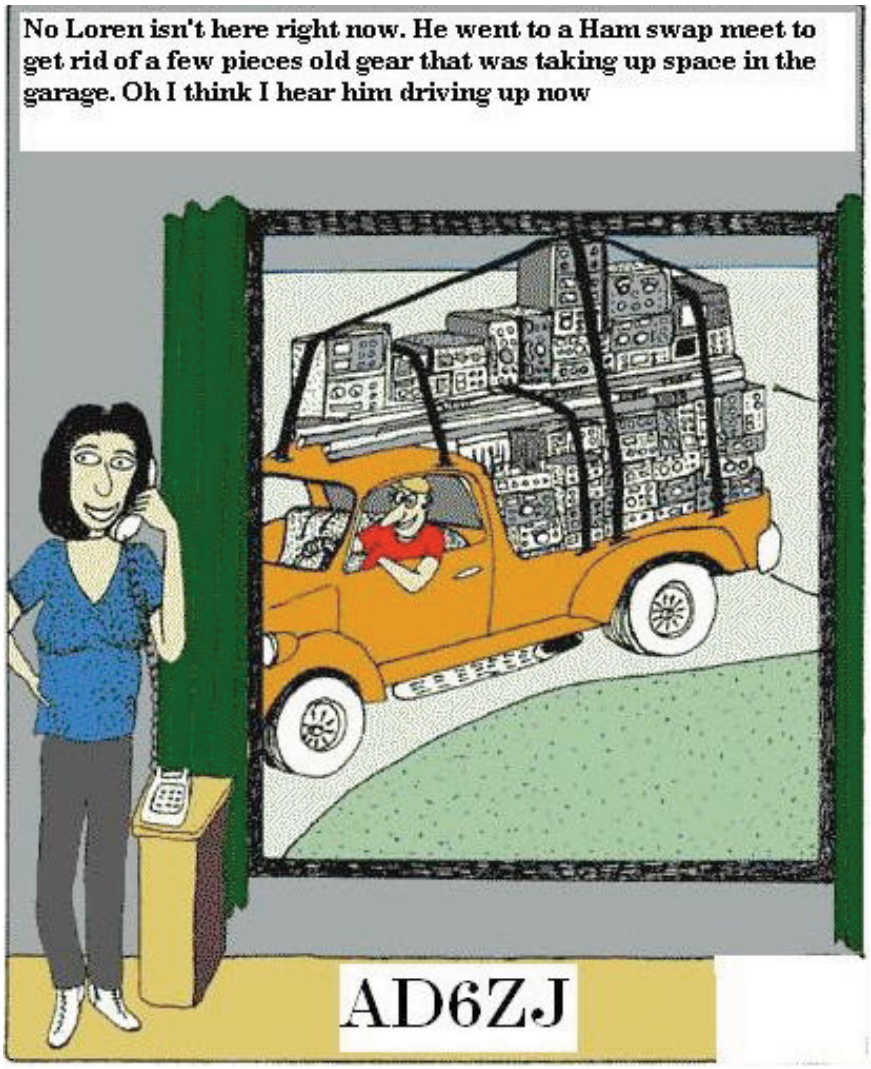
Know of an event coming up?

Board Meeting

14 January 2009

7:00pm at the QTH of W6GNI

A Laugh for Loren



Help Mataguay

Ernie Cowan writes, "Hi there…I am trying to assist in acquiring VHF equipment to set up a station at the Mataguay Boy Scout Camp near Warner Springs. My son is the resident ranger/caretaker there and they only have telephone communication. During a fire, there are concerns that phone lines might be down.

"I am hoping we could find equipment that people might be willing to donate, including base unit, ht's, mobile, power supply and antennas so that a good system could be set up at the camp. It could also make a great club project. The equipment would be donated to the Boy Scouts of America, so it would be tax deductable. Perhaps you can help spread the word and have anyone interested in helping contact me at (760) 518-8050.

"Best regards,
Ernie Cowan KE6GGP"

2009 Board of Directors Contact Information

OFFICE	NAME	CALL	PHONE	EMAIL
PRESIDENT	DENNIS BACA	KD6TUJ	760-802-2573	KD6TUJ@AMSAT.ORG
VICE-PRESIDENT	TERRY RUNYON	K3PXX	760-443-3726	K3PXX @YAHOO.COM
SECRETARY	LOREN HUNT	AD6ZJ		
TREASURER	GEORGIA SMITH	KI6LAV	760-521-7713	KI6LAV@AMSAT.ORG
DIRECTOR #1	PAUL WILLIAMSON	KB5MU	858-571-8585	KB5MU@AMSAT.ORG
DIRECTOR #2	CONRAD LARA	KG6JEI	760-481-9433	KG6JEI@AMSAT.ORG
MEMBERSHIP	AL DONLEVY	W6GNI	760-630-3096	W6GNI@AMSAT.ORG
SCOPE EDITOR	MICHELLE THOMPSON	W5YNV	858-350-7579	W5NYV@AMSAT.ORG
REPEATER SITE	MIKE PENNINGTON	K6MRP	760-749-8888	K6MRP@AMSAT.ORG

John WB6IQS gives a repeater site report at the December meeting. Photo by KB5MU.

Repeater Site Report – WB6IQS

On Sunday Dec. 7, WB6IQS went up to the repeater site to repair the 146.70 packet repeater. He worked on both the packet repeater and the 145.05 digipeater. There was a bad interface card connection in the 146.70 repeater. On the 145.05 digipeater there was a high contact resistance on the receive side of the 13.8 VDC transfer relay causing the receive voltage to be lower than normal.

Membership

New Members Joining PARC: KI6JEX, KI6TQW, KI6UGJ, and KI6EZJ. And, WA6NPM signed up for an additional 5 years. And, KI6JET signed up for the MAXIMUM ALLOWED, 10 years! Three members reinstated their membership. Welcome back. Thanks to all!!!

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.

December Raffle Winner

Patrick Horgan K6SML, pictured at right with Dennis KD6TUJ, won the Yaesu FT-1802 50-watt 2m pre-programmed radio that included alpha tagging at the December 2008 meeting. Congratulations to Patrick, and we'll hear you on the air!

Club Reports

Have some news you want to share with the club? Send it in to scope@palomararc.org

Track Down Big Guns

Whenever you hear a station with a BIG signal while tuning across the HF bands and wonder what these guys and gals are using for antennas and rigs at their station

Go to this web page and enter their call sign in the search window

http://www.conteststations.com/default.html

-Dennis N6KI

December Fold and Staple

KB6NMK Jo & Toby
KB6YHZ Art K2RP Ron
KI6LLC Roni
W6GNI Al & Kathy & Julie

Photos by KB5MU.

Club Classified Advertisements

Personal equipment ads are free to members and will run for at least one month.

Send your ad to scope@palomararc.org

Commercial ads are $2 per column inch per month. We will adjust your ad copy to conform to the number of inches bought.

(12.26) FOR SALE
Ten Tec Omni V transceiver. $400. Astron 35 amp power supply. Model RS35M, $100. Ten Tec antenna tuner. Rated 2kw, model 229, $90. Inverted V antenna for 80/40, $20. Heath kit 3inch scope model 10-21, $20. HAL DXP38 RTTY modem, $200. Hy-Gain Hy Tower 5 band vertical, $300. Transistor 3inch RTTT scope. Takes input from radio, $40. Call for details on items. Dale, W6IWO 760-728-6800 location is Fallbrook, CA

(12.26) WANTED
Need a large transformer, between 24 - 40 VAC secondary at minimum 20 Amperes (prefer 40 Amperes ratings) with 120 VAC primary. I have a Sorenson DCR series 40 VDC, 40 Ampere regulated power supply with a bad primary (shorted turns). Expect that the replacement transformer will be about 40 pounds in weight. Not concerned with mounting tabs or exact size, I can modify the 19" rack enclosure to fit. WB6IQS@att.net.nospam

(12.29) have several antennas that I just don't have the room for. Hy-Gain TH-7DX type, 7-element tri-bander Older unit in descent shape $150.00 (the latest version of this sells for $869.95). Hy-Gain TH-3 type, 3-element tri-bander Older unit in very good shape with new insulators, end caps and trap caps - $95.00 (the latest version of this sells for $469.95). Contact Loren Hunt AD6ZJ at 760-724-4644 or email at ad6zj@arrl.net

PARC Anniversary

The Palomar Amateur Radio Club began in February 13,1936 as North San Diego Radio Club. The name changed to Palomar Radio Club prior to the June 1936 publishing of QST. Association with ARRL began on May 8, 1937. February 2009 marks our 73rd anniversary. Two more years will be our 75th and we would like to do something very special.

First, we would like a volunteer to lead the 75th anniversary organizational effort. We would like to see events throughout the year take advantage of our anniversary theme.

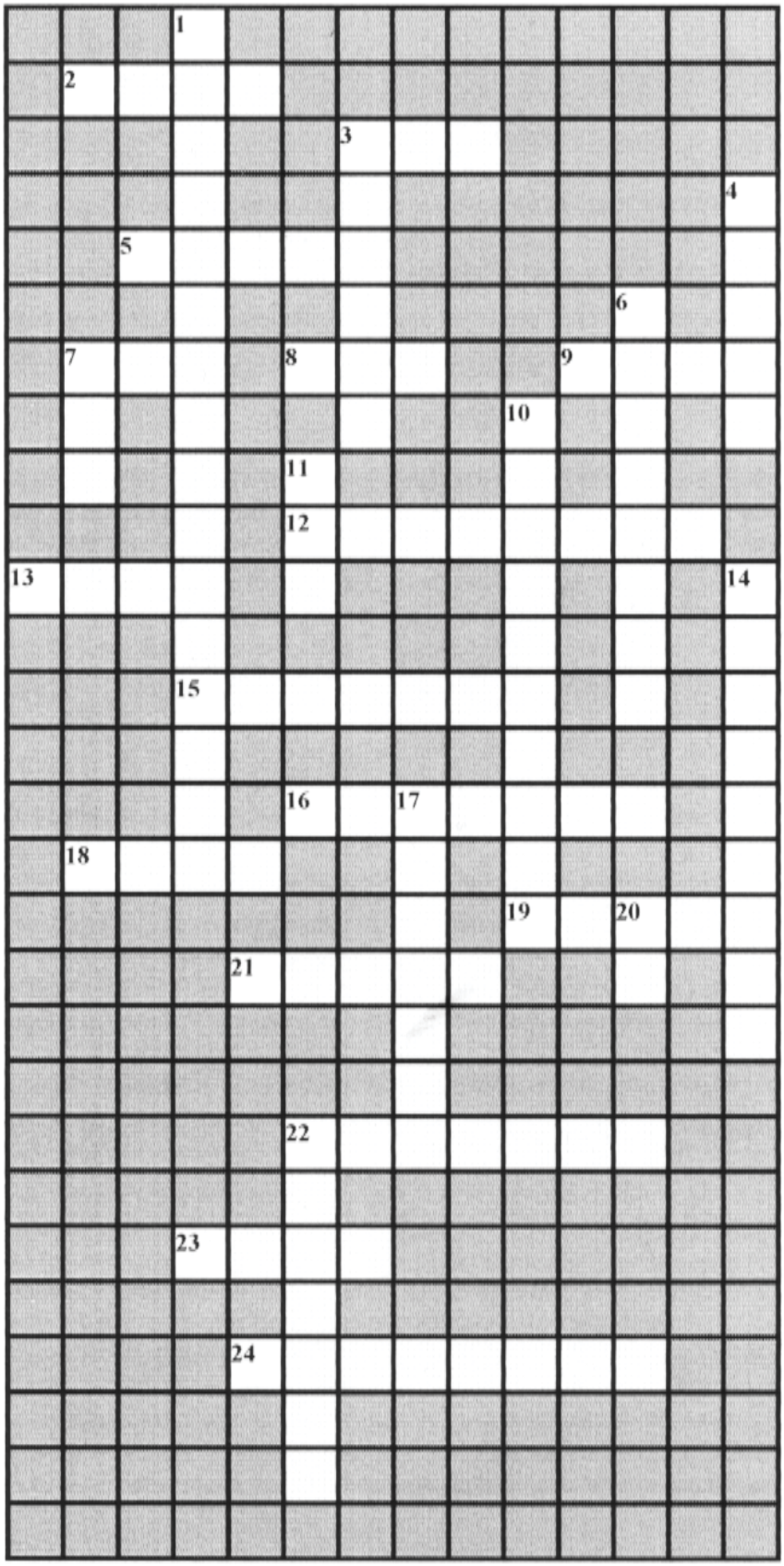
Second, we would like to hear from all of you that may have any stories, memorabilia, documents, photographs, and other items that could be presented and shared at our 75th anniversary events.

Please contact board@palomararc.org or any officer at a meeting to help with making our 75th anniversary year special.

Thank you for your participation and support.

Dennis KD6TUJ and Michelle W5NYV

Vintage Hint Crossword, by W5NYV



Down

1. Triad transformation
3. Antenna.
4. Hollow state component
6. Outside the soup kitchen.
7. Spec
10. Who made the HQ170?
11. Worn on the head
14. Collimation
17. Why don't you straighten up that voltage?
20. King of the 1950s phone modes.
22. Who made the S Line?

Across

2. Middle word of CCA.
3. Unit of current.
5. Mentor.
7. Can't be heard without it.
8. Not beef, not chicken.
9. What you do to a kit second.
12. What you do to a kit first.
13. American for valve.
15. Hearing aid.
16. What kind of poisonous vapor?
18. Drawer.
19. Male duck.
21. Bin
22. Provides clear control.
23. If you carry an amp and dissipate a watt, you might be one of these.
24. Hollow state component.

The solution is on our web site.

The Value of Amateur Radio in San Diego

The Officers and Members of the San Diego DX Club have complied a listing of some of the more than 28 important Public Safety stakeholders whose Public Service and Safety efforts would be seriously harmed by San Diego's proposed restrictive antenna regulations. It is hoped that once the City understands the value the these 3,691 Amateur Radio Operators bring to our City that the City will save itself and its citizens the unnecessary expense by not proceeding with this destructive and likely illegal legislation.

The Federal Communications Commission Public Safety and Homeland Security Bureau (www.fcc.gov/pshs/services/amateur.html) established amateur radio service as a voluntary non-commercial radio communications service that allows licensed operators to improve their communications and technical skills, while providing the nation with a pool of trained radio operators and technicians who can provide essential communications during emergencies.

For almost a century **San Diego's 3,691 Federally Licensed Amateur Radio Operators** have helped protect San Diego by providing Emergency Communications to quote Walter Cronkite **"When All Else Fails"** that time and time again has saved both lives and property in San Diego. Even in this modern age of instant communications, as we saw during Hurricane Katrina and the 2003 and 2007 San Diego Firestorms, commercial and government communications systems failed while Amateur Radio continued to provide vital life saving links.

Currently the City of San Diego is proposing new legislation to restrict the installation of vital Amateur Radio Antennas. While the legal discussion of the proposed legislation, which will be covered separately by our Legal Counsel, will show that the courts will likely rule the legislation to be **Illegal under Federal PRB-1 and State AB1228 regulations**, the **proposed legislation will seriously harm the Public Safety of San Diego** and cause its Citizens unnecessary expense to defeat it in the courts.

San Diego's Amateur Radio Operators spend countless hours working hard on behalf of San Diego by spending their own money to maintain and by giving freely of their time to exercise both their equipment and their skills, contributing to the reliability of Amateur Radio communication networks that cannot be matched by equipment that is just installed and then neglected until it's needed.

Perhaps the most important part of San Diego's Amateur Radio infrastructure is the considerable investment that has been made into the Home Stations and Antennas systems that provide the primary backbone of communications. Without these Home Stations and their High Frequency Antennas, San Diego's Public Safety would be severely limited if not harmed in its ability to communicate outside of City boundaries.

The proposed legislation will cause irreparable harm to the people of San Diego. The San Diego DX Club urges its City representative to protect the public by defeating it.

Amateur Radio has been in existence for almost a century and from its earliest days it has provided communications "When All Else Fails". There are 650,000 licensed in the USA and over 100,000 in the State of California.

There are currently **3691 Amateur Radio Operators licensed by the Federal Communication Commission in the City of San Diego and a total of 8834 in San Diego County**.

continued on page 8

continued from page 7

These civic-minded individuals voluntarily contribute vital communications for many City agencies that far exceeds their numbers. They have provided vital communications during local emergencies such as the Firestorm 2003 and 2007 but they also provide ongoing communications services for the Red Cross, San Diego County Emergency Operations Center, San Diego County Sherriff, Hospital Emergency Services, CAL FIRE, US Marine Corp Base, State of California Office of Emergency Services, Miramar Air Show, the Thunder Boat Races in Mission Bay, and the Mother Goose Parade to name but a few.

San Diego's Amateur Radio Operators **have invested almost $6,000,000 in capital equipment** and **annually invest more than $500,000 into new equipment and maintenance.**

San Diego's Amateur Radio Operators contribute **more than 115,000 man hours of personal time and as well as money towards serving their community.**

San Diego's Amateur Radio Operators **saves the City of San Diego more than $2,500,000 annually in Direct Avoided Costs of Labor**.

San Diego's Amateur Radio Operators **spends more than $500,000 annually supporting the Local Electronics Retail Community.**

San Diego's Amateur Radio Convention bring **more than $150,000 in Convention Business and 1,000 room nights to San Diego.**

Over the years, San Diego's Amateur Radio Operators have directly saved the City of San Diego millions of dollars by providing free of charge Emergency, Public Safety and Public Service Communications.

To read the full 37-page report that this article is excerpted from, contact any officer of the San Diego DX Club.

Goodie table, December meeting.

Harry W6YOO buying tickets for the raffle.

Dennis KD6TUJ sells raffle tickets.

Photos by KB5MU.

Pat WA6MHZ, Ron K2RP, and HarryW6YOO visit near the coffee station at the December meeting.

Goodie table, December meeting.

Dennis KD6TUJ collects ballots for the election of Director #2.

Election results are counted.

Photos by KB5MU.

SCOPE

P.O. Box 73
Vista, CA 92085-0073

Address service requested

PERIODICALS
POSTAGE
PAID AT
VISTA CA
92085-9998

Scope (USPS #076530) is published monthly by the Palomar Amateur Radio Club 1651 Mesa Verde Drive, Vista, CA 92084. POSTMASTER: Send address changes to SCOPE, P.O. Box 73, Vista, CA 92085. Periodicals postage paid at Vista, CA 92084. Dues are $20 per year or $35 per year for a family. Dues include a subscription to Scope.

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

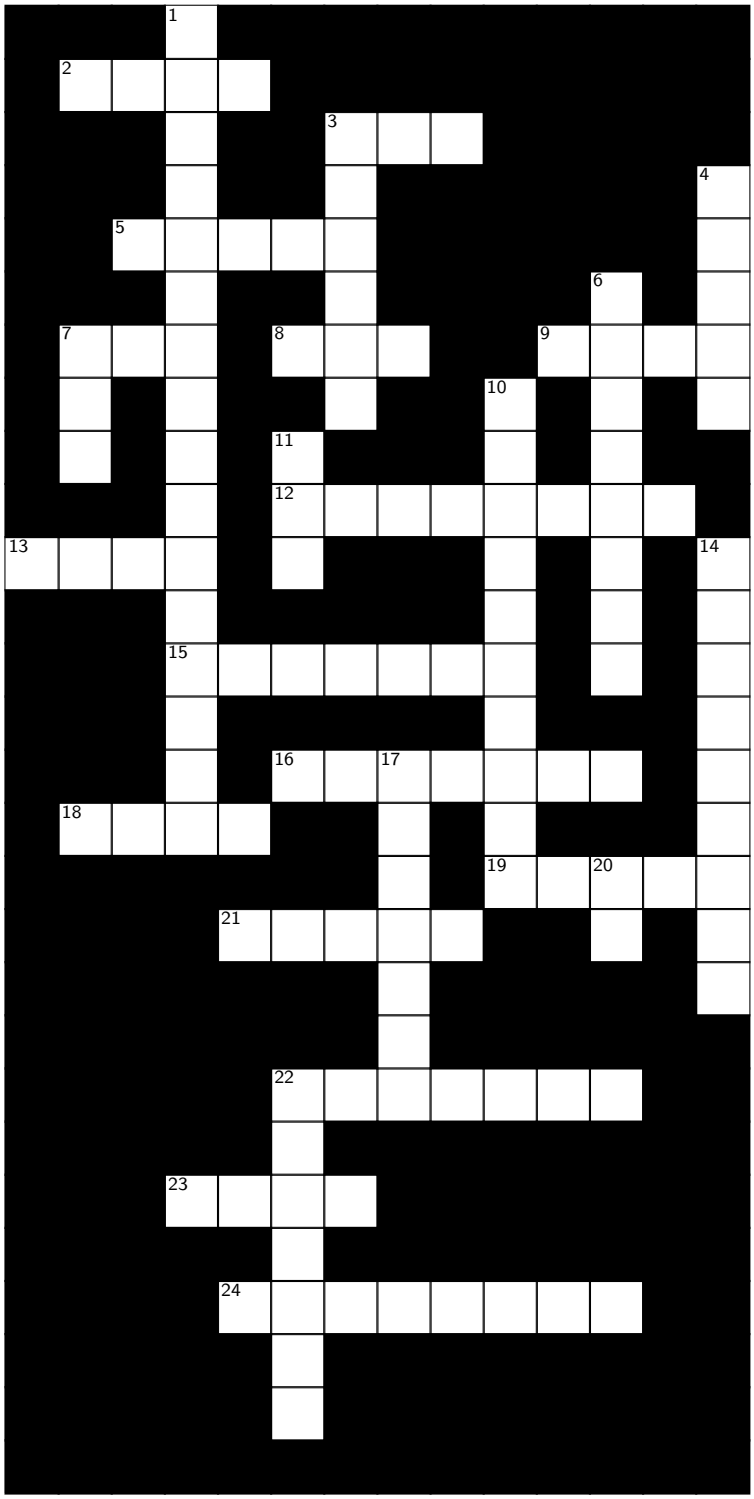
Featured Program

January Program: **K2RP Ron Pollack Demonstrates 1950s Ham Radio**. Ron has been writing an occasional Scope article for some time discussing the history of some of the equipment in his collection.

This is your opportunity to see some of these restored relics in person, as well as hear the history of our hobby during the 1950s. He'll discuss the changes in regulations, licensing (the introduction of the Novice license, for example), the rise of SSB, VFOs, and transceivers, replacing AM, crystals, and separate transmitters and receivers.

So, if the names Hallicrafters, Heathkit, National, Collins and Hammarlund ring a bell with you, come to the meeting and twiddle some dials!

Vintage Hint Crossword, by W5NYV



Down

1 Triad transformation

3 Antenna

4 Hollow state component

6 Outside the soup kitchen

7 Spec

10 Who made the HQ170?

11 Worn on the head

14 Collimation

17 Why dont you straighten up that voltage?

20 King of the 1950s phone modes.

22 Who made the S Line?

Across

2 Middle word of CCA

3 Unit of current

5 Mentor

7 Cant be heard without it

8 Not beef, not chicken

9 What you do to a kit second

12 What you do to a kit first

13 American for valve

15 Hearing aid

16 What kind of poisonous vapor?

18 Drawer

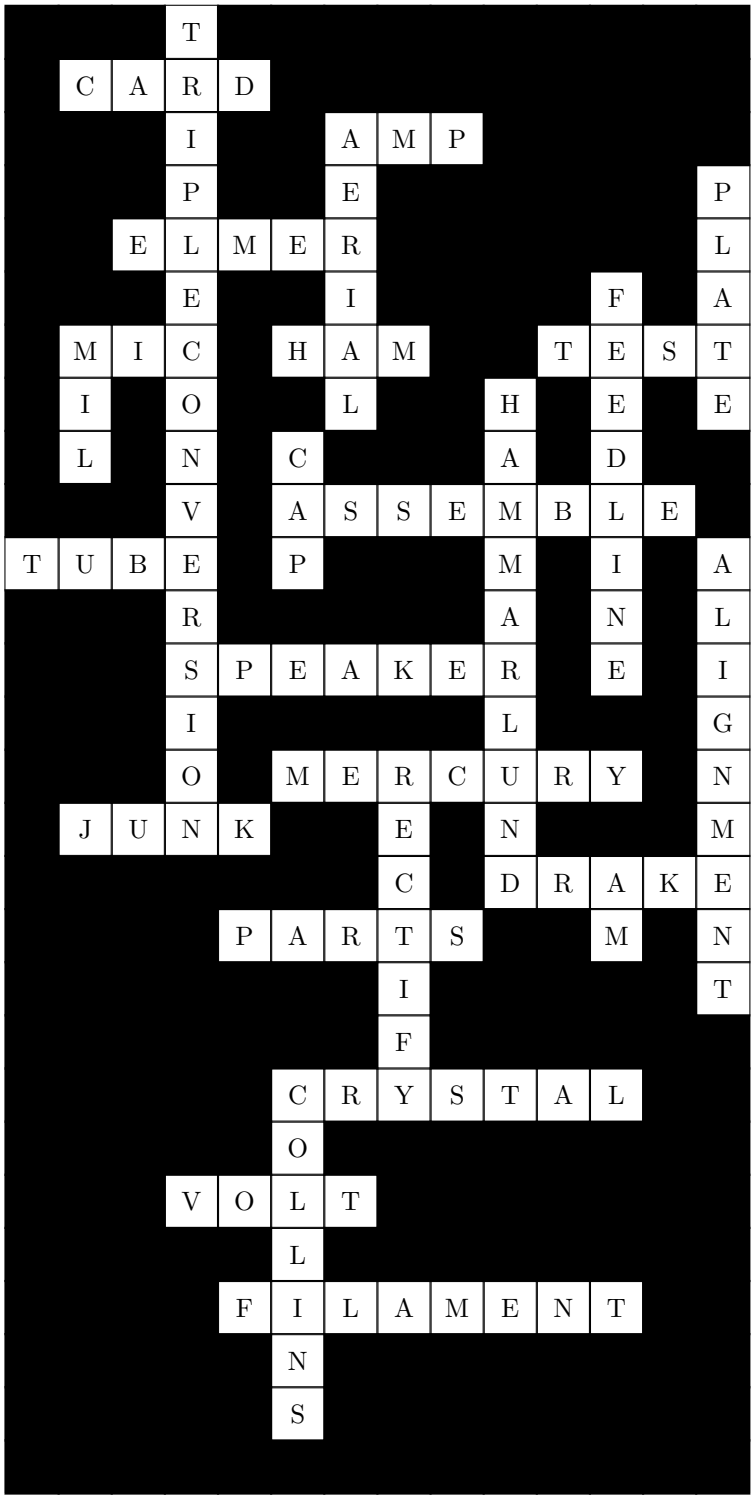
19 Male duck

21 Bin

22 Provides clear control

23 If you carry an amp and dissipate a watt, you might be one of these

24 Hollow state component


T
CARD
IAMP
PEP
ELMERL
EIFA
MICHAMTESTT
IOLHEE
LNCADV
ASSEMBLE
TUBEPMIA
RANL
SPEAKERELI
IL G
OMERCURYN
JUNKENM
CDRAKE
PARTSMN
IT
F
CRYSTAL
O
VOLT
L
FILAMENT
N
S

FEBRUARY 2009

SCOPE

A Newsletter by and for the Palomar Amateur Radio Club

PARC Board (including appointed members) Group Photo by KB5MU with able assistance from Bob Birch.

left to right, Loren, Al, Mike, Dennis, Conrad, Michelle, Georgia, Terry, Paul

Elected PARC Board

President Dennis Baca KD6TUJ
Vice President Terry Runyon K3PXX
Secretary Loren Hunt AD6ZJ
Treasurer Georgia Smith KI6LAV
Director #1 Paul Williamson KB5MU
Director #2 Conrad Lara KG6JEI

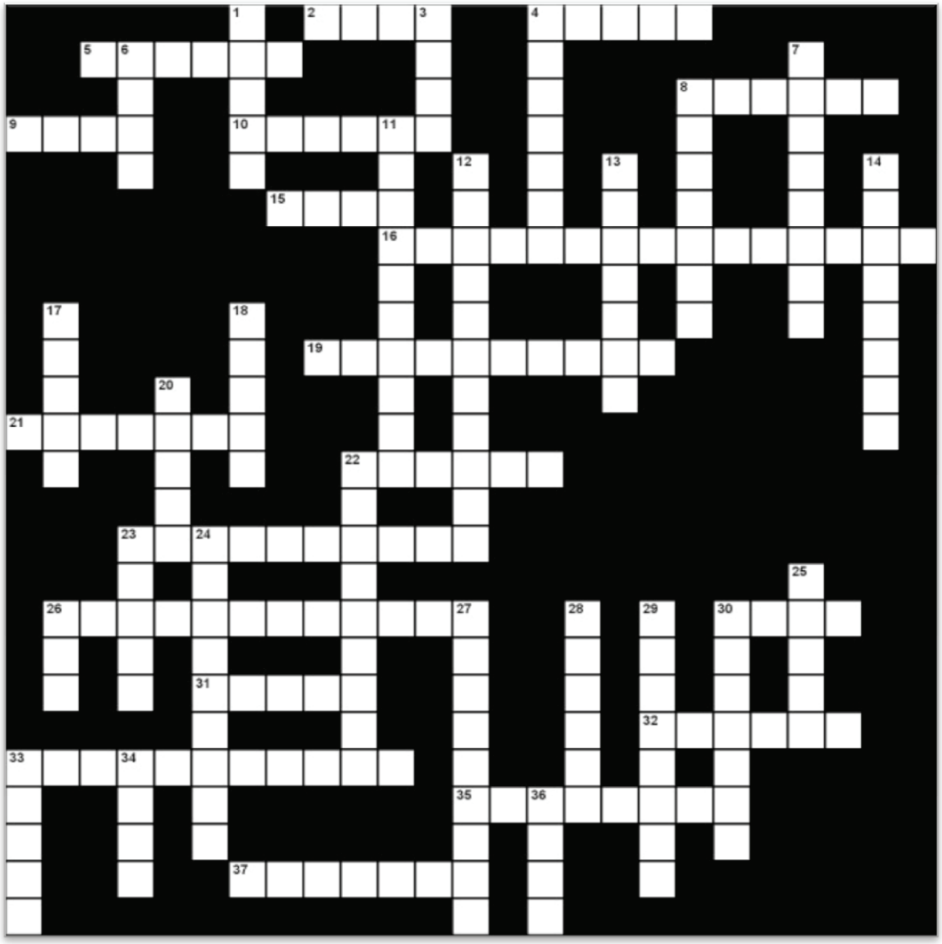
Save the Date!

Club Meeting
4 February 2009
Harry W6YOO will talk about his adventures in the south Pacific, "In the Wake of the Bounty"

Club Event
February 2009
Spell PARC and get a QSL card.
See page 4.

Board Meeting
11 February 2009
7:00pm at the QTH of AD6ZJ.

In the Wake of the Wake of the Bounty



Across

2 holiday (4)
4 vanilla pearl (5)
5 12 signs (6)
8 largest windward island (6)
9 water-skiers ride this (4)
10 forbidden island (6)
15 rhymes with infamous film, no bull (4)
16 98 US PW 5-10-43 (15)
19 circlet of crabs (10)
21 Lopevi is active here (7)
22 the big island (6)
23 Gardner Island (10)
26 Pulitzer Prize winner in 1950 (12)
30 valley island (4)
31 hull island (5)
32 island of the yellow lizard, picture in a frame (6)
33 Route 66 AZ Island (11)
35 Brando's Paradise Lost (8)
37 large male sibling ruled (7)

Down

1 Yasur is active here (5)
3 gathering place (4)
4 lots of very strong wind (7)
6 spectacular dance, no singing (4)
7 terrier down a hole (8)
8 and Isolde (7)
11 Kanton Island (10)
12 techtonically formed chain of islands "chief sea" (11)
13 standing on the corner in _____ Arizona (7)
14 freight faith father (8)
17 gained independence in 1994 (5)
18 islelets (5)
20 pineapple island (5)
22 lots of very strong wind (9)
23 world's smallest island nation (5)
24 target island (9)
25 most QSOs in 2008 (5)
26 fictional airline in 2006 movie S.O.A.P (3)
27 yuletide (9)
28 phoenix island (6)
29 indigenous people of the Mariana Islands (8)
30 refuge from hansen's (7)
33 garden isle (5)
34 very strong wind (4)
36 infamous film, no bull (4)

Photo by Sorrowfree.

North American QSO Party, SSB

Call: N6KI, Operator(s): N6KI, Station: N6KI,
Class: Single Op LP, QTH: CA, Operating Time : 10hr

Summary:

Band	QSOs	Mults
160:	20	7
80:	130	31
40:	265	46
20:	377	48
15:	66	18
10:	7	1

Total: 865 151 Total Score = 131,480
Club: Southern California Contest Club
Team: SCCC #1
Comments:
Had GREAT runs on 40 mtrs around 2330Z - Had 10 QSO rate at 313 QPH and 100 QSO rate at 200 QPH!
Equip; IC-7800, MonstIR SteppIR at 72 ft, 75 mtr Coaxial Stup Inverted V Dipole, 160 mtr Longwire, 80/160 mtr 6 Ft Active Loop

Membership

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.

January Fold and Staple

Thank you!

Club Reports

Have some news you want to share with the club? Send it in to scope@palomararc.org

Consumer Reports Request

On a whim, I went online to consumer reports. (http://www.consumersunion.org/about/) and used the 'contact' link to send an email.

In the email I requested that they analyze ALL electronic devices (anything with an internal computer such as washing machines, refrigerators, etc) or anything having the need for battery chargers for RF emissions that would exceed FCC part 15 rules and that these tests become a standard part of their testing procedures.

I did receive a response which indicates that they will take my request under advisement...I suggest that all of us that are subscribers either use the email to send similar requests or snail mail since my single request has no weight...but multiple requests could provide a stronger awareness.

Maybe.....

--73
Bruce, WA3AFS

CQ 160 Meter Contest 2009

Call: N6KI, Category: Single Operator, Power: High Power, Band: Mono 160, Mode: CW, Hrs: 8.0

	QSO	STATES	COUNTRIES		
Totals	431	54	16	=	75,390

Best 160 Condx I recall for as many years as I have been working this contest !

Personal equipment ads are free to members and will run for at least one month.

Send your ad to scope@palomararc.org

Club Classified Advertisements

Commercial ads are $2 per column inch per month. We will adjust your ad copy to conform to the number of inches bought.

(12.26) FOR SALE
Ten Tec Omni V transceiver. $400. Astron 35 amp power supply. Model RS35M, $100. Ten Tec antenna tuner. Rated 2kw, model 229, $90. Inverted V antenna for 80/40, $20. Heathkit 3inch scope model I0-21, $20. HAL DXP38 RTTY modem, $200. Hy-Gain Hy Tower 5 band vertical, $300. Transistor 3inch RTTT scope. Takes input from radio, $40. call for details on all items for salele to . Dale, W6IWO 760-728-6800 location is Fallbrook, CA

(1.25) For Sale: Two CDR heavy duty rotators with control heads.

E mail at sstires@cox.net.

Sonny, WA5ACE

Special Event

During the month of February PARC will be celebrating its 73rd anniversary. As part of the celebration several members have been issued special 1x1 call signs. Each of 4 1x1 calls will be used in four consecutive weeks during the month. By working all four stations you will be able to spell PARC with the suffixes. These stations may be active on the repeaters as well as HF and VHF simplex but each call will only be on for one week. Work the call when you can find it. There will be a special QSL card for stations that can work all four and spell PARC.

73
AD6ZJ, Loren

PARC Anniversary – Call for Volunteer

The Palomar Amateur Radio Club began in February 13,1936 as North San Diego Radio Club. The name changed to Palomar Radio Club prior to the June 1936 publishing of QST. Association with ARRL began on May 8, 1937. February 2009 marks our 73rd anniversary. Two more years will be our 75th and we would like to do something very special.

First, we would like a volunteer to lead the 75th anniversary organizational effort. We would like to see events throughout the year take advantage of our anniversary theme.

Second, we would like to hear from all of you that may have any stories, memorabilia, documents, photographs, and other items that could be presented and shared at our 75th anniversary events.

Please contact board@palomararc.org or any officer at a meeting to help with making our 75th anniversary year special.

Thank you for your participation and support.

Dennis KD6TUJ and Michelle W5NYV

January Membership Meeting Photographs

Ron K2RP presented a wonderful collection of antique radios.

10 Things they didn't teach you in Engineering School

1. There are at least 10 types of capacitors.
2. Theory tells you how a circuit works, not why it does not work.
3. Not everything works according to the specs in the databook.
4. Anything practical you learn will be obsolete before you use it, except the complex math, which you will never use.
5. Engineering is like having an 8 a.m. class and a late afternoon lab every day for the rest of your life.
6. Overtime pay? What overtime pay?
7. Managers, not engineers, rule the world.
8. Always try to fix the hardware with software.
9. If you like junk food, caffeine and all-nighters, go into software.
10. Dilbert is not a comic strip, it's a documentary.

Sent in by John WB6IQS

Left: Ron K2RP and Michelle W5NYV.

Photos by KB5MU.

January Membership Photos Continued

Above: Ron K2RP brought ephemera as well as all the hardware, some of which is pictured below and to the right.

Photos by KB5MU.

One-Day Amateur Radio Technician License Class
Saturday, March 21st, 2009
8:00 AM to 5:00 PM with breaks and a one-hour lunch
Location: The Salvation Army Kroc Center - Community Room
Address: 6845 University Ave., San Diego, CA 92115

VE Testing, if available at the classroom, will be $5.
Please RSVP with Steve Early at ad6vi@cox.net.

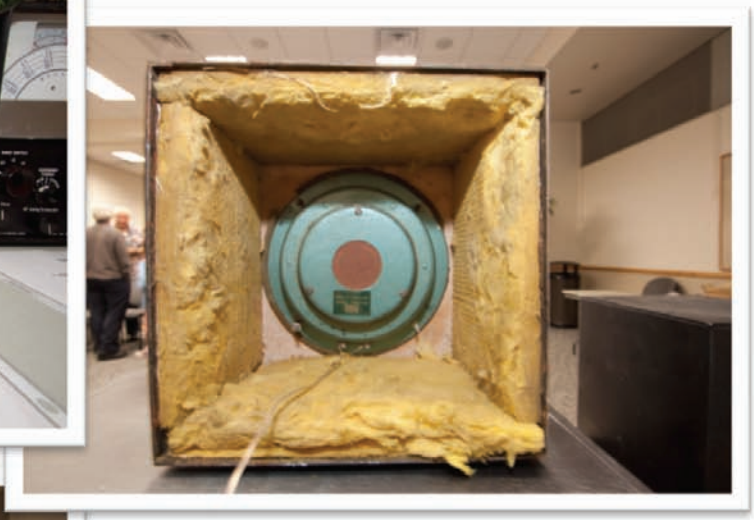
Programming

The following programming software is available to club members:

Yeasu VX-170
YEASU FT-1802
ICOM IC V-8
ICOM IC V-8000
ICOM IC 207H
KENWOOD
260G/270G/272G
KENWOOD 690/790/890

Dennis KD6TUJ

Photos by KB5MU.



Photos by KB5MU.

SCOPE

P.O. Box 73
Vista, CA 92085-0073

Address service requested

Scope (USPS #076530) is published monthly by the Palomar Amateur Radio Club 1651 Mesa Verde Drive, Vista, CA 92084. POSTMASTER: Send address changes to SCOPE, P.O. Box 73, Vista, CA 92085. Periodicals postage paid at Vista, CA 92084. Dues are $20 per year or $35 per year for a family. Dues include a subscription to Scope.

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

Featured Program

February Program: "**In The Wake Of The HMS Bounty" by W6YOO**. How many of you have ever taken a cruise? It is much like staying in a deluxe hotel that moves around. You move in, unpack, and visit the spots you will pass on the voyage, and eat, boy can you ever eat! Harry Hodges, W6YOO and his YL Jerry Carter, W6JAC took a cruise from the 12th of March to the 3rd of April 2007 called "In The Wake Of The Bounty" from Papeete, Tahiti to Bora Bora and Rangiroa Lagoon, then on to Pitcairn Island where they met descendants of the HMAS Bounty mutineers. They then traveled on to Rapa Nui (Easter Island) where they saw the huge statues. From there it was on to the Juan Fernandez Archipelago of Robinson Crusoe fame and finally on to Valparaiso, Chile where they disembarked. It is all on professional video. Come relive the trip aboard the MV Discovery with us.

MARCH 2009

SCOPE

A newsletter by and for the Palomar Amateur Radio Club of San Diego, California.
See SCOPE in color on our website at www.palomararc.org.

Lunch Bunch Helps Preston W6ASP Celebrate Birthday

A large Lunch Bunch crowd at Fuddruckers on 30 January 2009 helped Preston Butler W6ASP celebrate his 60th birthday. The multi-layer multi-flavor cake with chocolate icing and blue lettering was cut by Ted KD6AKT, who also collected donations for an HRO gift certificate for Preston.

The lunch bunch meets every Friday and is easy to join. See www.w0ni.com to sign up for the mailing list.

Save the Date!

Club Meeting
4 March 2009
Emergency Communications Update with Terry Runyon K3PXX

Board Meeting
11 March 2009
7:00pm at W6GNI QTH.

Tech Class
21 March 2009
8:00am – 5:00pm

Please RSVP with Steve Early at ad6vi@cox.net.

Electronic Delivery

You can choose! If you still want to get this newsletter the old-fashioned way, printed on paper and delivered to your mailbox, you can. But if you don't need the paper copy, you can save the club some money by getting your Scope online. As a bonus, the online version is in color!

You can always find the Scope on the web site. To help you remember to check the web site, you can sign up for the Scope-notice mailing list and get an email reminder each time a new Scope is posted. You can also choose to have the Scope emailed directly to you by subscribing to the Scope-PDF mailing list.

Go to www.palomararc.org and click on Newsletter.

Club Reports

Got news? Send reports about your activities and things that you think other club members need to know to scope@palomararc.org.

February Raffle Winner

Winner of the YAESU FT51R 2m/70cm dual receive hand held transceiver at the February 2009 General Meeting is Donna Zaitz, KI6SBW. She is a new ham, who now has a radio to get on the air. It only took one ticket to win.

Dennis KD6TUJ

December Fold and Staple

KB6NMK Jo, WA5ACE Sonny, W6GNI Al & Kathy, KB6YHZ Art

The last Fold & Staple for 2008!

Membership Report for Dec. 2008

New Members Joining PARC: KI6SAO, KI6UYF, N6IMM, and KI6TUA. One member reinstated his membership, which had lapsed. Thanks to all.

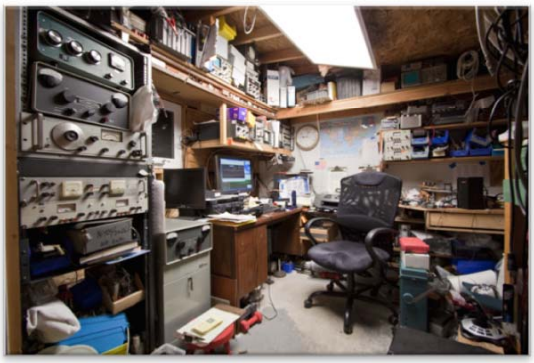
At the last Board Meeting, the Treasurer Reported a summary of 2008's Expenses and Income. In order to support the repeaters on the mountain, the following were the expenses for the year. Property tax $244.30, Electricity $1475.03, Telephone line charges $856.36, Misc. repairs $613.11. That adds up to about $3188, or about $266 per month. In addition, the tower was repainted, for the first time since installation for preservation. ($3546.26)

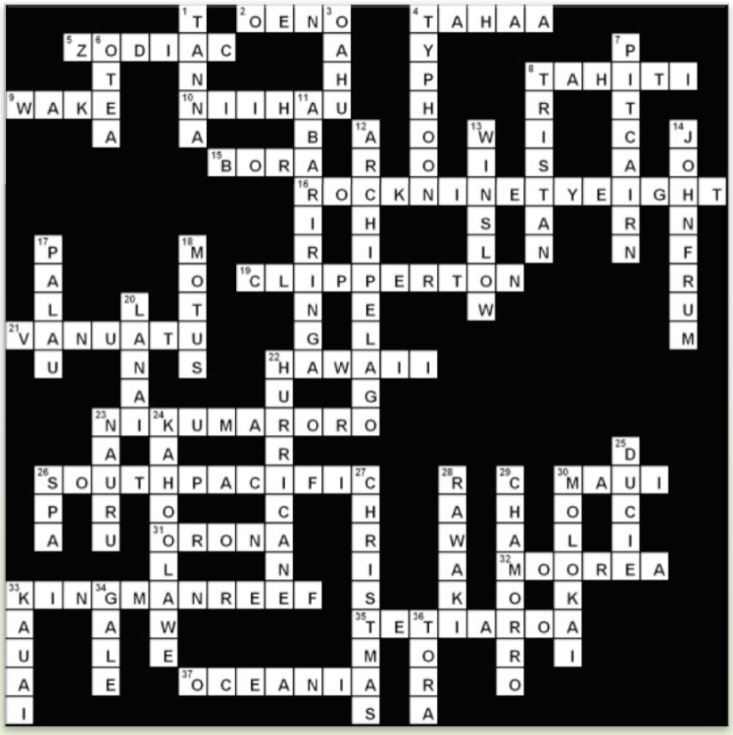
The funds to support all this come from member dues, and donations.

We need new members! And equally important, a greater percentage of renewals!

Pictured at left (photos by KB5MU) is Harry W6YOO. He presented "In the Wake of the HMS Bounty" at the February 2009 PARC general meeting.

After the February Board meeting at the home of our secretary Loren, AD6ZJ, we were privileged to tour his ham shack, shown here. It's traditional to call our radio room "the shack", but Loren's really is a shack in the back yard. He told us about the day when just decided to tear down the old shack and build a better one. By the end of the day he'd moved out all the gear and demolished the old shack. He called for a work party to pour the new concrete slab, and Conrad KG6JEI showed up to help. About six weeks later, this neat new shack was completed and on the air. Loren assures us that the test equipment all works, but some of the vintage gear is, shall we say, an ongoing project. –KB5MU





February Puzzle Solved

And Now, The Riddle of the Elmer

It's said that a famous Elmer had among his treasures an enclosure, the top of which was perfectly square in shape. It was inlaid with pieces of copper, and a strip of gold ten inches long by a quarter of an inch wide. The Elmer promised to teach all his ham radio knowledge to the one who would tell him the dimensions of the top of the box from these facts alone: that there was a rectangular strip of gold, ten inches by 1/4-inch; and the rest of the surface was exactly inlaid with pieces of copper, each piece being a perfect square, and no two pieces of the same size.

Can you solve the Riddle of the Elmer?

San Diego CERT Spring Exercise Prelim Report

CERT, ICS, and Drills

The San Diego CERT Spring Exercise was designed in major part by David Heiser KI6SAO to provide hams and Community Emergency Response Teams (CERT) a way to practice the Incident Command Structure (ICS) system, which is a standardized management protocol for emergencies. All emergency workers and citizens are encouraged to learn and practice ICS. Drills and exercises are opportunities for just such endeavors.

Drills Don't Have to Be Dull!

The Spectators sure weren't dull. See photo at left. When the Palomar Mountain community learned that it had been selected as the final leg of the 2009 AMGEN Tour of California bicycle race, preparations began to safely accommodate the expected crowds. Estimates for crowd size ranged upwards of 10,000 people. Managing large crowds requires excellent communications support.

Types of Hazards Expected

In the photograph to the right, taken on Sunday morning at the summit of Palomar Mountain, four types of traffic can be seen: foot, bicycle, car, and motorcycle. Different types of traffic mixing together in a high-distraction environment means increased risk of accidents. Good communications mitigate the risk.

Photos by W5NYV

Fun and Fellowship

It goes without saying that working an internationally recognized sporting event in a beautiful outdoor environment with full and friendly support from the served agency has all the ingredients for a very enjoyable experience. The San Diego CERT Spring Exercise in support of the AMGEN race certainly was all that and more. More on the event in April Scope!

CW Skimmer

SDR Concepts In Action

By Paul KB5MU

Old meets new. What's the oldest thing in ham radio? Morse code, of course. After all these years we still key our transmitters on and off to communicate, and use our radio receivers, ears, and brains to turn those bursts of energy back into understandable information. What's the latest hot technology in ham radio? Probably software-defined radio (SDR), which uses computing power in place of expensive, finicky radio hardware to achieve superb performance at lower cost. These two technologies merge in a new program from VE3NEA called CW Skimmer.

Let's start with a review of what it's like to receive CW the traditional way. Pick a band segment, say the 40-meter CW segment from 7.000 MHz to 7.125 MHz, and switch the radio receiver (or transceiver) to that band. This segment is 125 kHz wide, which is plenty of room for hundreds of different CW signals, each on a slightly different frequency. Human hearing is more limited, so our traditional radio receiver filters out most of the signals. With a typical SSB filter, only about 2.4 kHz section of the band is audible at any one time. That's still enough room for dozens of different CW signals. Our receivers translate radio frequencies into audio frequencies in such a way that each CW signal on a different frequency comes out as an audible tone with a different pitch. The receiver's tuning knob controls which 2.4-kHz chunk of the band we're listening to, and all the signals in that chunk come out of the receiver at once. The operator has to concentrate on the audible tone at one particular pitch, ignoring all the others. The loudness of the tone corresponds directly to the strength of the received signal. Since the transmitting station is switching the signal on (full strength) and off (zero strength), the receiving operator will hear the tone switch on and off, and is able to decode the long and short bursts of tone into characters, words, and eventually an entire conversation.

What's wrong with this picture? There are potentially hundreds of signals in that one band segment, and by intense concentration (unless you're better at receiving Morse code than most operators!) you can copy at most one of them at a time. What's worse? You usually don't know which signal to concentrate on until after you've already copied it. You have to tune around, listening briefly to signal after signal, concentrating enough to get the gist of what's being said, until you find a station that you want to work. That can be very enjoyable, and a skilled CW operator can do it with remarkable efficiency, but it's still time-consuming and can become tedious. Even the best CW operator can only copy a tiny fraction of the activity on a busy band.

CW Skimmer can do a whole lot more. It's a Windows program that can automatically and simultaneously decode all the CW signals in a band segment. On a fast computer (3 GHz P4) it can decode up to 700 signals. That's remarkable enough in itself, but that's only the beginning of the feature list. CW Skimmer is designed to help you visualize all the activity on the band and pick out signals of special interest.

The main window features a graphical display called a waterfall. You may have seen waterfall displays used in digital mode programs such as Digipan for PSK31. In a waterfall display, one axis is frequency and the other axis is time. The time axis scrolls by continuously, so you're always looking at the last few seconds of time.

continued on page 8

Club Classified Advertisements

Personal equipment ads are free to members and will run for at least one month.

Send your ad to scope@palomararc.org

Commercial ads are $2 per column inch per month. We will adjust your ad copy to conform to the number of inches bought.

(12.26) FOR SALE
Ten Tec Omni V transceiver. $400. Astron 35 amp power supply. Model RS35M, $100. Ten Tec antenna tuner. Rated 2kw, model 229, $90. Inverted V antenna for 80/40, $20. Heathkit 3inch scope model I0-21, $20. HAL DXP38 RTTY modem, $200. Hy-Gain Hy Tower 5 band vertical, $300. Transistor 3inch RTTT scope. Takes input from radio, $40. call for details on all items for salele to . Dale, W6IWO 760-728-6800 location is Fallbrook, CA

(1.25) For Sale: Two CDR heavy duty rotators with control heads.

E mail at sstires@cox.net.

Sonny, WA5ACE

Special Event

During the month of February PARC celebrated its 73rd anniversary. As part of the celebration several members were issued special 1x1 call signs. Each of 4 1x1 calls was used in the four consecutive weeks during the month. By working all four stations you were able to spell PARC with the suffixes. These stations were active on the repeaters as well as HF and VHF simplex but each call was only on for one week. There will be a special QSL card for stations that worked all four and spelled PARC.

73
AD6ZJ, Loren

PARC Anniversary – Call for Volunteer

The Palomar Amateur Radio Club began in February 13,1936 as North San Diego Radio Club. The name changed to Palomar Radio Club prior to the June 1936 publishing of QST. Association with ARRL began on May 8, 1937. February 2009 marks our 73rd anniversary. Two more years will be our 75th and we would like to do something very special.

First, we would like a volunteer to lead the 75th anniversary organizational effort. We would like to see events throughout the year take advantage of our anniversary theme.

Second, we would like to hear from all of you that may have any stories, memorabilia, documents, photographs, and other items that could be presented and shared at our 75th anniversary events.

Please contact board@palomararc.org or any officer at a meeting to help with making our 75th anniversary year special.

Thank you for your participation and support.

Dennis KD6TUJ and Michelle W5NYV

continued from page 5

Within the waterfall, the brightness of the display indicates signal strength. An empty band would be all black. Strong signals show up as bright blue against the black background. Weaker signals are dimmer. The speed and resolution of CW Skimmer's waterfall are designed so you can easily see the dots and dashes of each Morse code signal, so you can identify which audible signal corresponds to which line of bright blue dots and dashes on the waterfall display. See page 10 for a picture.

CW Skimmer is also looking at those dots and dashes and continuously decoding every single one of them and storing the results. It scans the decoded information for callsigns and tags each line on the waterfall with the decoded callsign from that station. You can see at a glance what stations are being heard throughout the band. CW Skimmer also has some understanding of the typical ham radio QSO, and can identify which stations are calling CQ, which stations are giving signal reports, and which stations just came up on a new frequency and asked, "QRL?"

With the mouse you can select any signal you see on the waterfall or in the station list. CW Skimmer then becomes a radio receiver (with noise blanker, AGC, and a sharp variable-bandwidth filter you can control) and lets you hear that specific station live on the air. There's no need to wait and see what the station is sending, though, because CW Skimmer also displays all the text it has received from that station, so you immediately see exactly what that station has been up to. You get a single line display at the bottom of the window, or you can pop up a window to see more of the received text.

Aside from just being incredibly cool, this is quite useful in a couple of situations. It's ideal for a pileup, where many stations are calling a single station in an exotic DX location, and you also wish to work that station. With CW Skimmer, you can instantly visualize the pileup. If the program is able to receive the station that the DX station is currently working, you'll quickly pick out his callsign from the station list display. CW Skimmer helps with this by highlighting the signal report he will be sending to the DX station. In this way you can figure out where the DX station is likely to be listening, and be on that frequency yourself. CW Skimmer will even take care of tuning your transceiver to the selected frequency.

CW Skimmer is also great for contests. You can skip all the tuning around and looking for new stations to work. Just look at the screen and you can see where they are. Click and you're on their frequency. No sweat. It's so easy and powerful that the release of CW Skimmer has touched off a storm of controversy in the contesting community. It's almost like having a room full of second operators, all diligently tuning around on your behalf. Contest rules prohibit that kind of extra help, or put such team operations in a separate class, but currently the rules don't say anything about a computer program like CW Skimmer. This isn't the first time innovations have changed the playing field for contesters. Some contests will probably make changes to the rules. In other contests, it might well turn out that CW Skimmer or something like it will become just another part of a well-equipped competitive station.

If you've ever played with a computer program that receives Morse code, you may be skeptical. Computers are not as good as skilled human

continued on page 9

continued from page 8

operators at decoding Morse code. That is still true with CW Skimmer, but it does a remarkably good job. It certainly helps that nowadays a lot of the code you hear on the bands is sent by a machine and not with a hand key. Virtually everybody in a contest will be using a computer and sending very predictable, perfect code. In that situation, CW Skimmer can copy very reliably indeed.

There are two ways to hook up CW Skimmer. The easiest thing to do is hook it up exactly like any other "sound card" program, like the ones you'd use for PSK31 or RTTY. That is, you use a regular SSB/CW transceiver and connect its audio output up to the computer's sound card. This works fine, but it's limited by the audio bandwidth of the transceiver, which is of course designed based on human speech and hearing. With this kind of hookup, CW Skimmer can only hear what you would hear, in that 2.4-kHz chunk of the band that's within the transceiver's filters. That's enough to be useful, but wouldn't it be nice if you could see the whole band segment?

You can, but you will need to get that narrow SSB filter out of the way. You can't just turn off the filter, though. The circuits of the transceiver aren't intended to pass signals in that way. Your transceiver is overkill for this kind of monitoring, anyway. The narrow filter and related performance characteristics are most of what you're paying for in a ham radio transceiver. To simply sweep in wide swaths of the band, a much less complex circuit is sufficient. There are a number of low-priced SDR receivers on the market, and they all work fine with CW Skimmer. The SoftRock Lite II, for instance, is available as a kit for as little as $10! That's a single-band, receive-only receiver that works with any SDR program, including CW Skimmer. It hooks up to an antenna on one end, and to your sound card on the other, no other hardware required.

On the other end of the cost spectrum, you could get a dedicated SDR transceiver like the FlexRadio Systems Flex-5000C single-box SDR with computer built-in, starting at about $5000. That will get you some extra performance, of course, but the $10 SoftRock is already pretty good, thanks to the digital signal processing algorithms used in the software. The SoftRock can even be operated using exactly the same software as the expensive Flex-5000, which turns it into a full-featured receiver with panoramic display.

An interesting third approach is to use a regular transceiver but connect a SoftRock or similar SDR-based radio to a wideband IF signal from inside the radio. Some transceivers have a wideband IF output on the back panel, but most will require modification to bring the IF signal out. This configuration lets the inexpensive SDR radio take advantage of the front-end filtering on your main transceiver, and it automatically follows your transceiver from band to band.

Except for fully-integrated SDR radios like the Flex, your computer's sound card is an important part of the SDR system, whether for CW Skimmer or for general receiver applications. Its sampling rate will determine how large a band segment you can monitor at once. Built-in sound cards can generally sample at 48 kHz, which will give you almost 48 kHz of bandwidth, already twenty times the bandwidth of the SSB filtered audio from a transceiver. Higher-end sound cards can do 96 kHz or even 192 kHz, with proportional

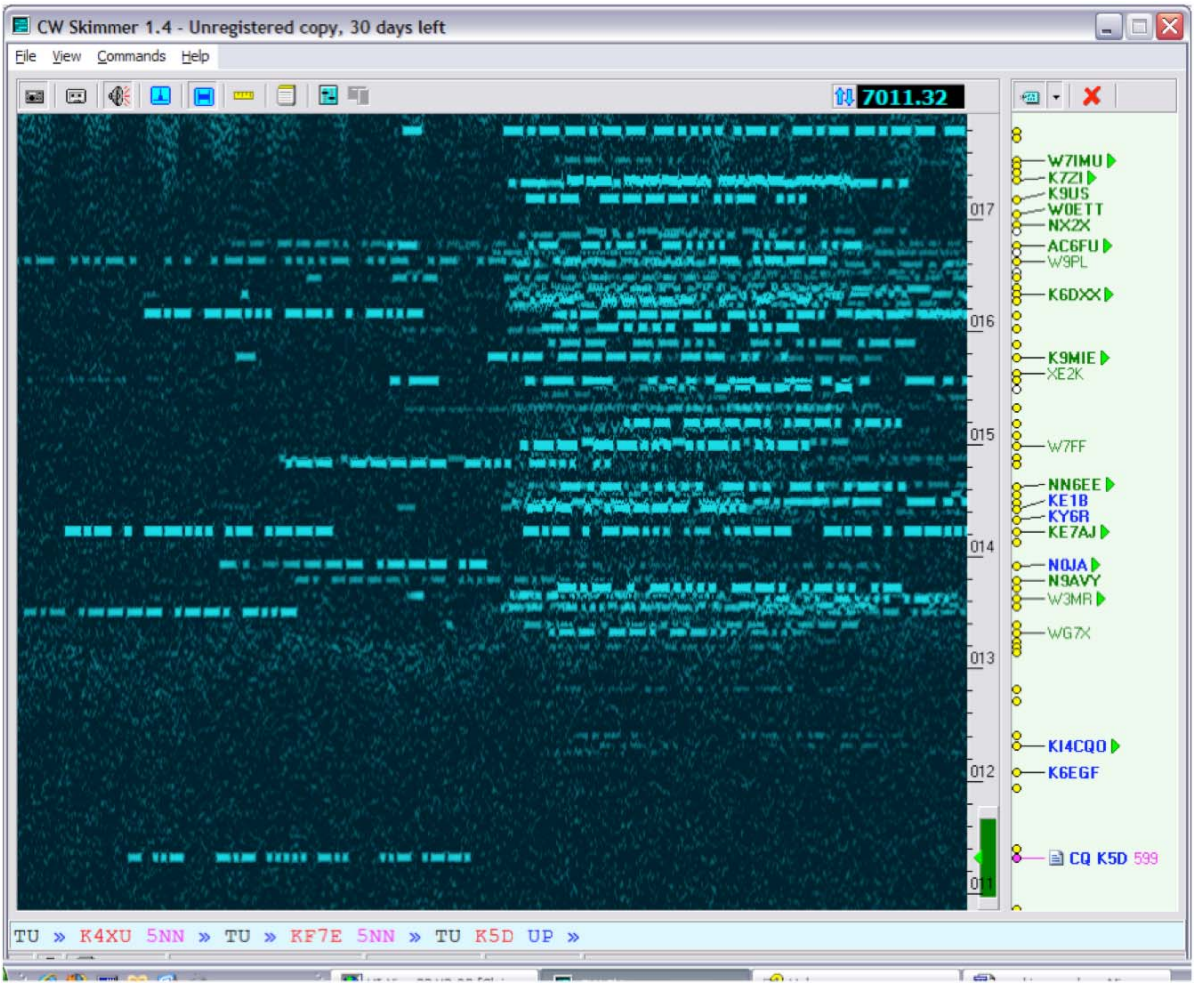
continued on page 10

continued from page 9

increases in bandwidth. Other aspects of sound card performance are also important. Try it out with what you've got, but if you want to buy a better sound card for SDR use, the best bet is to search the web and find out what other people are using successfully.

Right now the E-MU 0202 external USB sound card (about $130) is popular.

CW Skimmer costs $75, but the author allows a 30-day trial period at no cost. That's plenty of time to play with it and get so addicted to the advantages of SDR that you start shopping for a new SDR-based transceiver! Don't say I didn't warn you.

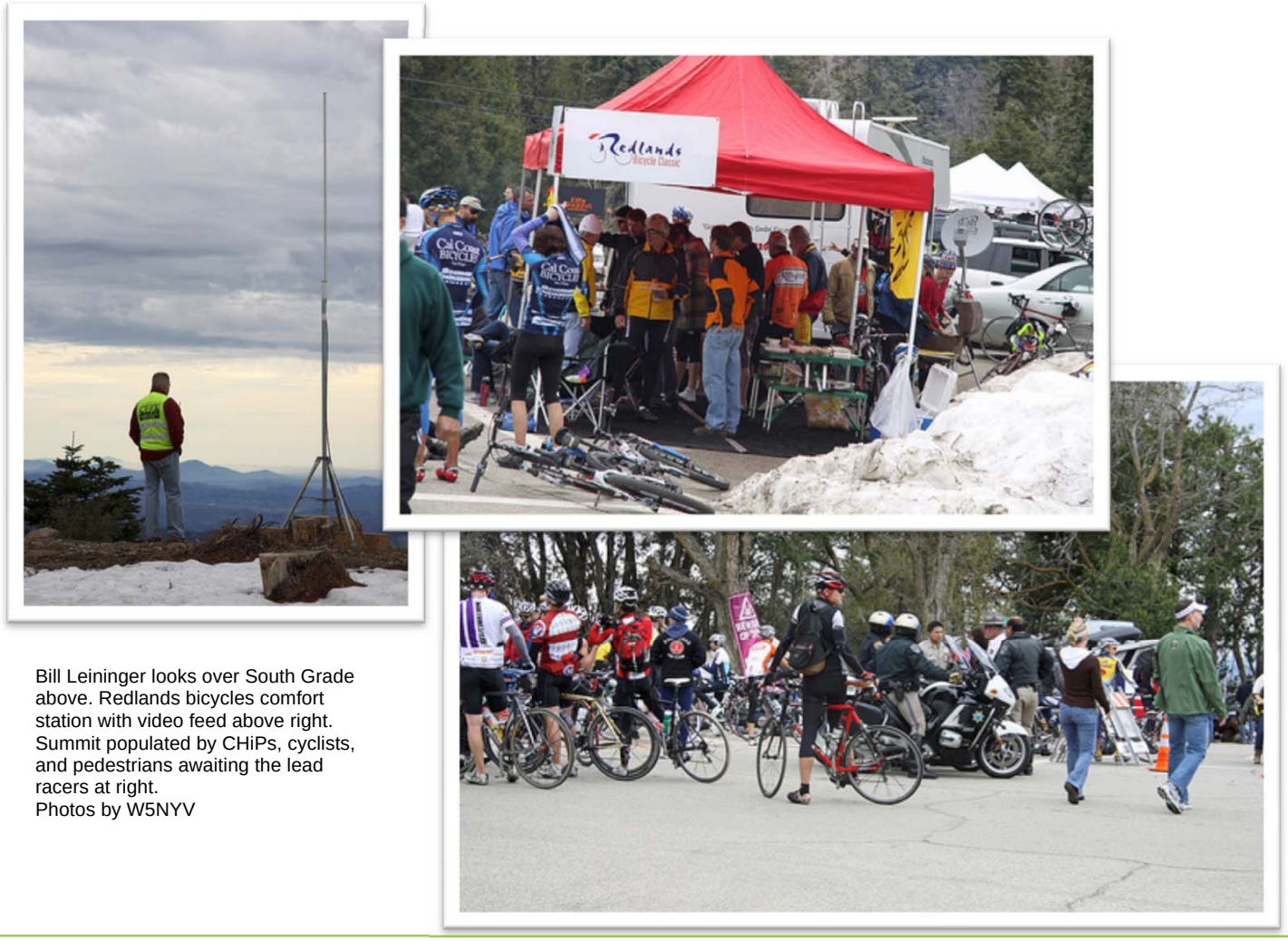


Above is CW Skimmer monitoring the pileup on K5D on Desecheo Island on February 16 on the 40-meter band.

At the bottom you can see the DX station transmitting "TU K5D UP", which means "thank you (previous station), this is K5D, listening for calls on frequencies above my frequency." Then as soon as he finishes, you can see dozens of stations jump in and call him simultaneously. You can also see a few stations mistakenly calling on top of the DX station.

Jim Egerton W6SST
Photos by W5NYV (left, center) and KB5MU (right)

A Few CERT Spring Exercise Photos



Bill Leininger looks over South Grade above. Redlands bicycles comfort station with video feed above right. Summit populated by CHiPs, cyclists, and pedestrians awaiting the lead racers at right.
Photos by W5NYV

SCOPE

P.O. Box 73
Vista, CA 92085-0073

Address service requested

PERIODICALS
POSTAGE
PAID AT
VISTA CA
92085-9998

Scope (USPS #076530) is published monthly by the Palomar Amateur Radio Club 1651 Mesa Verde Drive, Vista, CA 92084. POSTMASTER: Send address changes to SCOPE, P.O. Box 73, Vista, CA 92085. Periodicals postage paid at Vista, CA 92084. Dues are $20 per year or $35 per year for a family. Dues include a subscription to Scope.

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

Featured Program

Terry Runyon K3PXX will be doing the talk for the March meeting.

He will cover the role of different groups of Hams in emergencies. R.A.C.E.S., A.R.E.S.,C.E.R.T. Salvation Army, and especially the Palomar Radio Club.

APRIL 2009

SCOPE

A newsletter by and for the Palomar Amateur Radio Club of San Diego, California.
See SCOPE in color on our website at www.palomararc.org.

Above, contesters successfully work at W6HCD with K6QK Harv's trailer. See more photos on page 3 and 4.

146.730 Repeater Update

Evaluation by Art KC6UQH showed a crack in the ceramic substrate of the PA module. Soldering the broken trace brought it back to life. Art installed a new PA module and checked the mounting surface. According to Mike K6MRP, the repeater was back on the air 23 March 2009.

Save the Date!

Club Meeting
1 April 2009

Board Meeting
8 April 2009
7:00pm at W6GNI QTH.

EARS Auction
9 April 2009
7:30 p.m. at The Escondido Salvation Army, 1301 Las Villas Way, Escondido

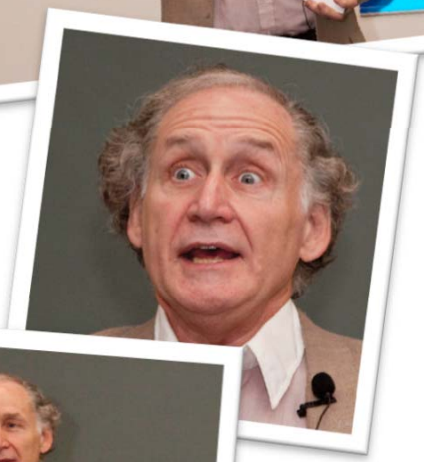
Electronic Delivery

You can choose! If you still want to get this newsletter the old-fashioned way, printed on paper and delivered to your mailbox, you can. But if you don't need the paper copy, you can save the club some money by getting your Scope online. As a bonus, the online version is in color!

You can always find the Scope on the web site. To help you remember to check the web site, you can sign up for the Scope-notice mailing list and get an email reminder each time a new Scope is posted. You can also choose to have the Scope emailed directly to you by subscribing to the Scope-PDF mailing list.

Go to www.palomararc.org and click on Newsletter.

To stop the paper delivery, notify Membership Chairman Al, W6GNI, at membership@palomararc.org, and include your callsign, name, and address just to be sure.



Club Reports

Got news? Send reports about your activities and things that you think other club members need to know to scope@palomararc.org.

March General Meeting

Terry Runyon K3PXX did the talk for the March meeting. Meeting photos at left and below by Paul KB5MU. Terry covered the role of different groups of Hams in emergencies. R.A.C.E.S., A.R.E.S., C.E.R.T. Salvation Army, and the Palomar Amateur Radio Club.

February Fold and Staple

WA5ACE Sonny KB6NMK Jo
W6GNI Al & Kathy
KB6YHZ Art

Membership Report

New Members Joining PARC WB6PIE, KI6SHB, N1ROE, WB6JHQ, KI6SBW, WA6RDB, and K6BKI. In addition, THREE past members reinstated their membership. Of course we welcome all members, new and "old", even "new" old timers.

We are always seeking helpers to encourage membership in the club, and to help retain the members we have when renewal time comes about.

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. If you have changed e-mail address, please let me know so we can send an e-mail reminder when your club renewal is due. In the near future, we will publish the last two letters of the calls of the Web SCOPE folks for reminders to renew (for those that we do not have current e-mail addresses).

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

April Showers

Find the words listed below

Agave, aloe, annual, arum, aspic, aster, avens, balm, bellis, briar, broom, Canterbury bell, chaplet, Christmas flower, clover, coleus, cosmos, datura, deutzia, Erica, flag, flora, geum, gorse, henna, iberis, iris, ixia, lilac, lily, linum, lupin, marsh marigold, may, Michaelmas daisy, mimosa, musk, nuphar, orchid, orchis, orris, oxlip, pansy, peony, petal, pink, poppy, rambler, rose, salvia, sepal, sesame, starwort, stock, thistle, thrift, tiger flower, tulip, viola, weed, weld, whin, wisteria, wold, xanthium, yucca, yulan

Special Challenge: Find the hidden bonus word revealed in the unused letters.

An avid group of PARC contesters have found the ideal site to light up the airwaves. N6KI/Dennis, NN6X/Paul, N6EEG/Dave, KY6LA/Howard and W0NI/Tom raised a 40m beam on K6QK/Harvey's (SK) trailer mounted tower at the QTH of W6HCD/Nash in Bonsall. What a fantastic site! We are going to have a bodacious signal on 40 meters said N6KI/Dennis. The long time QTH of W6HCD/Nash appears to be on top of the world with an unobstructed 360-degree view, no power lines and just an occasional bird to float overhead.

The trailer/tower has allowed the contesters to travel to several remote sites and quickly set up the 40m beam. Designed and built by Harvey Hiller the trailer was used at several PARC field day events and now owned by the contest team. No doubt some top scores will be logged from the site in the days to come.

Photos by W0NI

More on CW Skimmer

SDR Concepts In Action

By Paul KB5MU

Last month I wrote about CW Skimmer, a program from VE3NEA that lets your computer copy every Morse code signal on a band. I predicted that contest rules would be changed to cover programs like CW Skimmer. After a little more research, it turns out that my prediction has already come true.

As you might guess, the ARRL has a Contest Advisory Committee to study issues like this one. There's a representative from each division plus a few liaison people from ARRL headquarters. They made the following recommendations:

1. *Multi-channel decoders should be allowed in ARRL contests.*
2. *Multi-channel decoders should not be allowed in the Single Operator category.*
3. *Use of information gathered by multi-channel decoders during off times should not be permitted.*
4. *The Single Operator Assisted category in ARRL contests should be renamed Single Operator Unlimited.*
5. *Rules for remote receivers apply to remote multi-channel decoders, including the exception for spotting nets.*
6. *Multi-channel decoder spots should not be banned from spotting networks.*
7. *Robot QSOs (contacts made by automated means independently of a human operator) should not be permitted.*

You can read the entire report from the ARRL Contest Advisory Committee at http://www.arrl.org/announce/reports-2009/january

The organizers of the CQ World Wide DX Contest reached a similar conclusion. The rules for the 2008 contest included this provision:

> *"QSO alerting assistance of any kind (this includes, but is not limited to, packet, local or remote Skimmer and/or Skimmer-like technology, Internet) places the entrant in the Single Operator Assisted category."*

The CQ committee apparently wasn't worried about using the word "assist" to describe what CW Skimmer does for the human operator, or about trying to define exactly what it means to be "Skimmer-like".

If you want to read nearly endless discussion about the consequences of allowing CW Skimmer to be used in contests, and about everything else related to contesting, the CQ-Contest mailing list at www.contesting.com is a great resource. You'll find quotes like these:

> *"CW Skimmer is a major slide down the slippery slope to automatic station contesting." — Steve K9ZW*

> *"For many, especially those who feel that "packet ruined contesting" or that "packet ruined DXing," this may turn out to be the "packet ruined contesting" of the 21st century." — Doug KR2Q*

> *"Whether you are for this type of software or against it, one thing is for certain.... The face of contesting and dx'ing is about to be changed. Whether it is for good or bad remains to be seen." — Jack K4SAC*

> *"I think this sort of stuff is great for the hobby — it shows that we continue to embrace technology for communicating through radio waves. It will be interesting to see where this program takes the hobby." — Scot, K9JY*

> *"As the [ARRL DX] contest went on (during the EU opening when there was stuff to work), I had to wonder why I was even bothering to tune on the S&P radio. If someone was calling CQ and we needed them, the skimmer almost always found it before I did. Sometimes the skimmer would go down, or the band would change in a way that the skimmer didn't have propagation anymore...especially during Asian openings. And the skimmer busted things. But it was extremely effective most of the time." — Pat N9RV*

continued on page 8

Personal equipment ads are free to members and will run for at least one month.

Send your ad to scope@palomararc.org

Club Classified Advertisements

Commercial ads are $2 per column inch per month. We will adjust your ad copy to conform to the number of inches bought.

Minutes of the Palomar Amateur Radio Club Board of Directors Meeting held on February 11th 2009

---Treasurer's Report
Georgia KI6LAV distributed the treasurer's report for December. Total Assets were $11,096.14. The prepaid dues were $6321.00. Elimination of unused phone lines was discussed. A stop order will be placed on the unused lines. The safety deposit box in Escondido was opened and inventoried. All items (club papers) were scanned and stored by Georgia KI6LAV. The Post office accounts and amounts were reviewed and discussed. Loren AD6ZJ made a motion to approve the treasurer's report and was seconded by Mike K6MRP. The motion carried.

Discussion Items
1. K6DEX variance – Bob, K6DEX needed to go to the city of Oceanside council to get his antenna approved. The city was requiring a NEC plotting report. This report was available through the ARRL. The ruling was in favor of Bob but he still needs to get a soil test conducted.
2. PARC special calls. W6P, W6A, W6R and W6C will be on the air during the month of February
3. ARRL ARES board election is coming up March 14th at Scripps Memorial Hospital
4. San Diego DX club has put together a legal response to the city of San Diego's new ordinances on antenna towers. Does PARC need to do anything in this regard? Not yet asked.
5. Scope articles needed. Cutoff date is the 18th.

Future Topics:
-April – Lin Robertson KJ6EF – Vintage broadcast radios

Membership Report: Presented by Al W6GNI
Current club membership is 351.

Repeater Site/Technical Report: Presented by Mike K6MRP
- The repeater site is cold with lots of ice. This time of year the power outages can be for several hours. The site had a 9 hour outage this week. The "P" was reset earlier in the day but we were still on battery power. Discussion – should we rest the "P" if power is still out? At the last club meeting there was a discussion about changing the deviation. While we discussed the issue, no change was made. A C02 fire extinguisher is needed at the site. Mike K6MRP made a motion to purchase a CO2 fir extinguisher for the shed for $142.00. Seconded by Paul KB5MU. The motion passed.

Old Business:
-Field day – Mark Baldwin will check on the baseball fields and Bradley Park as a possible field day site. Actively looking for a good site.

New Business:
- Repeater usage by David Hieser. Sunday February 22nd for coordinating CERT operations during the bicycle race. PARC board agreed to let the operation use the 147.130 repeater (PL107.2) for Saturday the 21st and Sunday the 22nd as needed. Loren AD6ZJ will inform them on the authorization to use the repeater.

continued from page 5

Contesters will also be interested in the potential for CW Skimmer to be used by contest organizers to help with enforcing the rules. CW Skimmer can record everything on an entire ham band for the full duration of the contest. It wouldn't be too hard to place a few CW Skimmer stations at strategic locations around the country or around the world, and record virtually everything that happens in the contest. This information could be analyzed extensively after the contest, and some kinds of cheating would be easy to detect.

For the rest of us who don't organize contests, check out skimmer.dxwatch.com. It's a database on the web that is fed by many stations around the world, each running CW Skimmer to survey the bands and feed information about what stations are heard to the central server. Where a PacketCluster only reports on stations deemed to be of special interest by other DXers, this "reverse beacon" arrangement reports on every station heard calling CQ. Or misheard. As I write, the web page shows both W8AC and W8ACM on the exact same frequency at the exact same time. One of these is probably a mistake CW Skimmer made in copying the callsign.

The widely-respected Pakistani programmer Achmed, AP1RL recently released the next big innovation in amateur radio automation: SSB Skimmer. This program does for voice communications what CW Skimmer does for Morse code. Using the latest in voice-recognition technology from software giant IBM, it is able to recognize CQ calls and a wide spectrum of special contesting procedures and shortcuts. You can configure it to watch for keywords of special interest to you, so you need never again miss an exciting discussion about the San Diego Chargers or the AIG bail-out.

Download it now from www.palomararc.org/tech/ssb-skimmer.html – it's free!

Special Event Report

During the month of February PARC celebrated its 73rd anniversary. As part of the celebration several members were issued special 1x1 call signs. Each of 4 1x1 calls was used in the four consecutive weeks during the month. By working all four stations you were able to spell PARC with the suffixes. These stations were active on the repeaters as well as HF and VHF simplex but each call was only on for one week. There will be a special QSL card for stations that worked all four and spelled PARC. 73 Loren AD6ZJ.

PARC Anniversary Call for Volunteers

The Palomar Amateur Radio Club began in February 13,1936 as North San Diego Radio Club. The name changed to Palomar Radio Club prior to the June 1936 publishing of QST. Association with ARRL began on May 8, 1937. February 2009 marks our 73rd anniversary. Two more years will be our 75th and we would like to do something very special.

First, we would like a volunteer to lead the 75th anniversary organizational effort. We would like to see events throughout the year take advantage of our anniversary theme.

Second, we would like to hear from all of you that may have any stories, memorabilia, documents, photographs, and other items that could be presented and shared at our 75th anniversary events.

Please contact board@palomararc.org or any officer at a meeting to help with making our 75th anniversary year special.

Thank you for your participation and support.

Dennis KD6TUJ and Michelle W5NYV

Antennas at 46ft and on the ground at W6HCD. Photos from Howard KY6LA.

SD100 Course Data Communications Viability Testing - March 20-21, 2009 Results

By Andre Hansen K6AH, Dean Jacobson W6DBJ, and Paul Schmidt K6PKS

Checkpoint	Monument Pk KA6DAC-1 145.050"	Stephenson Pk VHF Digipeater	Direct
Camp Cuyamaca	X(h) na	Camp Cuyamaca	X(h) na
Paso Pecacho	X	X	X(s)
Big Bend	X(h)	X	X(s)
Milk Ranch	nt	nt	nt
Pedro Fages	-	-	X(sy)
Sunrise Trailhead	X	X	X(sl)
Sweetwater Bridge	nt	nt	X(lc)

Notes:

X = Data connection confirmed viable
- = Data connection not viable
s = Locate antenna at multipath maximum
h = Results realized at 35-50 watts
l = Results realized at 1-5 watts
c = Antenna location somewhat critical
y = High-gain (i.e.. Yagi) antenna required
na = No applicable
nt = Not tested

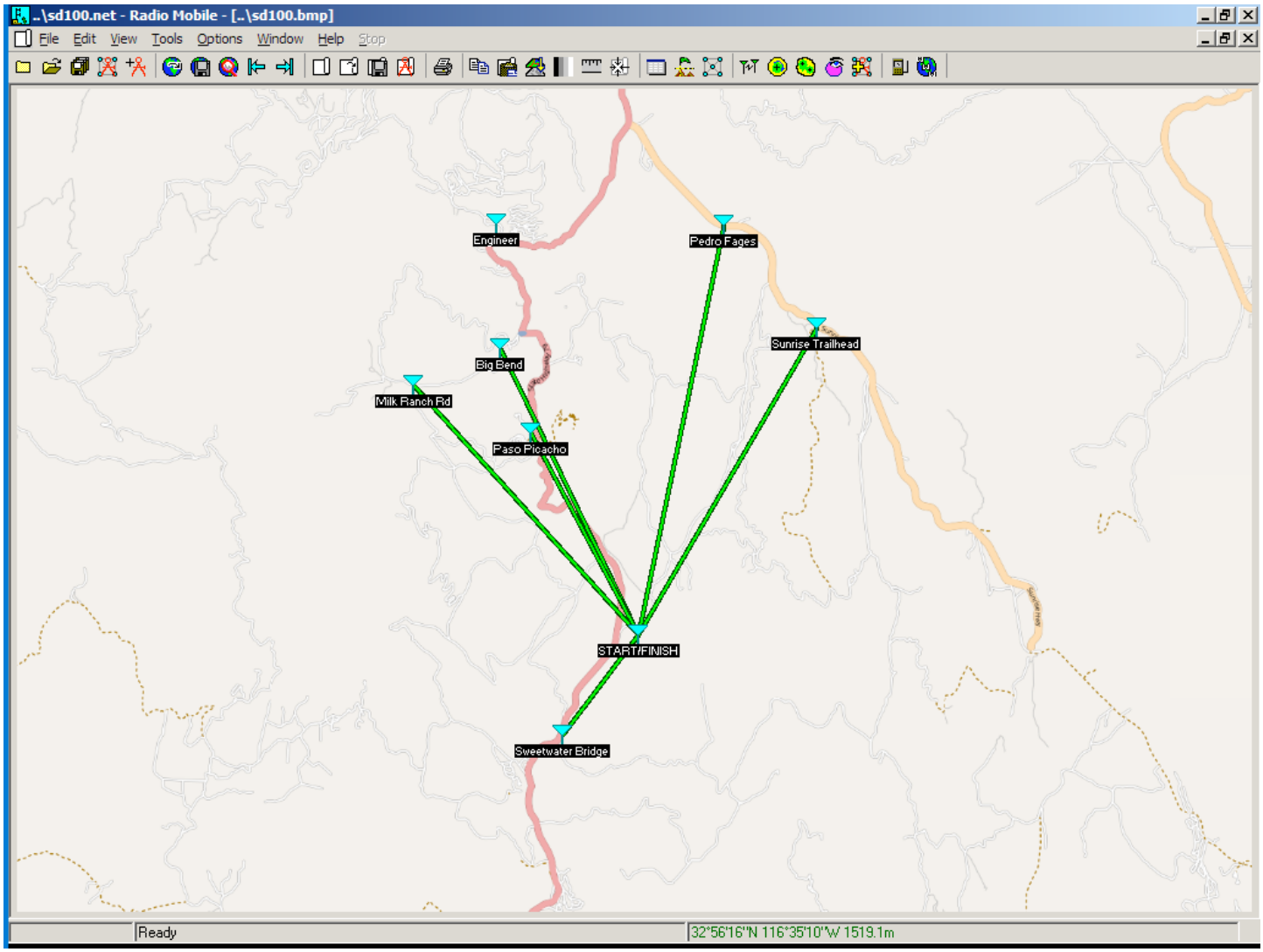
Comments:
-Direct connections are between Camp Cuyamaca (Start/Finish) and other checkpoints
-Direct results surprising, but consistent with Radio Mobile predictions.
-North Pk (directly North of Lake Cuyamaca) should be validated as a suitable digipeater site

-"Direct connections are highly dependant on finding multipath maximums. This is done by having Camp Cuyamaca give a long count while moving the antenna 5 to 20 feet. Stop at the highest S-meter reading. The difference between minimum and maximum can be greater than 20db"
-"Stephenson Peak was not scientifically selected and thought to be move advantageous for PCT50."

-Unless otherwise noted, all tests were run at 10-15 watts
-Access restrictions prevented test at Milk Ranch, but data connection presumed to be incrementally better than results at Big Bend.
-Original Big Bend Lat/Lon found to be in error. Was 32'58'30" W 116'36'12" N, corrected to 32'58'57" W 116'34'96" N

Conclusions:
-VHF direct connections to the database should be used as a primary data path
-A digipeater overseeing the course could establish a second data path. Note that this does not need to be strategically placed... since all checkpoints can already communicate directly with Camp Cuyamaca, a digipeater placed above the camp should also be reachable by all checkpoints.

SD100 Course Data Communications Viability Testing - Map



Below, Harv K6QK (SK) is operating one of the trailers at PARC Field Day.

Northern Cal DX Convention

The theme for the 60th Annual International DX Convention, our Diamond Jubilee year, is 60 years of DX history and Looking Forward to the next 60 years of DXing. This year the Northern California DX Club has gone all out to bring you an outstanding program, terrific $35,000 raffle, great speakers, good food, a wonderful YL tour and short waits to sign up for banquet seating.

http://dxconvention.org/

Loren AD6ZJ

SCOPE

P.O. Box 73
Vista, CA 92085-0073

Address service requested

PERIODICALS
POSTAGE
PAID AT
VISTA CA
92085-9998

Scope (USPS #076530) is published monthly by the Palomar Amateur Radio Club 1651 Mesa Verde Drive, Vista, CA 92084. POSTMASTER: Send address changes to SCOPE, P.O. Box 73, Vista, CA 92085. Periodicals postage paid at Vista, CA 92084. Dues are $20 per year or $35 per year for a family. Dues include a subscription to Scope.

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

Featured Program

There will be a program at the general meeting at 7:30pm on 1 April 2009 at the Carlsbad Safety Center, 2560 Orion Way, Carlsbad.

Julian Starfest Needs Volunteers

http://www.julianstarfest.com/volunteers/volunteers.htm
http://www.julianstarfest.com/
http://www.celestron.com/blog/index.php/2008/08/12/julian-starfest-2008/
http://julianstarfest.blogspot.com/
http://thebestplacesinsandiego.com/julian-overview/

MAY 2009

SCOPE

A newsletter by and for the Palomar Amateur Radio Club of San Diego, California.
See SCOPE in color on our website at www.palomararc.org.

DON'T LET THIS HAPPEN TO YOU

READ ABOUT WHAT HAPPENED AND HOW YOU CAN PREVENT IT ON PAGE 10.

Save the Date!

Club Meeting
6 May 2009
Field Day Planning

Trail Run
9 May 2009
Pacific Crest Trail 50 trail run. Digital communications provided by amateur radio volunteers.

Board Meeting
13 May 2009
7:00pm at W6GNI QTH.

Electronic Delivery

You can choose! If you still want to get this newsletter the old-fashioned way, printed on paper and delivered to your mailbox, you can. But if you don't need the paper copy, you can save the club some money by getting your Scope online. As a bonus, the online version is in color!

You can always find the Scope on the web site. To help you remember to check the web site, you can sign up for the Scope-notice mailing list and get an email reminder each time a new Scope is posted. You can also choose to have the Scope emailed directly to you by subscribing to the Scope-PDF mailing list.

Go to www.palomararc.org and click on Newsletter.

To stop the paper delivery, notify Membership Chairman Al, W6GNI, at membership@palomararc.org, and include your callsign, name, and address just to be sure.

Club Reports

Got news? Send reports about your activities and things that you think other club members need to know to scope@palomararc.org.

April General Meeting

Andre Hansen K6AH did the talk for the April membership meeting. Meeting photos at left and below by Paul KB5MU. Andre explained and demonstrated the Runner Tracking system that will be used in the race.

April Fold and Staple

April SCOPE Fold & Staple Crew
W6GNI Al & Kathy, KB6NMK Jo

Membership Report

New Member Joining PARC: N1CUX. Five others reinstated their memberships after a delay. Please welcome this new member, on the air, and in person.

We now have about 70 members that have decided to receive their newsletter, the SCOPE, on line, saving the club the cost of printing and mailing the SCOPE. 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 will print the last two letters of the calls of those that have "expired".

Obviously, there may be other members in good standing with the same ending call letters, but we didn't think it proper to identify one by printing the whole call.

The list: KP, VN, JS, AY, JG. Members with calls ending in those letters, please check to see if your membership has run out! (Those 5 ran out in February and March 09) Please!!

Al W6GNI

Above, Georgia and Dave man the auxiliary demo stations at the back of the room

Antenna Story

By Dennis KD6TUJ

Putting up a half wave wire antenna can be interesting. Cutting an 80m antenna should be easy, just double the 40m size, right? So being that a 40m wire uses 33 feet on each leg, double is 66 per leg.

I went to Radio Shack to pick up some light wire (75 ft 24 gauge speaker wire) and a SO 239 connector for less than $15.00

Next, I went home to cut and throw the wire up. I checked it, and it worked great------at 3.2MHz, not centered at 3.85. I cut 6 inches off per side and rechecked. Then, I did it again. No big move. OK, I pulled out the calculator. 468/3.85=121.55 feet. A little different than 132 feet! Oh well, I measured to 61 foot per leg and checked. Not bad, close to 3.75. A couple of snips and another check later and it's close enough to 3.85 MHz. A few days later I put up a 40m inverted V. It was much easier to check the calculator before wasting time.

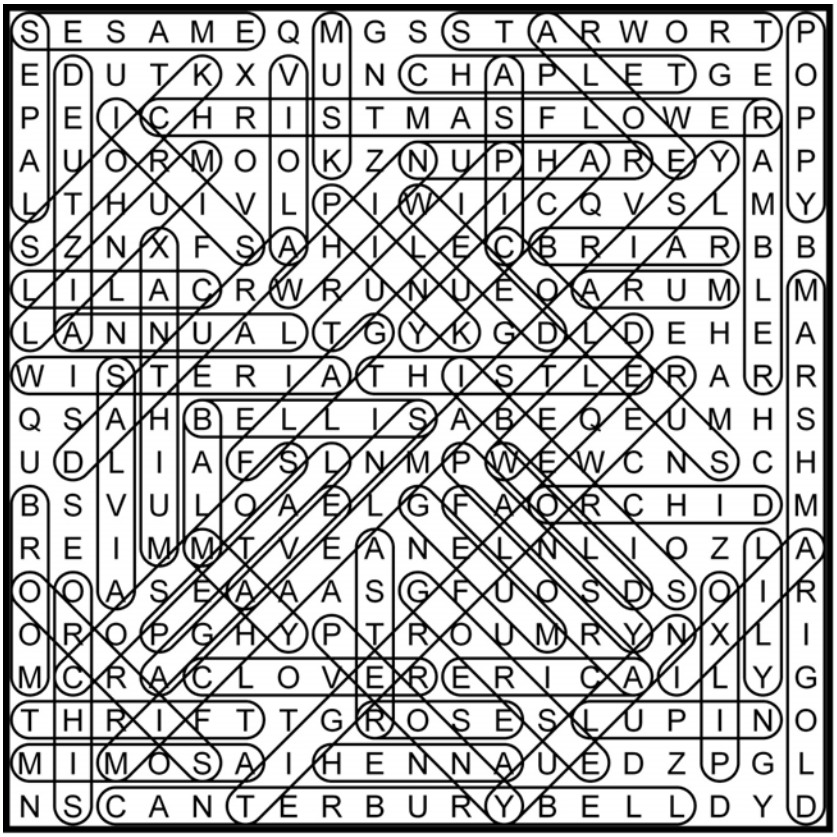
The 80m was put up at 30' above flat terrain and it surprised me to hear Georgia on one night. The 40m listened much better so I was listening on 40m and switching to 80m to transmit. It worked pretty good! Works better when you DO switch to 80m. Made the contact, but I think the transceiver was a little unhappy. I noticed after I finished. OOOPS!

Have fun on the Air! Dennis KD6TUJ

May I Puzzle You?

John's hybrid car, with a dual-channel mobile radio, traveled North on a U.S. Interstate highway.

Five hours after passing mile marker 100, traveling at a steady 60 miles per hour with no stops, it passes mile marker 250. How is this possible? (April solution at right)



Bonus word: ham

Vandals Strike Bay Area Infrastructure, Hams Provide Communications Support

By Ken Easton Excerpts from ARRL.org, the Santa Cruz Sentinel and the San Jose Mercury News

In Santa Cruz County, District Emergency Coordinator Cap Pennell, KE6AFE, was awoken that Thursday morning just after 5 AM by uniformed police at his door. Sent by Dominican Hospital President Nanette Mickiewicz, the police officers escorted Pennell to the hospital for a brief on this situation: The fiber optic lines that had been cut in San Jose had affected the Santa Cruz hospital's communications infrastructure, cutting off communications from the hospital to the outside world. Santa Cruz is located on the northern edge of the Monterey Bay, about 72 miles south of San Francisco.

Hundreds of thousands of AT&T, Verizon, Nextel and Sprint customers with land lines, cell phones and Internet service were affected. The loss of land line, cell phone and Internet service was amplified by the fact that multiple carriers send traffic on the same fiber optic cables. For example, Verizon said more than 50,000 household land lines were affected as well as an unknown number of cell phone connections.

The incident revealed what many experts have known for years: the humdrum infrastructure behind daily routines is extraordinarily vulnerable to random accident or deliberate mischief.

"While I was meeting with hospital department heads, Bob Wolbert, K6XX, had started our ARES Resource Net on the W6WLS/W6MOW linked repeaters," Pennell told the ARRL. "During the briefing, the hospital determined to implement HICS/SEMS for this emergency. There hadn't been telephones or Internet anywhere since about 2:30 AM. The hospital's phone system did work, but only within the hospital. Their internal computer local area network wasn't working either, so they were instantly on a 'paper system.'"

By 6:15, Pennell said they had established tactical radio links on the K6BJ/KI6EH linked repeaters between the Dominican Hospital Emergency Operations Center in Santa Cruz and the Watsonville Community Hospital emergency room; Watsonville is about 15 miles south of Santa Cruz via the Pacific Coast Highway. "We established HEARNET 155.385 simplex between both hospital ERs and County 911; HEARNET is the Hospital Emergency Administrative Radio Network. Once HEARNET (ER staff) and K6BJ repeater (hams) were staffed and operating at both hospitals, I left the hospital to become our initial ham operator at the County Emergency Operations Center and operated as ARES/ACS shift supervisor from there for the rest of the day," Pennell reported.

Throughout the day, Pennell said that hams -- including some in Monterey County who had been working telephones -- helped dispatch ambulances, conferred with the Poison Center on a children's poisoning case, ordered replacement blood supplies for two hospitals from San Jose Red Cross, relayed a complex major "whole hospital" day's food order to the supplier out of county, tracked down various doctors for emergency consultations and shared status updates from our area. "We did all this while in unity with the County government, public safety agencies and California Emergency Management Agency's Coastal Region," he said. "Greg Smith of Cal-EMA spent the day in the Santa Cruz EOC with us." All service was restored by 12:15 AM on Friday, April 10.

Gilroy City Administrator/Director of Emergency Services Thomas J. Haglund expressed his thanks to the Amateur Radio operators who assisted with communications support, saying, "This particular emergency situation underscores that our reliance on technology should be balanced with maintaining the very types of capabilities that you provided to us. Communication is an obvious key

Fiber Cut *continued on page 9*

Transceivers Become The Standard Of Amateur Radio

By Ron K2RP

As we've discussed, until the 1960s, almost all ham stations on the HF bands consisted of separate receivers and transmitters, plus needed accessories. In many cases, receivers needed external speakers, transmitters required outboard VFOs, and numerous other peripherals were commonly used.

Now, of course, virtually all HF stations consist of transceivers, which not only provide both transmit and receive functions, but many circuits are shared. Some early combo units were not true transceivers, in that transmit and receive functions were completely independent, perhaps sharing only the power supply.

The major factor that led to the practical development of the modern transceiver was the rise in popularity of SSB over AM. Before SSB became the predominant mode, frequency was controlled by a VFO, either separate from or integral to the transmitter, or by a crystal for a specific frequency. The fact that our bands are harmonically related (3.5x2=7, 7x2=14, 7x3=21, etc.) meant that a VFO operating on one or two frequency ranges could be multiplied in multiplier stages to produce output on the desired band. This system had the advantage of simplicity, but had some distinct disadvantages. First, the fact that on the higher bands the frequency of the oscillator was multiplied several times made it difficult to build a stable, chirp free oscillator, since any imperfections and drift were multiplied as well. Break-in operation required the oscillator to be keyed, since it would be heard in the receiver if it were to be kept running. If the oscillator were to be kept running for stability, then there needed to be some provision for turning the oscillator on and off when switching between transmit and receive in the separate units.

When SSB became popular, a new system emerged. The sideband signal needed to be generated at one frequency regardless of band in use. It became common practice to generate the SSB signal at 9 MHz, (then called 9 Mc.!), and mix it with a VFO running at 5 to 5.5 MHz, in the same manner as a superhet receiver. Notice that the sum of the frequencies covered 14 to 14.5 MHz for the 20 meter band, and the difference covered 4 to 3.5 MHz, for the 80 meter band. By selecting the proper tuned circuit, both bands were covered. Now, the oscillators can both run continuously, and the mixer stage can be keyed. Thus, the advantage of not keying the oscillator can be joined with the benefit of break in operation, since neither oscillator is on the operating frequency! Additionally, since the VFO covered 5 to 5.5 MHz no matter the transmitting frequency, the VFO could be made linear resulting in the same tuning rate on all bands. Note that the SSB signal will be inverted with this system; that is, the lower sideband will be generated on one band and upper sideband on the other. Thus began the tradition of lower sideband on 80 and 40 and upper sideband on the higher bands. Many early transmitters of this type tuned high to low on some bands, and low to high on others.

To cover the other bands, all that was needed was a second oscillator, usually crystal controlled, and mixer as in a double conversion receiver.

I believe it was Collins, who introduced the milestone KWM1 transceiver in 1957, who pioneered this concept. They used the same oscillators and mixers that generated the transmit signal to control a receiver, enabling the transmitter and receiver to be exactly on the same frequency at all times.

This system was the genesis of all modern transceivers. The drawback was that the circuitry was complex and expensive. In the early 60s, a few companies offered single band transceivers, such as Swan, with their 120, 140 and 175 models, soon followed by Heathkit's HW12, HW22, and HW32 models. Heath in particular was responsible for the transceiver boom, as their monoband kits were priced at only $120, plus power supply. Both AC and DC (mobile) supplies were offered, with the AC supply selling for $40. Compare this to the contemporary KWM2 at $1150, plus $115 for an AC power supply. This was for a 5 band unit, compared with the KWM1 which covered only

Transceivers *continued on page 8*

Personal equipment ads are free to members and will run for at least one month.

Send your ad to scope@palomararc.org

Club Classified Advertisements

Commercial ads are $2 per column inch per month. We will adjust your ad copy to conform to the number of inches bought.

Minutes of the Palomar Amateur Radio Club Board of Directors Meeting
11 March 2009

---Treasurer's Report
Georgia KI6LAV distributed the treasurer's report for February. Total Assets were $11,379.80. The prepaid dues were $6186.00. The club's self insurance at the site was discussed. Loren AD6ZJ made a motion to approve the treasurer's report and was seconded by Paul, KB5MU. The motion carried.

Secretary's Report
Loren AD6ZJ presented the February Secretary's report. A motion was made to accept the minutes as amended (typos and other grammatical corrections) by Paul, KB5MU and seconded by Mike K6MRP. Motion carried.

Discussion Items
1 – MARC TOUR DE CURE 447.000 Use 4/17, 18 – OK to use – Loren to send OK to Frank Littlebury KE6WOE.
2 – Ham club Info for AB9IF – Should we send them info – No the ARRL does fine
3 – Scout Fair 4/18 – At Qualcomm Stadium – Club members should be encouraged to help
4 – New repeater firmware with voice – No voice upgrade at this time

General Meeting: April meeting - Andre K6AH Radio runner tracking

Future Topics:
June: Monica Zech
Lin Robertson KJ6EF – Vintage broadcast radios
We need to find more Amateur radio related topics for our meetings. Ideas are welcomed

Membership Report: Presented by Al W6GNI
Current club membership is 353. 60 members are now choosing to get the scope online only.

Repeater Site/Technical Report: Presented by Mike K6MRP
- Eric Thompson KA6UAI has removed his repeaters off the site. The PARC tower now looks lopsided and should be re-balanced. We need to formally end the contract with Eric. Loren will review the original contract.
- The repeater phone had an outage and it turns out the line is in Stan's name. We should see if we can transfer the account without incurring extra charges.
- There were many broken branches from the latest round of storms. Mike took several truckloads of branches down the hill.
- The ID is out on the ATV repeater and needs to be shut down until repaired.

New Business:
-
OLD Business:
- Paypal on the PARC website– The PARC Paypal account - we discussed various page options for using the paypal links within the PARC website for annual dues and donations.
- 3905 Century club eyeball – no new items decided – several early planning items passed along. Will put together a flyer for interested PARC members.
- Field day –Bradley Park is out as a possible field day site. Actively looking for a good site.
- Testing at field day is possible depending on what VE personnel are willing to run it.
- SANDARC representation – we need to get members to represent PARC. Those interested should contact Dennis, KD6TUJ.
- SDGARES vote is coming up on the 14th of March. Must be a member of ARES and ARRL to vote.

Motion to adjourn made by Loren AD6ZJ and seconded by Georgia KI6LAV. Motion carried at 9:15 PM

Transceivers *continued from page 5*

20, 15, and 10 meters. A good case can be made for the argument that Heathkit's HW100 and HW101, and the SB100, 101, and 102 5 band models were the units that sparked the transition to SSB over AM and transceiver over separate transmitters and receivers. In almost every way, cost, performance, space requirements, and versatility, the Heathkits were far superior to the competition. They were probably Heath's most successful amateur kits, and more were made than any other transceiver in history. They were followed by the slightly more sophisticated SB series of transceivers, and SB series of "separate" radios. By the late 60s, it seemed that there were more Heathkit SSB rigs on the air than all other brands combined! Over 40 years later, it's still not unusual to hear these rigs on the air. Pictured are the lower cost HW100 and HW101 models. The HW100 (below) was introduced in 1968, and advertised as the "world's fastest selling transceiver."

At only $250 (plus $40 AC power supply and a speaker), it represented a great value, and enabled thousands to enter the world of SSB. Unlike the single band units offered previously, the HW 100 and 101 offered full coverage of the 80 thru 10 meter bands (10 meters covered in 4 segments), selectable sideband, and CW operation. CW sidetone, 100 Hz calibrator, VOX, and PTT were included.

The HW100 was followed by the HW101 in 1970, and production continued for an astounding 13 years! Estimates are that 40,000 were built, and many are still on the air. Several small changes were made, notably better receiver sensitivity, better "feel" for the tuning mechanism, and availability of a switchable CW filter option. This was by far the most popular radio that Heath ever produced, and the last tube type rig Heath offered. Below is a picture of the HW101.

PARC Anniversary Call for Volunteers

The Palomar Amateur Radio Club began in February 13, 1936 as North San Diego Radio Club. The name changed to Palomar Radio Club prior to the June 1936 publishing of QST. Association with ARRL began on May 8, 1937. February 2009 marks our 73rd anniversary. Two more years will be our 75th and we would like to do something very special.

First, we would like a volunteer to lead the 75th anniversary organizational effort. We would like to see events throughout the year take advantage of our anniversary theme. Second, we would like to hear from all of you that may have any stories, memorabilia, documents, photographs, and other items that could be presented and shared at our 75th anniversary events.

Please contact board@palomararc.org or any officer at a meeting to help with making our 75th anniversary year special. Thank you for your participation and support. Dennis KD6TUJ and Michelle W5NYV

Working W6P and W6A

By Conrad KG6JEI

With my busy schedule I am not able to get much time on the radio. However, I caught W6P, the Palomar Amateur Radio Club special event station, on the repeater on the way to the monthly club meeting, I never managed to hear W6P on 20m when they went to that band. I thought I was just too early to catch him. No harm – off I went to dinner, to solve the problems of the world.

W6A was met in person at the "Valentines Day Food Massacre" (which did not occur on valentines day). It was a simple affair. W6A announced he would start on 10 meters later in the evening.

I made it home in time to mount the 10m stick, the car being the only station with HF availability.

W6A was found coming in loud and clear. Of course, being in the county, this should all be expected.

W6A was convinced to work on 6m, 10m, 20m, 40m and 80m. All were strong contacts, although the lower in band we were, the more trouble we had in hearing each other with less distinct voice quality. Good contacts were made all the same and W6A went on his way to work someone else.

Two weeks later I happened to be at Ron N6XT's house after the North County Monthly Lunch. I had wanted to load his towers on a flatbed when he wasn't looking but he wouldn't turn his back on them! -- Oh well, another time I'm sure!

Eventually we proceeded to discuss ignition noise on trucks and a side-by-side signal comparison was done between his Screwdriver and my Hamstick mount.

A station, the call I do not remember, was heard S7 on Ron's rig and not at all on mine. Further talks about fuel pump RFI proceeded, but further testing would have to be done at such a time as when the truck could receive a signal.
The next day the antenna was to be checked for resonance and the coax for shorts, however this procedure was interrupted before it began. The radio was found to be connected to the tuner, but the tuner was found not to be connected to the antenna coax. Such a shame! This might explain why I never was able to hear W6R.

Hope to hear you on the air, now that the coax is attached. Oh look, the QSL cards just arrived!

Fiber Cut *continued from page 4*

to adequately responding to any emergency and the efforts of the Mutual Aid Communicators and the Gilroy Police VIP's provided the necessary communication and public visibility in this instance and demonstrated just how important your training and skill is to our community. Thank you very much for your dedication and expertise."

Gilroy Police Chief Denise Turner echoed Haglund's comments: "We truly appreciated all of your help during this challenging event! Each of you played a key role in a successful operation. I feel better knowing we have dedicated volunteers like you that will come to our aid in time of need! Thank you!"

About 25 operators were handling the radio traffic while another 50-60 had signed up to fill in when other volunteers got tired.

In an era of homeland security, when a few vandals with a crowbar can practically disable communications in Silicon Valley, amateur radio emergency response to manmade disasters can be as important as the response to natural disasters. Are we ready in San Diego County if this happened here?

The Risk of a Temporary Setup

By Michelle W5NYV

On a busy morning just a few weeks ago, I turned on the 2m radio early in the morning in order to listen to the traffic on the repeater. The radio, a D710, sits on top of an Astron power supply on the back corner of a table in the lab. This table is near a window that overlooks the vegetable garden. In between the table and the window is a terrarium full of carnivorous plants.

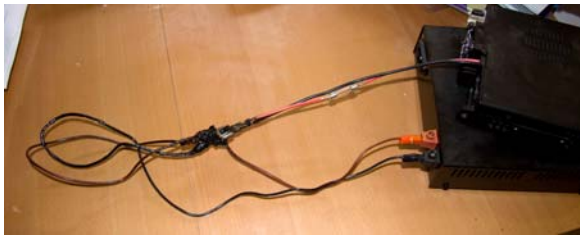
These plants had become overgrown and crowded over the years. The peat moss had slowly broken down over time as the sun dews, octopus plants, Venus fly traps, and several types of pitcher plants had all grown fat and happy with a steady supply of various insects that the children brought them from the gardens outside.

The APRS status and reply messages had referenced the D710 being "bench tested" for quite a while. The transition from bench to vehicle had taken, like many other radio projects, longer than expected. In order to get the radio on the air as quickly as possible, I'd used alligator-banana plug cables to clip the power leads to the power supply. I'd pulled the insulating sheaths down well over the exposed metal and not given it a second thought. It was, after all, a temporary setup.

After listening to several conversations on the radio, doing a load of dishes and starting some laundry in the meantime, I decided to accomplish another chore that needed finishing, and began a long-delayed replanting of the terrarium with fresh peat moss and some new plants from the bug-eating section of the local nursery.

I stepped around the table, carefully hefted the terrarium, and took it to the kitchen. I lifted out the top layer of plants and set them on some spread out newspaper, separated out a few examples of each of the overgrown masses of plants, put in a few bags of fresh peat moss, and then planted the old survivors with the fresh young newcomers. About this time I heard a shout from upstairs. Ken, who was working at a computer on the second floor, had smelled smoke and spotted the smoke rising from the back of the radio. He raced down the stairs, unplugged the radio, and opened the front window to air out the room before I could get out from under the peat moss.

An inspection revealed what had happened. I'd inadvertently brushed against the clipped-together cables. While the alligator style leads seemed to be firmly ensconced against the contacts from the D710, they had somehow managed to short together, and the wires and insulation were a solidly burned mass. See the photo on the front page for a detail of the damage. Below is a photo of the radio and power supply after they were removed to the kitchen for examination.



I immediately noticed that the fuse, visible in the upper right wire leading from the burned intersection to the radio, was intact. Taking a closer look at the terminals of the power supply, I could see that the plastic banana plugs were cracked, as if from high heat. I was momentarily concerned that the power supply might be damaged. However, the supply powered up and passed basic tests of functionality. I assumed that the supply had provided power through the short up to its maximum output of 20A. While this was hot enough to burn the insulation around the alligator clips, it wasn't enough to trip the breakers.

How to prevent an incident like this? Take the time to inspect your equipment. Transition any temporary setups to permanent ones. Now the radio and power supply have short, dedicated wires that don't provide any opportunity for shorting out when they're bumped or moved.

Field Day Checklist

By John WB6IQS

TOOLS FOR SET UP / TEAR DOWN
1. Tool bag or tool belt
2. Open end or box end wrenches. 3/8" through 9/16"
3. Socket wrenches, 7/16 through 9/16"
4. Electrical tape or duct tape
5. Knife; box cutter or folding type
6. Pliers. Medium
7. Misc. screwdrivers (slotted and Philips)
8. Tape measure, 12' or longer

SET UP / TEAR DOWN, PROTECTION & PERSONAL GEAR
1. Gloves, flexible leather types are best.
2. Sun hat / hard hat and sun screen
3. Boots or high topped shoes. No flip/flops or lightweight tennis shoes
4. Back brace belt (if desired)
5. Long sleeved shirt, for sun protection
6. Long pants, blue jeans are preferred
7. 2 Meter, Handie-Talkie, to monitor local announcements

TEST YOUR GEAR BEFORE FIELD DAY
Test your antennas and generators before bringing them to field day.

GENERATOR
1. Run your generator for at least a half-hour using an electrical heater or high wattage light bulbs as a test load.
2. Change the oil. Especially if it hasn't been done in the last year or two.
3. If you "know" that the oil is fairly new, then check the oil level. Top it up if needed.
4. Clean the air filter. Check the carburetor.
5. If the carburetor's insides look dirty, shoot a few squirts of carburetor cleaner in the air intake while the generator is running. This will loosen up any crud in the throttle plate and clean out the jets.

ANTENNAS
1. If you have a totally new antenna that has not been tried before, leave it at home. Use only known good, tired and true, antennas for field day.
1A. You do not want to build a brand new antenna kit only to find out that some of the parts are missing. Likewise, it is no fun working in the dark because the design was more trouble to erect than anticipated.
2. If you need assistance in checking a new antenna's VSWR or need a coaxial cable, pipes, ropes, etc. to set up the trial installation, let the club know. We have loose antenna parts and several antenna analyzers (HF - VHF) available for loan.
3. For HF antennas, simple sloping wire antennas without adjustable traps or exact installation angles are best. The only thing that you can guarantee on Field Day is installation problems.
4. The club will provide pre-tested beam antennas, rotators, towers and most all of the necessary hardware and cables for each station.

GENERATORS, SUPPLIES
1. Gasoline, 5 gallon cans. Approx. 15 gallons for two days supply are typical.
2. Spare quart of oil for crankcase.
3. Extension cords, 12 gauge is best. 100' long (or more).
4. 1-gallon gasoline can to fill generator.
5. Large mouth funnel for gasoline. Long necked oil filler funnel.
6. Fire extinguisher, dry chemical. Bigger the better.
7. Multiple AC plug strips. Surge protector strips for rigs & computers.

Come to the membership meeting 6 May 2009 to discuss and plan Field Day and get your questions answered.

SCOPE

P.O. Box 73
Vista, CA 92085-0073

Address service requested

Scope (USPS #076530) is published monthly by the Palomar Amateur Radio Club 1651 Mesa Verde Drive, Vista, CA 92084. POSTMASTER: Send address changes to SCOPE, P.O. Box 73, Vista, CA 92085. Periodicals postage paid at Vista, CA 92084. Dues are $20 per year or $35 per year for a family. Dues include a subscription to Scope.

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

Featured Program

The program for the general meeting at 7:30pm on 6 May 2009 at the Carlsbad Safety Center, 2560 Orion Way, Carlsbad will be on the subject of Field Day. Preparations, advice, and planning will occur!

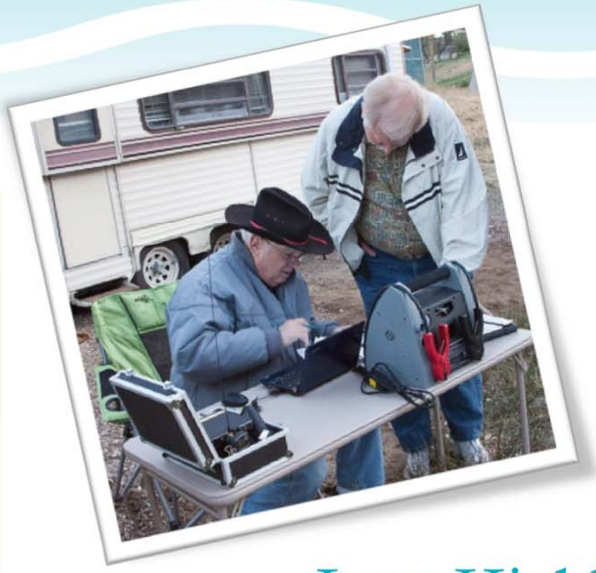
JUNE 2009

SCOPE

A newsletter by and for the Palomar Amateur Radio Club of San Diego, California.
See SCOPE in color on our website at www.palomararc.org.

Annual Club Picnic will be held in August!

Field Day is the fourth full weekend in June.



Setting up a packet station near the start/finish line of the PCT 50 Mile Endurance Run. Because the central database station was nearby, a handheld transceiver with a short whip antenna was sufficient.

June Highlights

Paul Williamson KB5MU writes on page 5, "The event went remarkably smoothly, both on voice and on packet." Read his report on the Pacific Crest Trail 50 Mile Endurance Run.

Ron Pollack K2RP describes ham radio during and after World War II starting on page 8. Don't tell Ron, but there will be a special presentation for him at the June PARC meeting.

Larry N6NC writes about remote CW Skimmer project. Learn how to log in and check it out on page 10.

Save the Date!

Club Meeting
3 June 2009
Monica Zech talks about CERT at 7:30pm Carlsbad Safety Center.

Board Meeting
10 June 2009
At W6GNI QTH. Meeting starts at 7:00pm.

Field Day
27-28 June 2009
Don't miss our lean and mean Field Day Machine this year!

Pictured above is a packet station in a box, used at the start/finish line for the PCT 50 Mile Endurance Run. See page 5 for the article about the race. Below is an Acer Aspire One netbook computer running the Runner Track software at the start/finish line.

Pictured below is the central database station. Two packet stations are to the left of the computer. The radio to the right of the computer is monitoring activity on the voice net. Photos by KB5MU.

Club Reports

Got news? Send reports about your activities and things that you think other club members need to know to scope@palomararc.org.

Membership

New Members Joining PARC:

KE6RLA, KI6LEX, KI6YEW, AF6JN, KI6YFD, KI6TWZ, and KI6JTC.

And several reinstatements. Welcome back.

We now have 79 members that have elected to receive the SCOPE on the web. And, we have noticed that a number of those receiving the SCOPE by web mail do not have the monthly label to remind them when their membership is nearing renewal time. So, the board has recommended that we print the calls of those that are near renewal time, in the SCOPE as a reminder.

SO - Here is the list of members that either "expired" in the last month or so, along with those whose renewal date is in the next month or so. Please check this list, and get your renewal checks in the mail!

PLEASE!!! N6SF, KI6FVN, N2CDP, N6MJS, KI6LAY, KI6KJG, K6JWP, W6TVA, NN6X, W9WV, WZ6RAM, W6PUG,

Fold and Staple for May

KB6NMK Jo
K2RP Ron
W6GNI Al & Kathy
WA5ACE Sonny
KB6YHZ Art

Field Day Update

By Dennis Baca KD6TUJ

Pictured at right is Charlie NN3V operating at the 2008 PARC Field Day.

PARC has a chance to be at a different location this year. The Board is finishing the request process to locate PARC at Guajome County Park. This would be just past the night entrance for the campground.

We have the San Marcos site if this does not complete.

The commitment we have this year would place PARC in the 3A classification.

As such we are looking at operating 20/80 phone/digital, 15/40 phone/digital, 10/6 phone/digital, and GOTA.

Set up starts at 12:00pm on Friday where PARC spots equipment and puts up the towers and antennas and generally sets up the stations.

Saturday final checks are made prior to the 11:00am local start time.

Sunday at 11:05 tear down and clean up begin.

Lots of help is needed for set up and tear down. This is a good time to learn or remember how to set up the PARC portable towers. With Harv's K6QK flip brackets, our antennas are easier to put up.

Dennis KD6TUJ

Solution to May Puzzle

Mile markers on interstate highways increase traveling North and restart when crossing a state line. The car traveled 300 miles, so it must have crossed a state line at mile marker 150 in the first state.

From Al Donlevy W6GNI

June Gloom Puzzle

What's the original proverb?

A proverb is written with exactly one letter of each word replaced with another. Can you figure out what the original proverb is?

Wetter mate that fever.

For Sale

Spot a good deal in the Scope!

Club Classified Advertisements

Personal equipment ads are free to members and will run for at least one month. Send your ad to scope@palomararc.org

Commercial ads are $2 per column inch per month. We will adjust your ad copy to conform to the number of inches bought.

Drake Receiver For Sale

Drake R7 Receiver for sale. Excellent condition. Asking $800 If interested please Email me, slevy1@san.rr.com or call during day or early evening at 858-755-0571.

Stephen L. Levy, KG6VSF

Amateur Radio Town Meeting

Preserve YOUR rights to install residential radio antennas.

Please RSVP to K6ESC@cox.net (we need a head count)

North County Amateur Radio Town Meeting

Presented by Escondido Amateur Radio Society and ARRL Southwestern Division

Date: Thursday, June 11, 2009 -- 7:30pm

Location: 1301 Las Villas Way, Escondido 92026

Escondido Salvation Army Building, Exit I-15 at El Norte Parkway eastbound.

Talk inbound on Escondido Repeater - 146.880 -107.2

Thanks

73, Dennis N6KI

Pacific Crest Trail 50 Mile Trail Run Communications Report

By Paul Williamson KB5MU

On May 9, amateur radio operators provided support for the Pacific Crest Trail 50 Mile Trail Run. The run was relocated at the last minute to the course planned for the San Diego 100, after a military helicopter crashed near the PCT and scattered live ordnance all over the place. Fortunately, the same group had already been planning to support the San Diego 100 run in June, so plans were already in place for the new course.

Ham support for ultra trail runs is focused on runner safety. Runners are scattered over many miles of back-country trail, far from any facilities beyond those provided by the race organizers, and they are stretching the limits of human endurance. Minor injuries are not uncommon, and more than a few runners drop out before completing the course, due to exhaustion or by taking a wrong turn on the trail and getting lost. The race organizers set up aid stations or checkpoints along the course, where runners can eat, drink, or rest, obtain limited medical assistance, and rendezvous with friends in case they need to drop out and be driven home. The organizers keep track of each runner by bib number as he or she enters and leaves each checkpoint, so they know when and where to search for a missing runner. Ham radio operators assist in collecting this information and relay it to a central point, where it can be checked for consistency and any stray runners detected.

Hams have been doing this by voice for years. This works well enough, but the voice relay means that runner position data is a bit stale, and only the bookkeepers at Net Control have access to the collected information. If the race director or other official needs to know the status of a particular runner, for instance, a time-consuming query must be relayed to Net Control and the answer relayed back. Lately we've been experimenting with using packet radio with specialized software to handle the data collection and querying functions. At the PCT50 run, we deployed a full set of voice stations (as primary) and an additional set of packet stations, which ran independently of the voice operations as a test. Each checkpoint packet station included a Windows laptop running Runner Track software by Gerry Walsh, KB6OOC, and a central packet station ran specialized database software (also by KB6OOC) that collected the information and distributed it back out to the checkpoint stations as needed.

The event went remarkably smoothly, both on voice and on packet. This was the first time I'd been involved in an event where the hams kept track of each individual runner. My assignment was to be available to troubleshoot any packet-related problems that came up. Because of the lack of problems, I was free to roam around and visit all the checkpoints, the database site, and voice net control. Here's a random collection of thoughts about the packet operations, taken from my post-event debriefing email.

Each checkpoint was free to make up its own procedures. At some checkpoints, the radio operators were making their own observations, and at others there were separate people doing that. Generally the checkpoints with separate observers ended up handling the times in large batches, which meant the times were rather stale before they were transmitted. This could be mitigated by having one more person, whose job it would be to shuttle back and forth between the observers and the radio operators. However, I think the better approach is to site the radio operators very close to the observers,

continued on page 6

continued from page 5

so they naturally get every observation as it happens. This would require more coordination between the radio operators and the aid station personnel, which would be a good thing all around.

I was surprised to find that the voice operator was really no busier than the packet operator. Both methods are quite practical for moving the data from the checkpoint to the central database or net control. Where packet really shines is in its ability to answer queries at checkpoints. It does a great job with queries like "how is runner 27 doing?" or "when is runner 27 going to get here?". If the customer doesn't know the bib number, though, there's no good way to find it. A text search on the name list would be a handy feature for a future version of the program.
At checkpoints where the packet operators were caught up and handling each entry as it came in, packet operation was more convenient, because the operator was free to type stuff in at will, without waiting for anybody else. The voice operator had to wait for a lull on the channel, then get a word in edgewise to net control, then send traffic. That overhead encourages batching up the numbers, which leads to more delay, which increases the wait time, etc. Packet is a better design for the convenience of the operators.

The biggest practical problem in setting up one of these packet stations remains the lack of a good display screen that's readable in the sunlight. This problem forces the packet operators to have elaborate setups that can't easily be moved around, which limits flexibility. There has to be a better way! A laptop based on an e-paper display (like a Kindle eBook reader has) would be great. I'm not holding my breath, but recent industry announcements point to availability "soon" of an affordable LCD-based display technology that is daylight-readable (in black and white) and consumes less power than existing laptop displays. It will also support conventional full-color backlit operation. I want one!

Most of the packet operators were listening to the voice net, too. I am worried that when we go to packet-only (really, packet-mainly) operation, the packet operators are going to have nothing to listen to and they will get bored. Or, they will listen to something else and get distracted. There's a lot of waiting around at one of these events, and I'm concerned that it will seem like an eternity without the chatter on the voice net.

My biggest concern, though, is that the Runner Track software is so very specialized. Operators who have used Runner Track a few times to track runners are fully qualified to ... track runners using Runner Track. They may have a clue or two when it comes to setting up a packet station. Other than that, the training is not very portable to other situations. In a real emergency, we won't have such specialized software optimized for the exact problem at hand, and even if we did, it wouldn't be exactly like Runner Track. There ought to be a way to do the runner tracking job effectively with software that isn't so specialized, even if it means giving up some of the convenient optimizations that Runner Track provides for runner tracking.

Suppose, for instance, that we had a spreadsheet application like a simple version of Excel that could be jointly edited by all stations. Something like that would be very useful for a wide variety of situations, and would serve for runner tracking. I think with some clever design a program like that could be almost as efficient in airtime utilization as Runner Track. It would be somewhat less convenient for the operator, but that might be a good tradeoff if it meant the operators were getting trained to use something of general utility.

See photos of the operators and operating stations on the following page ✹

Above, Ed W6ABE uses a plastic storage bin to shield his laptop's screen from the bright sun. This is partially effective.

Above, sometimes extreme measures are required to make the laptop screens readable in the sun.

At right, Georgia KI6LAV operates the packet station at a checkpoint from inside her Toyota Prius. The car can provide air conditioning and all the 12VDC power you need for about four days on a tank of gas, but the operating position is a little cramped and not very social. With sunshades on the windshield and side windows, she had no trouble

Above, Dean K6DBJ mans the central database station. Two transceivers and two TNCs are used to accommodate simplex users a separate channel from digipeater users.

Above, Dave K6ROY attempts to identify incoming runners before the other spotters do. Photos by KB5MU.

World War II Ends

By Ron Pollack K2RP

Even before America's involvement in World War II in late 1941, the hostilities in Europe had major effects on US hams.
By the time the war began, half of the worlds DXCC countries had banned their amateurs from contacting other countries. Content of conversations were limited for many others. In the effort to prepare for our military involvement and help our allies, consumer production of electronic equipment was severely limited, making components and manufactured units scarce. In addition, the shortage was so severe that for the duration of the war, hams were encouraged to donate meters, parts and radios to the war effort. Thousands complied.
Immediately after Pearl Harbor, all amateur activity was banned, with the exception of ARRL headquarters station W1AW, which broadcast bulletins throughout the war. The WERS, War Emergency Radio Service was established to provide the type of emergency communications ability that hams had provided for years. It operated on the 2.5 meter band, the forerunner of the current 2 meter band. It was not an amateur service, but was under the control of hams who were not in the military. It is estimated that of the 51,000 licensed hams, about half served on active duty, as radio operators and instructors in Morse code and electronics. Although no amateur activity was permitted, the licensing process continued, to provide trained operators for the war effort.
When the war ended with VJ Day in the summer of 1945, the nation quickly returned to consumer manufacturing, as the demand for consumer goods was huge due to wartime shortages. Electronic equipment was no exception. Our bands were returned to us gradually starting in November of 1945, and all bands were back in amateur hands by 1946, with the exception of 160 meters, which was in use by Loran, and was returned in pieces regionally for the next many years.
But, after almost 4 years of inactivity, equipment was required. Much of the prewar gear had been disposed of, so there were 3 major avenues to renewed activity: Home Brew, New Manufactured Equipment, and Military Surplus.
Before the war, most transmitting equipment was homebuilt, and many postwar transmitters were also. Part procurement was initially difficult, but many parts were released as surplus by the military.
New equipment began to trickle out of the factories in 1946, but as in the automotive industry, many were "warmed over" versions of prewar designs. In the immediate postwar years, Hammarlund, Hallicrafters, and National were the leaders in receivers. Each produced a variety of models from the primitive S38 from Hallicrafters to sophisticated high performance ones like the HRO series from National. In the next few years, the technical advances made during the war were incorporated into amateur equipment, and companies like Collins began to produce lines of amateur equipment of high quality. The variety of models increased, with all price points represented.
Perhaps the most significant change in how hams got on the air after the war was the availability of military surplus. Thousands upon thousands of new and used transmitters, receivers, and accessories were made available for a tiny fraction of their original cost. Each month, QST and CQ were filled with articles describing conversion of these units to make them suitable for amateur use. In addition to basic receivers and transmitters, hams converted these well constructed units for use as VFOs, antenna tuners, switch boxes, "Q5ers," and myriad other projects, both in the HF and VHF ranges. Parts and tubes were similarly available. Some of the most popular and useful were the BC348 receivers, which contained dynamotors for power, the ARC 5 series of aircraft transmitters and receivers (also known as SCR274N and "Command Sets,") and the

continued on page 8

continued from page 7

SCR522 VHF equipment. Surplus equipment was plentiful at least into the late 50s, and some are still heard on the air during Classic Equipment events. As late as 1957, receivers like the one shown were widely advertised for less than $5!

Shown here are two survivors of that era. The Hallicrafters S40 was a 9 tube general coverage receiver, perhaps based upon the prewar S20R. This models was later upgraded to the S40A and S40B, and production continued for 10 years, when it was replaced by the S85. This is remarkable considering the advances made in receiver design during those years, as only the most minor changes were made, such as replacing the obsolete 80 rectifier tube with the more modern 5Y3, and miniature IF transformers. These receivers were very popular in their time, and included an RF and 2 IF stages, putting them way ahead of the AC/DC S38 series. A tunable BFO was included but one of the biggest deficiencies was the lack of selectivity for CW use. Many of them were fitted with the ARC5 Q5ers to make them more usable in the crowded bands. Later, when Heathkit introduced their inexpensive Q multiplier, many were fitted to S40 series receivers as well. At introduction, these sold for about $80. By the time production ended, the price was up to about $130, for virtually the same receiver. I was fortunate enough to pick this unit up at a PARC auction, where it was donated to the club by Michelle W5NYV, our Scope Editor!

After a bit of work and alignment, it's back on the air!

The next photo is of a converted BC455 receiver, part of the ARC 5 series of military aircraft communications sets. This model covers the range 6 to 9.1 MHz, so was popular for 40 meters.

Other popular models covered 1.5 to 3 and 3 to 6 MHz. The aircraft had 24 volt electrical systems, so the filaments were wired in series/parallel for that voltage. Most users rewired the filaments. Also, a small power supply had to be built to provide the high voltage that was supplied by a dynamotor in the airplanes.

A word about the "Q5ers:" Selectivity was a problem in both the manufactured and surplus receivers. One of the "Command Sets" was the BC453, which covered 190 thru 550 KHz. It had an 85 KHz IF that was much more selective. It was common practice to take a receiver with an IF that fell in that range, connect the output of the IF stage (455 KHz in the case of the S40), and feed it into the input of the BC453. Then, the '453 was tuned to 455, and, instantly, we have a double conversion receiver, with much greater selectivity.

These receivers are typical of what the low-to-middle price station was using at the time, mostly with homebrew and surplus transmitters. ✹

N6NC Remote CW Skimmer Online

In the recent April and May issues of the Scope, Paul Williamson KB5MU described the capabilities of the software program called CW Skimmer. In this article, Larry N6NC describes a project that several PARC members are involved with. In a future issue of the Scope, contesting details and strategies will be more fully described.

As you may have heard, a new category of ARRL contesting was announced at the software defined radio forum at Dayton Hamvention this past May. The Unlimited category answers the call for innovation in contesting, given the advancements and capabilities of software defined radio and other modern rigs.

Larry N6NC writes
"I am pleased to announce that we have the N6NC Remote Skimmer provisionally operational, and looking for a permanent site. The remote CW Skimmer is now located at my home QTH in La Jolla fed by a modest 23 ft marine vertical overlooking the Pacific. It seems to copy good Pacific rim and SA DX on 40m at night.

Under the ARRL's recently revised Contest Rules, remote CW Skimmers are now allowed to be utilized during ARRL contests in the Unlimited and Multi-Multi categories. Also, CQ Magazine Contests will announce shortly the creation of an experimental "Extreme" contest class, where virtually anything goes.

The CW Skimmer is software that can monitor up to 96 kHz of bandwidth (covering virtually all of the HF CW band segments), and decode simultaneously virtually every CW signal it can hear through its dedicated SDR radio. I have implemented the system using a dedicated fast new Dell computer and an RF Space SDR-IQ sdr radio. The CW Skimmer software is set to send telnet spots (just like a DX Cluster) of all CQing stations it hears on the band on which it dwells. Other software (SkimScan) rotates the CW Skimmer for 10 or 15 minute periods during the day through the other potentially open bands (usually dwelling on 20m) to see if there are any band openings. At night, the skimmer dwells on 40m.

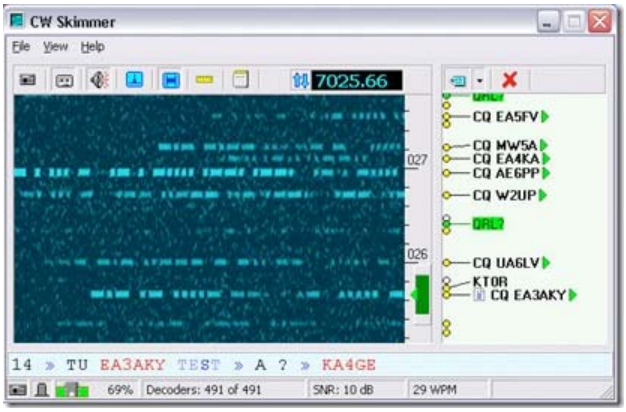
You are welcome to log in to the N6NC Remote CW Skimmer to receive its spots as telnet spots either directly in your computer's telnet window, or in the telnet window of your contest logging software. The IP address of the CW Skimmer is: 71.137.9.161

If you want to telnet in directly (on WIN XP or WIN 98 computer) get into the DOS window by:

Click START
Click RUN
Type in CMD <enter>
At the C:\ prompt,
Type: telnet 71.137.9.161 7300 <enter>, then enter your callsign when requested.

The CW Skimmer is reasonably stable (meaning it doesn't disconnect too often on its own) but there are still some glitches. Please feel free to report any problems, suggestions, or proposed nighttime band scanning schedules to me at hlserra@sbcglobal. net.

73, Larry N6NC"



SCOPE

P.O. Box 73
Vista, CA 92085-0073

Address service requested

Scope (USPS #076530) is published monthly by the Palomar Amateur Radio Club 1651 Mesa Verde Drive, Vista, CA 92084. POSTMASTER: Send address changes to SCOPE, P.O. Box 73, Vista, CA 92085. Periodicals postage paid at Vista, CA 92084. Dues are $20 per year or $35 per year for a family. Dues include a subscription to Scope.

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

Featured Program

The program for the general meeting at 7:30pm on 3 June 2009 at the Carlsbad Safety Center, 2560 Orion Way, Carlsbad will be on the subject of CERT and will be given by Monica Zech.

JULY 2009

SCOPE

A newsletter by and for the Palomar Amateur Radio Club of San Diego, California.
See SCOPE in color on our website at www.palomararc.org.

Annual Picnic

15 August 2009 at San Dieguito Park. Food, Foxhunting, and Club Station.
Bring Food according to Starting Letter of Last Name:
A-K: salad, vegetables or fruit
L-R: side dish or casserole
S-Z: dessert

July Highlights

Cub scout camp needs volunteers to play radio with the boys during their day camp. See page 3 for details. We expect to hear a short presentation about the camp at the July PARC meeting.

Starting on page 5, read Glenn Rattmann K6NA's excellent and moving memorial to "Uncle Ed" Edwin A. Andress W6KUT, who became a silent key on June 9th.

Read a VHF Contest Report from Loren AD6ZJ on page 7.

There is a San Diego Microwave Group achievement described on page 8. If you have any interest in microwave, then you should know about this weekly net and monthly microwave meeting.

Check out the back page for details about our next meeting. The 1 July 2009 meeting will feature an Amateur Radio Quiz Competition! There will be prizes and zaniness. Don't miss it.

Save the Date!

Club Meeting
1 July 2009
Quiz Night! Bring your wits! Create or join a team of 3. See back page.

Board Meeting
8 July 2009
At W6GNI QTH. Meeting starts at 7:00pm.

Annual Picnic
15 August 2009
San Dieguito Park Area 4. Food, Foxhunting and Club Station!

Annual Club Picnic

15 August 2009 at San Dieguito Park.
Food, Foxhunting, and Club Station.

Bring Food according to Starting Letter of Last Name:
A-K: salad, vegetables or fruit
L-R: side dish or casserole
S-Z: dessert

Above, at last year's Annual PARC picnic, KD6TUJ Dennis, KG6JEI Conrad, and AD6VI Steve use an MFJ antenna analyzer to adjust an old-school Drake antenna tuner to a good match. Photo by KB5MU.

At left, at last year's annual PARC picnic, Art KC6UQH tunes in a microwave voice contact, while using the handheld for liaison. Photo by KB5MU.

Club Reports

Got news? Send reports about your activities and things that you think other club members need to know to scope@palomararc.org.

Membership

New Members Joining PARC:
N2DKO, KI6ZUI
And one "old" member reinstated their membership.
Not a very good month for growing the membership!

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!!! N6SF, KI6FVN, N2CDP, N6MJS, KI6LAY, K6JWP, W6TVA, NN6X, W9WV, WZ6RAM, W6PUG, WB6YVT, KI6CTS, KI6MMT, K1JDS, K6GAO, W6DEO.

Al
W6GNI

Fold and Staple for June

KB6NMK Jo
KB6YHZ Art
W6GNI Al & Kathy
WA5ACE Sonny

Scouts in Space Needs Ham Help

By Dennis Baca KD6TUJ

Palomar Amateur Radio Club has received a request to support the Vista Boy Scouts and Vista Cub Scouts by providing a hands-on amateur station. This is a great way to get the community interested in Ham radio. I will be assisting on the Wednesday. Offers of assistance will be greatly appreciated. This should be a fun event.

Here is the letter from the Vista Cub Scout Day Camp Director, Ron Anderson:

Dear Dennis,

Thank you so very much for offering to come and participate in our camp from July 20th - 24th at the Vista Antique Gas and Steam museum. The camp is from 9am to 3pm each day Monday through Thursday. On Friday the 24th we open from 9am - 2pm. On Friday will be having a family style picnic which starts at 12pm which you are welcome to enjoy (Hot dogs and Hamburgers). I am extremely excited about the possibility of having your group there all week.

I would really like to have a presentation on Tuesday for the groups of boys. Each presentation on Tuesday will be about 40 minutes long. You can use that opportunity to demonstrate the equipment and how the technology works and the value of learning the technology and why the technology is relevant for our safety. For the remainder of the week the availability of talking on the Ham equipment would provide a great opportunity for impressionable minds.

As mentioned I will have a fair number of older Boy Scouts at camp and it will be a great way to recruit boys for interest in the Radio Merit Badge. Also, our Friday Program is open-ended and will be a great way for demonstrating your program to families and garner more interest in your organization.

I am interested in attending your July 1st meeting and look forward to giving a small presentation on our camp to your organization.

I have attached the Boy Scout Merit Badge requirements for Radio. It might help serve as a template for preparing presentations with the boys. Our Cubs will be younger than what is requested in the Merit Badge but some of the ideas might be helpful.

I look forward to talking with you soon so that we can make this a reality for our boys.

Sincerely,
Ron Anderson

Vista Cub Scout Day Camp Director

For Sale

Spot a good deal in the Scope!

Club Classified Advertisements

Personal equipment ads are free to members and will run for at least one month. Send your ad to scope@palomararc.org

Commercial ads are $2 per column inch per month. We will adjust your ad copy to conform to the number of inches bought.

Antenna Available

Butternut HF9V, vertical 9-band antenna in good condition, with manual, assembly and tuning instructions. Antenna is already taken down and ready to pick up.

FREE

Contact Bernie-N6FN ph 760-746-7411 or email n6fn@niftyaccessories.com

Whose eyeball is that above? Guess right and get an On The Spot Award at the July membership meeting.

Items For Sale

Astron power supplies: 13.6V - 2ea. RS-35A @$50 each
1ea. RS-20A @$35 ;
2 ea. LS-25A (28 V) @$35 ea.

Solid state linear amplifier, METRON, model MA1000B , 13.6 V DC in . 70watts PEP drive for 1Kw out. Size is 10" x 17" x4" tall. The top is a one piece heat sink (fins about 1" tall) $75

2 each "all mode" 2 M radios. 1 Yaesu FT221R and 1 Kenwood TS700A. Even unreasonable offers will be considered

Gary Bollschweiler - WB6GSN
WB6GSN @ gmail.com
858-748-6076

Drake Receiver For Sale

Drake R7 Receiver for sale. Excellent condition. Asking $800 If interested please Email me, slevy1@san.rr.com or call during day or early evening at 858-755-0571.

Stephen L. Levy, KG6VSF

Uncle Ed, W6KUT (SK)

Edwin A. Andress
October 25, 1918 – June 9, 2009

By Glenn Rattmann K6NA

The DX world lost a pioneer and true giant recently with the passing of "Uncle Ed", W6KUT. The following is a short summary of his life, with emphasis on the ham radio side of things

Ed was born in Isabella, CA in 1918. The family moved later to Fresno, where Ed attended school including Cal State Fresno, receiving his degree (physics, with minor in chemistry and math) just prior to WWII. In high school, he heard about ham radio from his friend Gene De Young after seeing the W6HYG QSL card on Gene's desk in class. After school that day, Gene brought Ed to his home and showed him the equipment and antenna, and after taking the test a little later in 1934 the U.S. Mail brought him his first license, W6KUT. In Ed's own words, "That first license is a reminder of the day my life changed forever!"

Gene De Young was to remain a lifelong friend of Ed's. They both were hooked on DXing, but Ed was enthusiastic in all phases of ham radio and in the late 1940's was ARRL Emergency Coordinator for Fresno County. But most significantly, through fate, or dumb luck, Ed's experience as a ham, along with his formal education, would lead to an important role in WWII. As the war neared, ROTC steered Ed to the U.S. Army Signal Corps and they gave him a direct commission as 2nd Lt., sending him to Fort Monmouth, NJ for training. During the train stopover in Chicago the night of December 6th, 1941, Ed of course learned about the Pearl Harbor attack the next morning, and re-boarded the train for Fort Monmouth.

Ed's group of 50 new RADAR officers shipped out for the UK from Halifax, arriving safely in spite of losing their defender-ship, a British destroyer, to a German torpedo. In Scotland, Ed was assigned to the RAF where he helped develop a new RADAR Fighter Control System, and improved shore RADAR defenses.

Remember, this was the very early days of RADAR, and the MIT people were pushing leading-edge equipment to Europe as fast as possible. Ed then was assigned to 8th Army Air Force where he improved aircraft communication through 'smarter' scanning and blanking techniques. Ed's work eliminated German RADAR signals from the Allied aircraft COM channels, greatly enhancing our aircraft communications during combat over Germany.

Ed's RADAR expertise led to the next assignment: Planning the locations for installing fighter-control RADARs across France, all the way to Germany. This prototype equipment came from MIT (incorporating many of Ed's suggestions), and Ed's people had to package it in vehicles in waterproof fashion.

Ed was sent to MIT on a special cargo plane to consult with their engineers for several weeks on fabrication of this new equipment.

Then came the Normandy invasion. The RADAR gear started pouring across Omaha Beach on the second day, and of course Ed was there. Although the mobile RADARs were intended to guide Allied aircraft, Ed and his crew cleverly used them to detect the locations of enemy ground-based tank movements and artillery batteries. While pinned down on the ridge above the beach, they called in air strikes and took out the enemy sites. Later, Ed further commanded the RADAR company through the Battle of the Bulge.

For his outstanding work in the war, Ed Andress

was awarded the Order of the British Empire, OBE (MBE class). Later, the Air Force awarded him the Legion of Merit.

Upon Ed's return to the states, he was assigned to the Air Force Test Board, to verify production of new RADAR equipment, and also went to Hollywood to assist Hal Roach Studios in producing training films for RADAR users.

After a few years of Air Force Reserves (Major) and working in the family neon-sign business, the Air Force recalled Ed for two years in the Korean War. After that point he had to make a choice—stay in service, with a full commission, or get out. He decided to resign, after he and Gene De Young decided to gamble and go into the broadcast business. In the 50s, Gene was the majority owner and Ed was a partner and Chief Engineer at radio KERO Bakersfield. They obtained another license for KERO-TV, and Ed was responsible for building both the studio in town, AND a completely new transmitter/antenna site on remote Mt. Breckenridge, east of Bakersfield.

This was to become Bakersfield's first major network television affiliate. This task was enormously difficult—starting with how to get water and power-- but Ed got the job done. Eventually he left the broadcast business in the early 60s. For the next 20 years or so, Ed was involved with manufacturing and sales of various types of electronic equipment, and at times worked with other well-known Southern California hams in business such as Cam Pierce, W6HJT (K6RU) and Dennis Dinga, N6DD.

Relatively late in life, Ed took on a new challenge—that of seagoing merchant marine radio officer. He loved that job, because he could take his little portable ham station in a suitcase, and operate aboard the ships.

Ed's work took him to the Indian Ocean numerous times during Desert Storm in the early 90s and he was at sea for nearly a year in one stretch, circumnavigating the world in the process. W6KUT remained continuously active following WWII, and Ed kept up his DXing.

Recall that DXing in those days was "A boy and his radio." No 2m link. No cluster. No Internet. Just keep tuning the receiver! The evidence is impressive: CQ WAZ Award #56 in 1948; ARRL DXCC #159 in 1948; he received sticker #380 in 1998, and remained on Top Honor Roll for many years. Ed holds 5BWAZ #6 (#2, West Coast). The San Diego DX Club elected W6KUT to the Club's Hall of Fame, along with W6BZE and W6PT. Ed was a generous DXer, always eager to help the younger guys learn the hardware techniques and operating skills they needed. I remember clearly that Ed showed me the 'Eureka' details I needed to finally master the PERFECT installation of PL-259 connectors! He, along with Otto, W6PT, also gladly taught me the secrets of prop pitch motors.

Ed was widowed in 2000 with the passing of his wife, Liz. They had three children, one of whom became a ham operator: Anna (Cathy), Kim, and Kurt, who is very active as K7NV.

Ed is survived by the children; seven grandchildren; five great-grandsons; and his loving companion Diane Vandenberg. And let's not forget the hundreds—no, thousands—of radio hams, worldwide, and business persons, who were touched in so many wonderful ways by this generous, kind, skillful person who always kept an engraved, one-word wooden sign on his desk: Empathy.

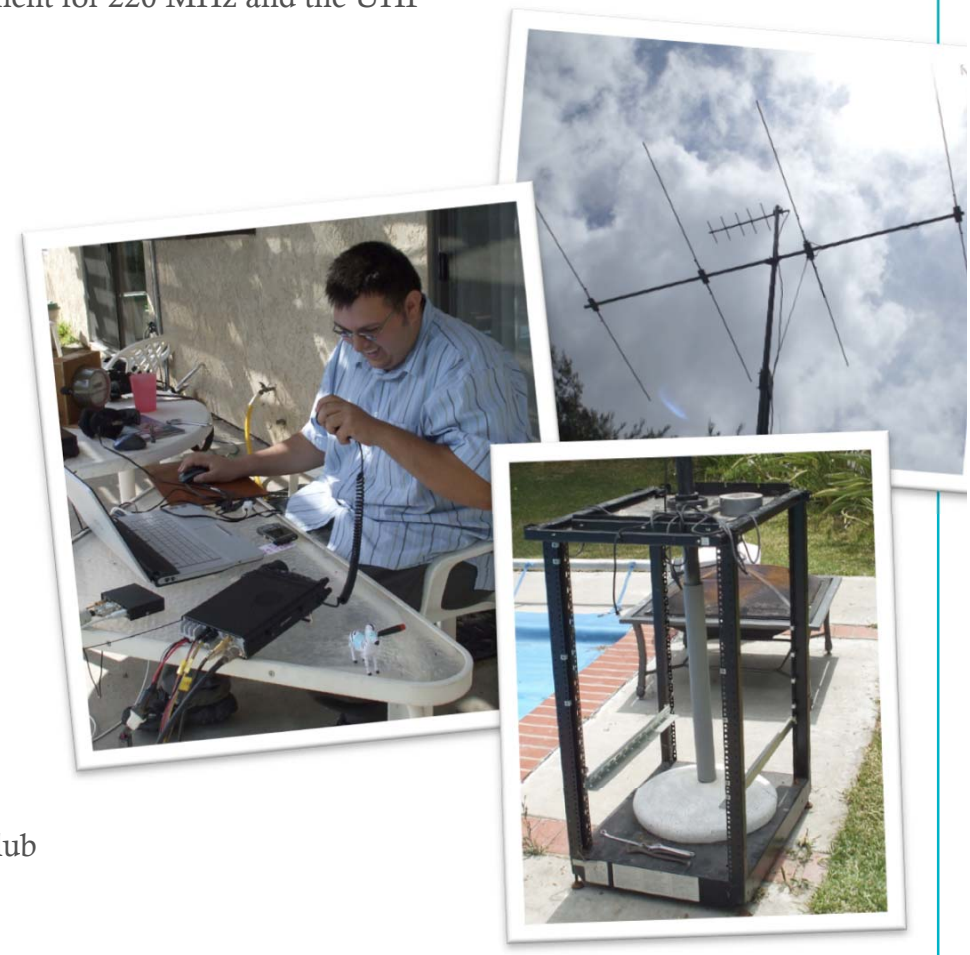
RIP Ed Andress, W6KUT—A great Patriot of the Greatest Generation!

VHF Contest Report from Loren AD6ZJ

Loren AD6ZJ writes:

Michelle,
Conrad and I did the VHF contest as prep for field day. I took some pictures and so did Conrad. I don't have my pictures with me but will send a few to you (included below –W5NYV).

I got a chance to try out my rack mount antenna tower with a 6m beam and 70cm beam. The rack provides support and I use a flip-up mast to get the beams to 20'. The 2m was on a vertical. If I do this again I might try to find some equipment for 220 MHz and the UHF
stuff.
Here are the results:



ARRL June VHF QSO Party
Call: AD6ZJ
Operator(s): AD6ZJ, KG6JEI
Station: AD6ZJ

Class: Limited Multi-Op LP
QTH: DM13
Operating Time (hrs): 7

Summary:

Band	QSOs	Mults
6	71	28
2	19	4
432	11	4
Total:	101	36 Total Score = 4,032

Club: Southern California Contest Club

Comments:

Decided to use the VHF contest to try out my field day setup with the 857D. I figured I could test everything but the hf antennas...
This was my first VHF contest so I didn't know what to expect. Decided to invite Conrad, KG6JEI and make it a multi-op since I was going to be busy doing family stuff and wouldn't have too much time to work it. Between the two of us we put in 7 hours and in the process I worked more calls on 6M then any time before and I worked my first every simplex on 440mhz(I don't usually drift above 30mhz). Second best thing was working the N6VI team on 3 bands. First best thing was getting HAWAII on 6M. Also picked up MT and SD on 6M for the first time. It was a different atmosphere than the typical hf contest and was able to move many to other bands. I might have to do this one again.

73
AD6ZJ, Loren

San Diego Microwave Group Achievement

Greg Bailey K6QPV writes:

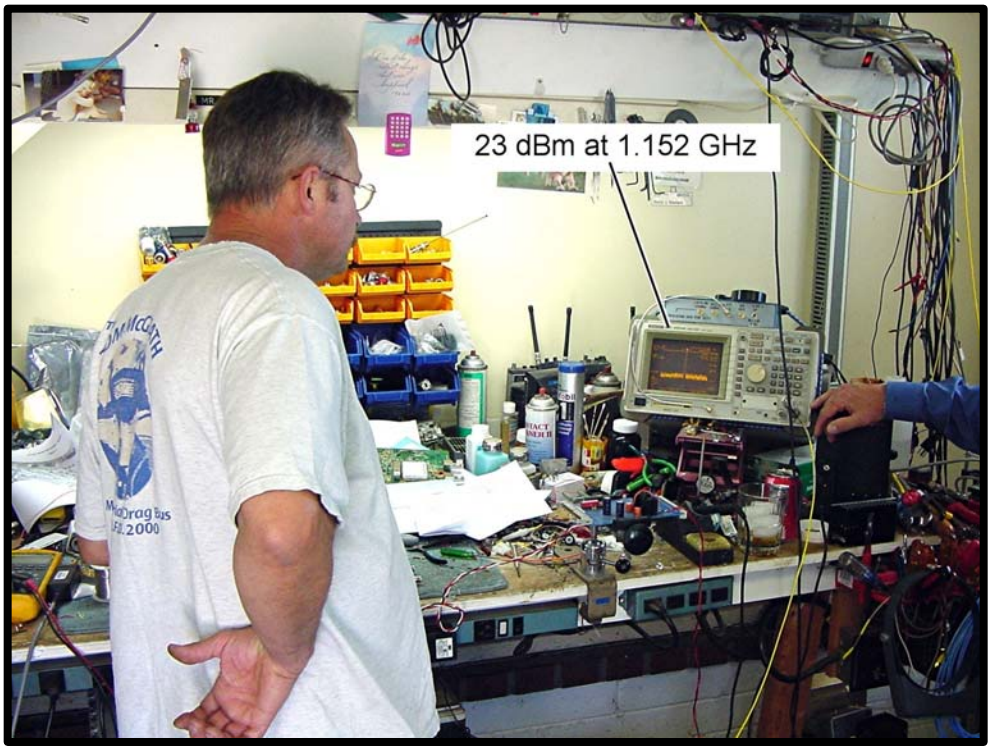
Using PARC's Palomar 2m repeater on Monday night at 2100, the San Diego Microwave Group promotes amateur activity above 1GHz.

One of their newest members recently finished modifying a Qualcomm PLL circuit so it will operate as his LO on 1.152 GHz. Shown is Mike Rienzo, KI6ACI, checking out his signal on a spectrum analyzer, (1.152GHz @ 23 dBm).

Other activity accomplished by the group includes microwave beacons, designs supporting a broadband high-definition video station, contest activity, and experimentation in instrumentation, SDR, and filter design and test.

The group meets in person every third Monday. Contact Kerry Banke N6IZW for details (c/o w5nyv@yahoo.com).

Group webpage http://www.ham-radio.com/sbms/sd/projindx.htm.



June Goodie Givers

Thank you very much to Terry K3PXX and Mark KI6FVH for making our meeting so sweet!

They were our June general meeting Bringers Of Tasty Offerings. Please consider bringing a snack to share at the July meeting!

Theme: red white and blue!

SCOPE

P.O. Box 73
Vista, CA 92085-0073

Address service requested

Scope (USPS #076530) is published monthly by the Palomar Amateur Radio Club 1651 Mesa Verde Drive, Vista, CA 92084. POSTMASTER: Send address changes to SCOPE, P.O. Box 73, Vista, CA 92085. Periodicals postage paid at Vista, CA 92084. Dues are $20 per year or $35 per year for a family. Dues include a subscription to Scope.

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

Featured Program

The program for the general meeting at 7:30pm on 1 July 2009 at the Carlsbad Safety Center, 2560 Orion Way, Carlsbad will be a special treat! Steve W6TAN from the Escondido Amateur Radio Society will present his famous Quiz Night. Here's Steve's description: Basically, I will have about 35 questions (on slides), which takes about 45 minutes to present, and they are all related to Amateur Radio in some way. They may be technical, theoretical, geographical, legal, trivia etc. They are either straight questions, or multiple choice. Some are easy, some are tricky, and some are designed to trick the contestants. All are fun. The teams need to be of 3 or 4 people, with a designated team captain & team name. After the questions have been asked, the teams swap answer sheets for marking. The team with most points (correct answers) is declared the winners. In the event of a tie – then there is a tie-break question or two. There will be prizes for the winning team!

AUGUST 2009

LARGEST ISSUE EVER

SCOPE

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

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

Annual Picnic

15 August 2009 at San Dieguito Park. Food, Foxhunting, and Club Station.
Bring Food according to Starting Letter of Last Name:
A-K: salad, vegetables or fruit
L-R: side dish or casserole
S-Z: dessert

August Highlights

Read all about the Cub Scout amateur radio demonstrations starting on page 3 at the "Cubs in Space" day camp at the Antique Gas and Steam Engine Museum. Thank you Paul, Jim, Loren, Dennis, and Wild Bill for making it such a great experience for the boys!

Read a first-person account by Rich KI6RRQ of amateur radio assisting in a hiker rescue in the San Gabriel Mountains over the CARA Repeater.

Catch up with what happened at our last membership meeting on page 8.

Read an article by Loren AD6ZJ about lessons learned at this year's PARC Field Day effort starting on page 9.

Ron K2RP tells us about the Johnson Viking transmitter beginning on page 13. Yes, 13! This is our largest issue ever.

Check out the back page for details about our next meeting. The 5 August 2009 meeting will feature Wild Bill describing his

Save the Date!

Club Meeting
5 August 2009
Wild Bill tells us all about his adventures in Honduras.

Board Meeting
12 August 2009
At W6GNI QTH. Meeting starts at 7:00pm.

Annual Picnic
15 August 2009
San Dieguito Park Area 4. Food, Foxhunting and Club Station!

Annual Club Picnic

15 August 2009 at San Dieguito Park.
Food, Foxhunting, and Club Station.

Bring Food according to Starting Letter of Last Name:
A-K: salad, vegetables or fruit
L-R: side dish or casserole
S-Z: dessert

Calling All Adventure Seeking Amateurs

The countdown has started to the Longest Off Road Race in the United States - the Vegas to Reno off road race. If you're an Amateur who likes the excitement of the outdoors and off road racing Best in the Desert would like you to join the hundreds of volunteers, racers, and spectators in the beautiful Nevada desert for "Vegas to Reno the Long Way"!!! The cars, trucks, motorcycles, quads, and UTVs will be racing for 3 days (August 20, 21, 22 2009). Many of you have joined us in the past to make this and other races across Nevada the safest, best organized events for everyone, and here is your chance to join the excitement. The Amateur volunteers will join with other volunteers on the race course at gas stops, check points, and road crossings to make the almost 1000 miles of off road race course the safest and most memorable 3 days of racing Nevada has to offer for racers, support teams, volunteers, and all involved. For a field day like adventure and the speed and excitement of off road racing with teams from all over the world contact us for more information or to join the team please contact:

Keith Purmal KC7HT
kc7htkeith@hotmail.com

Best in the Desert
3475C Boulder Hwy.
Las Vegas, NV 89121
www.bitd.com
702-457-5775

Thanks and 73,
Keith

Club Reports

Got news? Send reports about your activities and things that you think other club members need to know to scope@palomararc.org.

Membership

New Members Joining PARC: KI6THI, KI6RXX, and KI6ZLG.
And 5 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!!! N6WXD, K7MOA, K7WCC, KI6QDB, W6CDU, K6BZZ, KI6SAT.

As a reminder, in accordance with the by-laws, the year for participation points is August 1 through July 31. So, the points for attending the August 5th, 2009 club meeting will be starting points for year 2010. The fold and staple crew will get their points added in 2009, since this newsletter was prepared and mailed July 29th.

Al
W6GNI

July Goodie Givers

Thank you very much to those who brought goodies to the July meeting. Please consider bringing a snack to share at the August meeting! Suggested Theme: Apples

Fold and Staple for July

KB6NMK Jo
W6GNI Al & Kathy
WA5ACE Sonny

"Scouts in Space" Cub Scout Day Camp Report

Get Outside, Have Some Fun and Intrigue a Cub

By Paul WN6K

At last month's meeting of PARC, we had an announcement and request from Ron Anderson for the club's help with a Vista Day Camp for some young Cub Scouts. They were going to have a day camp experience at the Antique Gas and Steam Engine Museum during the weekdays of July 21-23. Some PARC members were needed to set up a station so that the 'cubbies' could get a little taste of what our service and hobby was about.

When asked by Dennis, KD6TUJ, my early answer was that on Tuesday the 21st, I was going to be tied up with some water district business. Not wanting to leave Dennis in a total lurch, I suggested that perhaps if he called Wild Bill, WB6BFG, he might be able to lend a hand in my place. Dennis and WB made contact and the process was started. Prior to the start day KD6TUJ, Dennis & AD6ZJ, Loren got together a 'spare' antenna and others moved the new PARC tower trailer and one of the PARC radio trailers over to the site. When preliminary testing the antenna, the early crew discovered that the antenna was not tuning as expected and once again called to see if WB could 'take a quick look' at the antenna. Monday afternoon I met up with WB and we got together some of the necessities to diagnose and possibly fix the ailing antenna. After an afternoon of hot sun, sanding, tuning and prepping the seasoned 3-element tribander (Hy-Gain TH-3) was ready to go.

The next morning I was off to my meetings and Wild Bill headed out to the Day Camp and made the final preparations in time for the first group to arrive. Armed with grid maps of the US, a couple of radios, a logbook and bottles of water, "Frankie" (WB's K9DOG), the master of getting things done with whatever and whenever was set to go on time. I was 'between meetings' when I heard Bill talking with his newfound young friends and someone on the 73 machine. I had just discovered that my second meeting of the day was to take place the following day, so I texted WB's cell (did not want to interrupt his 'flow') that I was on my way to his location to assist.

I arrived in time just as the second of seven groups (about one group every 50 minutes) of

continued on page 5

Club Classified Advertisements

Personal equipment ads are free to members and will run for at least one month. Send your ad to scope@palomararc.org

Commercial ads are $2 per column inch per month. We will adjust your ad copy to conform to the number of inches bought.

Antenna Available

Butternut HF9V, vertical 9-band antenna in good condition, with manual, assembly and tuning instructions. Antenna is already taken down and ready to pick up.

FREE

Contact Bernie-N6FN ph 760-746-7411 or email n6fn@niftyaccessories.com

Items For Sale

Astron power supplies: 13.6V - 2ea. RS-35A @$50 each
1ea. RS-20A @$35 ;
2 ea. LS-25A (28 V) @$35 ea.

Solid state linear amplifier, METRON, model MA1000B , 13.6 V DC in . 70watts PEP drive for 1Kw out. Size is 10" x 17" x4" tall. The top is a one piece heat sink (fins about 1" tall) $75

2 each "all mode" 2 M radios. 1 Yaesu FT221R and 1 Kenwood TS700A. Even unreasonable offers will be considered

Gary Bollschweiler - WB6GSN
WB6GSN @ gmail.com
858-748-6076

Free Oscilloscopes

Two Tektronix 2246A, 100 MHz, 4 channel oscilloscopes. 1990 vintage, all solid state with CRT displays. Immediate needs = major switch mode power supply surgery plus unknown more repairs. Requires more time, trouble and $$$ than I am willing to invest in them. Complete repair manual available. Disassembled right now. WB6IQS@att.net, Vista 760-727-3876.

Drake Receiver For Sale

Drake R7 Receiver for sale. Excellent condition. Asking $800 If interested please Email me, slevy1@san.rr.com or call during day or early evening at 858-755-0571.

Stephen L. Levy, KG6VSF

continued from page 3

about 20-25 cub scouts per group arrived at the mobile shack. We held a brief 'tag team' intro at the 7-10 year old level of what Ham Radio was and what it could be and entertained questions from the kids, moms and other leaders of their activities for the day.

Soon we got down to the 'fun stuff'. I got on 20m (the only real band that was open this day) and called CQ, advertising that I was looking for anyone who had a little bit of time and would be willing to give me a chance to have the kids say hello. WB made me a quick card so that the kids could go through a little script we devised so that they could tell the op on the other end their name, age and what city they lived in.

This script worked very well as they were too busy reading the script and they never really knew they were supposed to have 'mic fright'. Those that were even more adept were even able to enhance their conversations telling tales of other activities in which they partook during the day ranging from Archery to Obstacle Course. WB pulled a fast one on me toward the end of one of groups. He had talked one of the den leader moms into talking on the radio. She read through the cue card just like the kids had been doing, but they got me with the closing. She signed with her callsign! N7ITM - sure threw me for a loop and they (we) had a good laugh…

A special thanks to those helpful hams from Calgary to W1AW to San Diego who opened up a bit of their day to say hi and gently prod the shyness while encouraging that this might be something fun to do. So when called upon to perhaps try your hand at assisting in a similar club project, do try to mark out a little time – you will be tired for certain but go home rewarded many times over. And oh it doesn't hurt to have a Wild Bill at your side.

WN6K, Paul

Hiker Rescue from Mt. Baldy Enabled by Amateur Radio

By Rich KI6RRQ

Around 3:00 pm on Saturday, July 11, 2009, I was monitoring the CARA (Catalina Amateur Radio Association) repeater on my base station, when I heard a call. “Is there anybody listening?” I responded, “probably about 300 people.” The caller said he was on his HT, hiking around the Mt. Baldy area. He said he was about 2.5 miles off the road, resting at the wilderness San Antonio Ski Hut, and that a few hikers had arrived from farther in the backcountry. One of their group had broken an ankle and was a mile or more up the trail. They needed help. Mt. Baldy is the highest peak in the San Gabriel Mountains and the highest point in the Los Angeles area. Mount San Antonio is at 9,900 feet above sea level.

I had my computer on, so I asked the caller for his call sign and name. He responded, “KE6MTF, Kirk.” They matched. I asked if he had a cellular phone, and he told me there was no cell service on anybody's phone. I told him I would coordinate emergency services over my landline and asked for his exact location. Kirk, KE6MTF, did an excellent job. He had a good idea of where he was, including GPS coordinates, but was not sure which county he was in. I called 911 and was transferred three times until I was put through to San Bernardino County Sheriff's dispatch, Chelsea, who coordinated the rescue with San Bernardino Fire. They sent a foot patrol and the Sheriff dispatched a helicopter to meet someone at the Ski Hut to take them to where the hiker was down. It took a little less than an hour for emergency services to get above the location in a helicopter. They were not able to land the helicopter because of the rocky terrain at the ski lift. Meanwhile the group of hikers had gotten the injured lady down the trail to the Ski Hut and had her leg stabilized. They had determined it was probably not broken, but they still felt they could not carry her out, since the trail down from the wilderness Ski Hut was so steep.

The dispatcher said they would perform a skid rescue, where they drop and suspend a collector of some sort from the helicopter. The victim is secured to the equipment and pulled up and out. The dispatchers also asked if there were any other needs, such as food, water, etc. There were none. About 15 minutes after arriving on site they were working to effect the rescue. The victim was airlifted out, successfully, without further complications.

Since the incident, Kirk informed me that the injured lady was around 40 years old and that there were up to 15 hikers hanging around the Ski Hut, some of whom were search and rescue volunteers on vacation. They had some kind of radios with them, but their batteries were spent. Kirk said when he got out of his car to start the hike, he grabbed his ham radio and GPS and his friends said, “that’s just extra weight, you won’t be needing that!” He replied, "First, I go nowhere without my radio. Second, if I need to call for help, the only way I would be able to let them know where I am is with GPS. I'm bringing them.” I don't think they will say that next time! One of them decided they need to look into getting a ticket and radio. The search and rescue folks said they were going to look into getting ham radio licenses.

Ham radio saved the day. A hand held radio,

continued on page 7

continued from page 6

hitting a local wide area repeater, was exactly what was needed when cell and landline phones were not available. Many thanks to the CARA club for their awesome reach in southern California on 2 meters (147.090 MHz, + offset, no PL) and to those on the air who were very gracious to respect the traffic and keep communications open during the rescue.

This is such an excellent example of the benefits of ham radio! If the party had had to hike out of the wilderness, get to their cars, and find a cell signal, they might have run out of daylight. Rescue would have been significantly more difficult and might have included more people then just the initial injured hiker. As it was, a couple of ham radio operators made all the difference. Emergency services accepted the ham radio call without hesitation. They used me, a ham radio operator, to relay questions back and forth with Kirk in the wilderness, so as to gain all the information they needed to commit assets to the emergency. It was as if I were calling about something in my own back yard, in Vista, California, even though the problem was several counties (and several hundred miles) away in the mountains, and involved people I didn't personally know. I am proud to have had the opportunity to use my license in service of an emergency situation. As a CERT member, this was the very reason I got my ham radio license in the first place!

Here is a link to video taken by Kirk KE6MTF.

http://marlene.zimage.com/ke6mtf/hike/rescue/iPhone/IMG_0408.MOV

Rich KI6RRQ

PARC July Meeting "Quiz Night" Report from Talented Event Emcee Steve Venner W6TAN

Hi Michelle,
I had a really great time at the last PARC meeting! I've finally gotten around to 'officially' marking the papers, so you can publish the results if you wish.
There was some very dubious marking that took place on the night – as well as the tallying of the scores. It's amazing that the winners actually won!
Anyway, the good news is that they did… and they did it out-right. There was really no need for the tie-break question(s) - if the markers had added up the scores correctly!

I've attached the final score sheet, which gives a breakdown of the scores for each team: What they were given on the night, what they should have been given on the night, and what they really scored.

There was only one contentious question Q15 regarding the power level limits for doing an RF environmental evaluation on 30m (425 Watts).
That is the correct answer according to the ARRL & the FCC!, however Paul (WN6K) & a few others quite correctly pointed out that you can't (legally) run more than 200 Watts PEP, hence they answered (a) (30 Watts). Basically what this means is that US hams don't need to do an RF evaluation on 30m (and I think you actually suggested that). For those that gave answer (a) to Q15, I've given them the benefit of doubt, and awarded them a point.
Please let me know if you have any questions or comments. I will try to make it to the next PARC meeting, just in case, and I'll bring the marked-up papers with me too!

Enjoy,
Steve
(W6TAN).

Team	Scores		
	Original	Should have been	Correct
Old Farts	29	29	28
Trouble in River City	29	25	24
Random Noise	26	26	26
Final Century Club	26	25	25
My Mind Has Gone Blank	25	21	21
The Usual Suspects	23	25	25
Super Meg's (Hertz)	21	21	21
Ratchedy Spark Slingers	21	21	21
OSIMA	17	17	18
Old Codger	12	12	14

Clockwise from top, quiz winner Jim W6SST, Steve Venner W6TAN receives certificate of appreciation from Dennis Baca KD6TUJ, and quiz winner David KC6YSO.

Field Day Report from Loren AD6ZJ

This was my first year as a band captain so I had no idea what to expect. I should have at least expected the unexpected. What follows is a summary of what went right and what went wrong.

Friday afternoon we put the towers up at the field day site. Aside from initially setting a tower trailer too close to a tree, things went relatively smoothly. Our club president Dennis, KD6TUJ had been working on a new tower trailer and it saw its first action this FD. The other towers had the usual issues you get when you take a tower off a trailer but nothing major. By 4:00pm we were waiting for the fire truck to fill up the ballast barrels. This year's site offered shade and a cool breeze so things were looking good.

Saturday morning things started to go sideways a bit. I had to deal with some family issues so it took a little longer to make it to the site than planned. As the band captain for the 40m/15m station, I was assigned the PARC trailer as operation central. Just before 9:00am we unlocked the trailer that hadn't been used since last years FD…or so we thought. Field mice had taken up residence and the trailer had an aroma that no one needs to smell just after breakfast. To make matters worse there were things being "stored" in the trailer that gave the "field day

mice" extra bedding materials. I made a quick run home and picked up cleaning supplies to spruce up the place. After about an hour the trailer was sufficiently tidy to set up the station. During the cleanup I spotted a lone 12V battery dead as a doornail equipped with clip leads for easy connection. I thought how useful it would be if it were charged.

The station setup started out ok mainly because I

used the same setup (with different antennas) just two weeks before for the VHF contest as a dry run. One thing lacking from the dry run was a headset and foot switch adapter cable for the Yaesu 857D. I trip to HRO a week before FD came up empty as they had just sold the last one and had more on order. I never made it back to HRO after they received more cables. So here it was, Saturday morning, when I remembered I needed to make a trip to the candy store. Conrad KG6JEI (FD chairman) volunteered to go to HRO to pick up the needed cable until Bill N6HBO reminded me that Ham4Less was just around the corner and might have what we need. It was a noble attempt to save a trip to San Diego but in the end no suitable cable was found locally.

continued on page 10

continued from page 9

During all this time FD had started so Paul KB5MU started operating with the hand mic along with the voice keyer. 15m wasn't all that open at 11:00am and so the rates were very slow. Making things worse I discovered the Yaesu 857D is totally inappropriate for a multi station setup. Every time someone would TX on the 20m, 10m or the 6m station the RX on the 857D would get overloaded and go silent. This made things challenging for Paul who was only able to snag the occasional call. Another annoyance of the 857D is that it has no monitor output so you can't hear what you're transmitting. I needed to make a change and couldn't delay.

After another trip home and back I was installing my Yaesu FT1000MP. Installation should have been quick as I use a common interface in the Microham Universal Interface II. Of course Windows saw this second interface as a new device and wanted to install a new set of drivers. Once that was done it still didn't work until Conrad looked up the baud rate for the FT1000MP on the Internet. About the same time Dennis found the box of band pass filters and we installed one each on the 15m and 40m lines. So, a few hours into the FD exercise we finally had a station that was suitable for the task at hand. A few hours into the FD exercise, and after the end of Paul's shift, we finally had a station that was suitable for the task at hand. Paul had to put up with station issues that were not an issue the remainder of the day.

The second shift was run by Dick, K6KAL assisted by his wife Rusty, KI6SMT. 15m was picking up and so was the energy level. The pair concentrated on SSB and they were having a good time of it. Near the end of their shift a guest in the trailer started asking about PSK and we decided to demonstrate. I had software on the computer to handle it and the hardware interface was already connected so we decided to try. For some reason I couldn't get the PTT control to work even though it was working at home just the night before so we switched to VOX and gave it a try. The PSK portion of 15m was quiet (no signals on the display) so I sent out "CQ FD DE W6NWG" but the VOX delay was set for fast CW QSK and needed to be adjusted so it wouldn't cut out at every space in the text string. While I was remembering where the VOX delay adjustment was I didn't notice that a station came back to my original CQ. Dick pointed this out and we proceeded to make our first PSK QSO with the VOX kicking out multiple times during the exchange. While making the adjustment Dick noticed another station coming back to us. Now we were having some fun. With VOX set correctly I left Dick and Rusty for a while and let them rack up more on PSK. It was interesting that although 15m was poor at the start of FD, now, at 7:00pm, 15m was still going so they continued on past their shift end to grab a few more on the band.

At the start of my shift I decided to give 40m PSK a try since I had a 40m SSB operator lined up for the 11:00pm - 7:00am shift and a CW operator lined up from 7:00am till the end of FD. As I was getting dialed in I switched to the 40m

continued on page 11

continued from page 10

inverted V antenna, went down to 7.070 and the band was packed with PSK activity. I honed in on a signal, made the contact but noticed my power output was only about 5 watts. I had forgotten to hit the tune button on the FT1000MP. Pressing tune should have been simple enough but the antenna was cut for the high end of the band and the FT1000MP would not tune it. I kept trying things such as starting higher in the band and tuning and slowly sneak in on the lower part. The best I could do was about 2.5:1 and then I remembered the FT1000MP internal tuner will only tune out about a 3:1 mismatch. The next step was to search the trailer for some extra wire to lengthen the antenna a bit. In no time at all I spotted that dead 12V battery with the clip leads. In less than 2 minutes the clip leads were extending the inverted V and Voila!

The rig could tune the lower 40m band. I continued to make contacts on 40m until my shift was drawing to an end. My graveyard shift (who was tentative) didn't show but I was tired and needed to get home to deal with some family stuff. I was getting ready to shut things down when Phil KA9Q who was working with Art KC6UQH at the satellite station volunteered to work some CW on 40m. We switched the rig to CW but the keyer wouldn't put the rig into TX. The PTT problem on PSK came to my mind. They both worked at home but now they didn't. I remembered that the Microham interface uses a DB15 shell to make the ground connection for both CW and PTT and that I had removed the cover a few weeks earlier to make a repair. The shell was not making contact. I put a little side load on the wires that allowed the shell to contact the ground post on the interface box and in a short time we were on 40m CW. Shortly after I headed for home for some much needed rest.

Sunday morning came along soon enough. I went back to the site to fill the generator and get things set for the morning shift. During the evening after Phil turned in we had another operator named Bob take over and work SSB for a few more hours. I got everything set for the morning shift but that shift was tentative also. I needed to get going to church so I left the station in the hands of Conrad. Shortly after I left Ron K2RP showed up with a friend and they both worked CW till the end at 11:00am.

Now that I have been a band captain I know a little more of what to expect and what I can expect to go wrong. All experience is good experience if it can be used to improve things in the future or to help others. If you have never been a band captain or operated a FD station I highly recommend it. It is fun, you will build relationships and you will learn things both technical and personal.

At the end of FD I volunteered to take the trailer home for a little while to make some much needed repairs and cleanup. There will be more on the trailer in the future.

Loren Hunt AD6ZJ

During Field Day, PARC member children played at Guajome Park playground and toured the stations. Near one of the generators, a sign reading “sensitive wildlife habitat do not enter” could be seen. Water barrels hold down the towers.

Many new hams were able to participate in Field Day, which was a primary goal for this year's event. Gaining experience on the air in a variety of ways enhances enjoyment of the hobby and contributes to being more prepared to contribute in a communications emergency. Field Day is a significant opportunity for the club to demonstrate, teach, experiment, and socialize.

If you would like to volunteer for 2010 Field Day, please contact the board of the Palomar Amateur Radio Club.

Johnson Viking Transmitters and Accessories of the 1950s

By Ron K2RP

The 1950s, in my opinion, was the "Golden Age" of US-based amateur radio manufacturing. Companies such as Hallicrafters, Hammarlund, Johnson, National, WRL, Drake, Collins, Heathkit, and many others offered dozens of models of receivers, transmitters, and accessories. Improved models were introduced almost annually in some cases.

The E.F. Johnson Company, of Waseca, MN had long been a manufacturer of components, notably variable capacitors, coils, and electronic hardware. In 1950, they entered the amateur market with the "Viking I," a medium power AM and CW transmitter in kit form. It was an immediate success. An accessory VFO soon followed, along with numerous accessories such as electronic TR switches and the famous "Matchbox" antenna tuner.

By the mid 50s, Johnson offered a full line of transmitters, amplifiers, and accessories ranging from the "Adventurer," a 50W novice unit, to the "Desk Kilowatt" amplifier. Most were offered both in kit and factory wired versions. One measure of the effectiveness and popularity of particular models in this time frame is their use by "top gun" stations of the era. Fortunately, during this time, QST published a list of the transmitters and receivers used by section winners of the popular Sweepstakes Contest, which then, as now, attracted many serious operators.

An analysis of the reports in the May and June 1959 issues of QST, where the 1958 CW and phone Sweepstakes results were reported, shows that out of approximately 150 winners, a remarkable 33% were using Johnson equipment. By comparison, the next most popular, Heathkit, was the transmitter choice of 23% of winners, followed by Home Brew, 22%; Collins, 7%,; Hallicrafters, 6%; and others, 9%. Note that this was all before the popularity of SSB, so the phone winners were using AM.

While the Johnson equipment did not carry the price tags of similar power Collins gear, it was more expensive than some of the lower priced lines with similar specifications. For example, the "Adventurer" novice 50W unit cost $55. Knight Kit, from Allied radio, offered a 50W novice kit with the same tube lineup (a 6AG and an 807) for $39. The Adventurer was more popular, despite its 50% higher price, because of Johnson's reputation for quality components and engineering. The Viking I and Viking II competed with the less expensive Heath DX100, and were very successful as well, for the same reasons.

In 1954, the Viking Ranger was introduced, both in kit and wired versions. The power input was only 75W on CW, and 65W on plate modulated phone, and cost $230 in kit version or $330 wired and tested. It included a built in VFO and covered the 160 through 10m ham bands, and used a single 6146 tube in the final. About the same time, a Heathkit DX35 and accessory VFO could be had for less than $80 with about the same power available. But, the Ranger had plate modulation for AM compared to the screen modulator in the Heathkit, and the Ranger was a much more sophisticated and substantial unit. Novices were limited to 75W, crystal controlled, and the Ranger had the ability to use crystals. When the Novice upgraded, the Ranger made a fine exciter for a higher power amplifier, which Johnson offered as well.

But, many hams wanted higher power without the expense and complication of a separate amplifier, so in 1956, the Viking Valiant was introduced. This transmitter was a Ranger on steroids! Instead of the single 6146, this transmitter had 5! Three were used in the final, and two in the modulator. Everything in this rig was heavy duty, and it weighed 85 lbs. Power input, as it was measured at that time, was a respectable 275W on CW, and 200W on AM. Mine puts a solid 200W output on CW, and 150W on AM. Cost was $350 in kit form, or $439 wired. SSB was still in infancy, but the future was becoming clear, and the Valiant had provision for an external SSB adapter. Several manufacturers offered such adapters, which put out about 10W or so of SSB on the proper frequencies. The Valiant, as did other transmitters of the era, had provision to use the

continued on page 14

continued from page 13

amplifier stages and power supplies to enable SSB operation. Johnson produced an SSB generator in the early 60s to match the Valiant II, a cosmetically redesigned model.

The Ranger and Valiant were two of the most popular transmitters of the 50s. They're still in high demand today, with a perfectly restored Valiant commanding in the $1000 range.

I was fortunate to have a Ranger in the early 70s, which I used mostly for CW and RTTY, and wish that I had kept it. It was a reliable transmitter despite heavy usage.

A couple of years ago I was able to obtain a Valiant in poor condition, and it languished in my garage. I was inspired to tackle this project recently, when a friend developed the ability to silkscreen panels. My panel was in terrible shape, so I had it redone. It came out so well that I was decided to get it on the air. The result is shown in the photo. Also shown is a Johnson Matchbox antenna tuner, which was also very popular. These were made in two sizes: The 275W version is shown below, and there is also a 1 KW version. Both are in demand and are commonly used today, with both vintage and modern rigs. I have owned this one for at least 40 years!

If you want to hear the sound of AM, tune into 3870 most evenings, but particularly Monday and Wednesday evenings. The AMI (Amplitude Modulation International) nets meet on those days, 7:30 PM local on Mondays, 8:00 PM on Wednesdays. Check ins vary between 15 and 60 stations, all using AM, mostly with vintage gear ranging from simple screen modulated transmitters to converted broadcast transmitters. Each station describes the equipment used.

If you keep track, you'll notice that on a typical evening, nearly half of the stations are using Johnson transmitters! You'll probably hear me check in with my Valiant or Viking I!

SCOPE

P.O. Box 73
Vista, CA 92085-0073

Address service requested

Scope (USPS #076530) is published monthly by the Palomar Amateur Radio Club 1651 Mesa Verde Drive, Vista, CA 92084. POSTMASTER: Send address changes to SCOPE, P.O. Box 73, Vista, CA 92085. Periodicals postage paid at Vista, CA 92084. Dues are $20 per year or $35 per year for a family. Dues include a subscription to Scope.

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

Featured Program

The program for the general meeting at 7:30pm on 5 August 2009 at the Carlsbad Safety Center, 2560 Orion Way, Carlsbad will be Wild Bill WB6BFG talking about his adventures in Honduras.

SCOPE

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

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

Above: One of the PARC annual picnic drawing winners, Bob KC6VDX, claims his prize! Photo by KB5MU.

You may notice some differences with the Scope this month. Due to a change in the postal regulations that rule out the use of staples in certain places on periodical publications, we have to change the way we fold and staple our club newsletter. The newsletter is now printed two pages to an 11" by 17" sheet of paper, then folded, then stapled down the center, then fastened closed with circular white stickers.

The explanation for these changes to the regulations is to prevent the staples from catching in the post office machinery.

A second change to the newsletter is the use of a new type of layout software. I decided to switch from Microsoft Word to Adobe InDesign.

There were two reasons for this. First, the number of text boxes required to lay out the Scope the way that I want to caused Word to run very slowly. The trial of InDesign didn't have this performance degradation. Second, InDesign provided many more options and degrees of freedom in terms of layout and newsletter design. It's a more powerful program, and I hope to use it to full advantage to improve the Scope.

This is where you come in! Have you ever considered writing an article for the Scope? Had fun with amateur radio lately? Have a question that you need answered? Have you been to a convention, built a kit, or made a clever repair? Do you know someone who has? Let me help you turn it from good intentions to text.

Mail me at:
scope@palomararc.org

Save the Date

Club Meeting
2 September 2009

Amateur Satellite Service presented by Art KC6UQH 7:30pm at the Carlsbad Safety Center

Board Meeting
9 September 2009

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

Noble Canyon 50k Run
26 September 2009

Volunteers needed to provide public service communication at this very enjoyable event.

Annual Picnic

by Michelle W5NYV

PARC's annual picnic was held at San Dieguito park on 15 August 2009. The party, a longstanding end-of-summer tradition for the club, started at 10:00am and ended at 5:00pm. PARC operated an HF station on site with a 10m/15m/20m tribander supported by a tower trailer. See page 10 of this issue of the Scope for an update on the progress on the club tower trailer.

Above, Jo KB6MNK and Al W6GNI

Early-arriving members set up the tower trailer, with Conrad KG6JEI bringing the tower trailer to the picnic in the morning and providing towing services at the end to take the tower trailer back home to TOWizard. The radio was an ICOM 735 provided by the club.

Members used the station to make contacts as well as participate in the NAQP single sideband contest. Over 30 contacts were made in the contest, with Germany as a notable DX. We bumped into a few people on the air that were operating the International Lighthouse/ Lightship Weekend.

See http://illw.net.

Due to the lack of a completed external oscillator, we did not have the planned microwave station at San Dieguito for the 10GHz and up contest.

Above, participants eat lunch at the annual PARC picnic. Below, Conrad KG6JEI grills hamburgers and hot dogs.

Michelle W5NYV brought a solar telescope to show picnic attendees and guests the underlying reason that band conditions stink. Zero sunspots were confirmed through the Coronado Personal Solar Telescope.

The first inaugural Transformer Toss was a success with 7 participants. K6SML took an early lead, but KC6VDX came from behind and won the Distance Division. K6SML placed second and KG6FIX showed well in third. K6KAL hit a branch and was robbed. Paul KB5MU won the height division, with a toss straight up and straight back down. No toes were harmed in the process of tossing transformers. Conrad supplied the power supplies and Andy disassembled the supplies to yield the 5-10+ pound transformers for the toss.

Competitors in order of appearance: Michelle W5NYV, Patrick K6SML, Bob KC6VDX, Marcia KG-6FIX, Conrad KG6JEI, Richard K6KAL, and Paul KB5MU.

Michelle W5NYV brought a hidden transmitter (Kenwood D7 with Byonics foxhunting controller) and Paul KB5MU brought four 2m handheld direction finding three-element yagis made from PVC pipe and steel 1" measuring tape. See http://home.att.net/~jleggio/projects/rdf/tape_bm.htm for construction details. The first round of transmitter hunting (also called t-hunting or foxhunting) was an easy warmup with the transmitter hidden behind a trash can in the women's restroom. The second and third locations were out in the park. Multiple teams participated, and several hunters brought their own tape-measure yagis. Future transmitter hunts will be held at club meetings and events whenever possible.

The potluck lunch was supplemented by hamburgers and hot dogs provided by the club. There were many notable dishes, including cobbler, Conrad's chocolate brownies, potato salad, watermelon, cookies, and cupcakes. Loren AD6ZJ and Conrad KG6JEI staffed the grill.

The prize drawing closed out the picnic, with Jo KB6MNK winning the grand prize of $100 HRO gift certificate. Bob Birch, Greg, and

continued on page 5

October Auction Site and Schedule

by Michelle W5NYV

It's almost October, and that means it's auction time. Come to the General Meeting on October 7th and join the fun! 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.

The auction will be held in a different place this year. Instead of our usual location in the Carlsbad Safety Center, the auction will be held across the street in a building that used to be The Farmers Insurance Company. The building was purchased by the city of Carlsbad and is located at the southwest corner of Faraday and El Camino Real. Enter the parking lot on Faraday.

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.

Pictured above is Loren AD6ZJ bidding on a treasure at the 2008 PARC Auction.

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.

Come on out to the auction this year and see what the new building looks like and what notable items are bought and sold!

Help Wanted

High-Wattage Power Supply Designer

by Edward Kearey KC6VXY
August 22, 2009

I have recently talked with the Owner of Mesa Power Systems, Ed Bohorquez of Escondido (Full address listed below) regarding his need for some part time help in the design of high power DC power supplies. Ed is the Marketing guy and the deceased brother Bill was the design guy of the company products.

Owner Ed and his brother have owned the Mesa Power Systems company in Escondido for over 20 years. At one point in time they employed as many as 80 people. With the downturn in the economy and the death of the technical brains (Ed's brother) the company has run on to hard times. They are now running on a skeleton crew.

The immediate need for the designer is to correct some RF noise riding on the output of a DC power supply (800 watt) sold to a large corporation of San Diego. The San Diego company has returned 8 of the power supplies with the noise. Since the deceased brother did the power supply design, Ed needs someone to design the noise fix. The job could be by that job only or based on part time work to include other design work.

I am a member of both the Escondido and Palomar Amateur Radio Clubs so I know we have the needed talent in our clubs to design the needed filter. Hopefully you will provide this information to those you think may be interested in tackling this task. Listed below is the company information.

Mesa Power Systems – Ed Bohorquez, President
2250 Micro Place,
Escondido, CA 92029
Tel: 760-489-8162
Fax: 760-489-5718
Email edb@mesapower.com
Web site: http://www.mesapower.com

Thanks for any help you can provide.
Ed Kearey San Marcos, KC6VXY
760-744-8327

Club Reports

Membership Report

New Members Joining PARC: KJ6ACO.
And one member paid a 5 year renewal!
And 5 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! N6WXD, K7MOA, K7WCC, KI6QDP, W6CDU, K6BZZ, KI6SAT, KD6FKN.

7 out of 8 of these are listed for the second time.

The club does need your support!

Al
W6GNI

Fold and Staple

W6GNI Al & Kathy & Julie
WA5ACE Sonny
KB6YHZ Art

continued from page 2

Rosemary also won gift certificates to HRO. Congratulations to all the winners!

There were 277 participation points entered into the drawing. The more participation points a member has, the more tickets the member gets to enter into the drawing at the picnic, up to a maximum of 20 tickets. Attending meetings, volunteering, and attending events earns participation points.

Clockwise from above, tickets are randomized by Conrad, a prize winner comes forward, winners are drawn, another prize winner comes forward, and tickets are checked after a winning numbers is announced.

Hi Michelle,

I just wanted to let you know that the Vista 146.970 repeater is back on the air under new ownership, new coordination and new equipment. All new. It is an open repeater in the City of Vista, negative offset, PL of 107.2 and carries the callsign KA3AJM. It is sponsored by the Desert Communications Network (DCN) and MetroNET, and site location is provided by Amateur Radio Community Services (ARCS). We welcome all amateurs in the area to use the new repeater. We will soon be adding 10 meter, 6 meter, 2 meter, 220 and 440MHz remote bases to it so folks can enjoy those bands all from the comfort of their 2 meter HT or portable. No dues are required or requested.

I am the owner of the repeater, and just want to let folks know its there if they'd like to use it. It would sure be great if you could put a small blurb in the SCOPE about it.

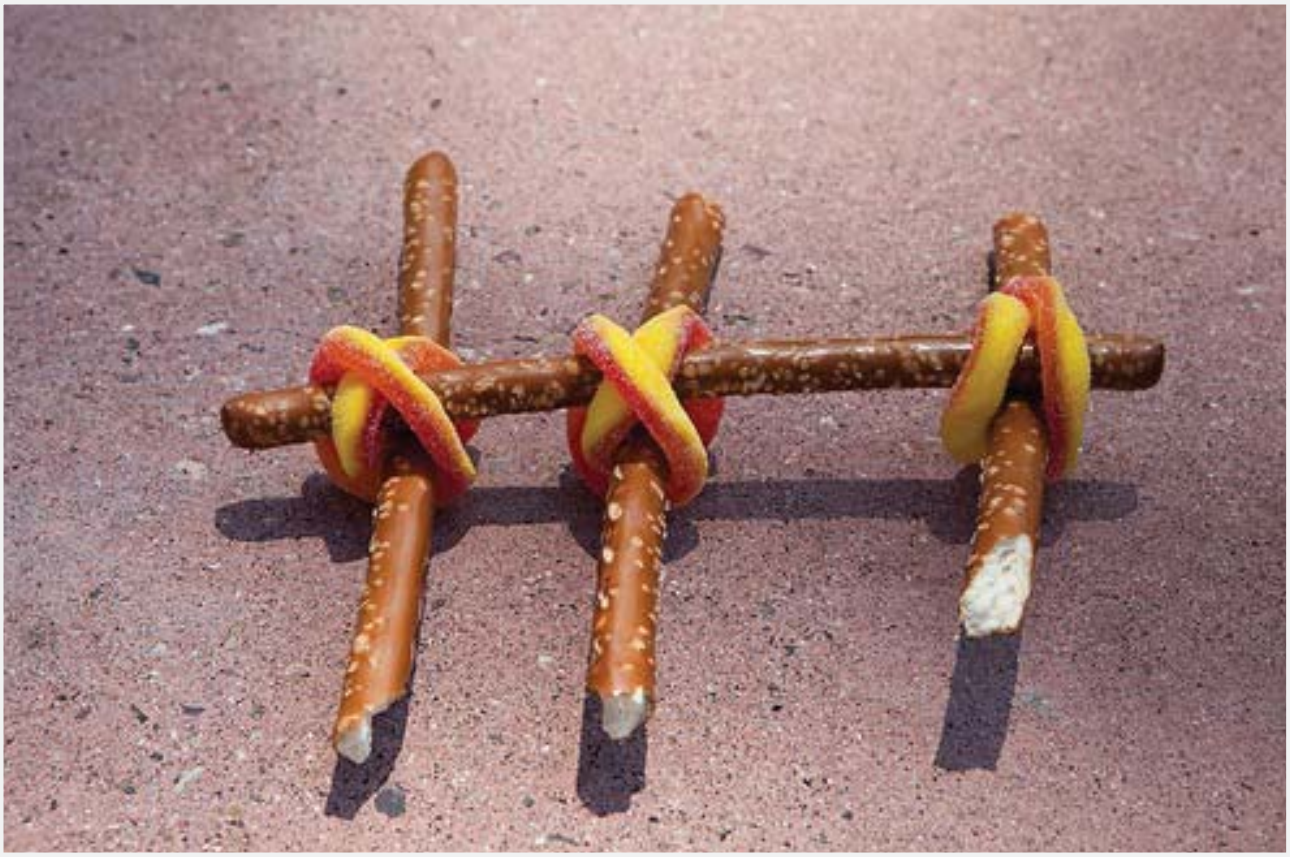
Best Regards,

Chris Baldwin, KF6AJM

Did you know that RF Parts has an excellent amateur radio museum in the front room?

Merit W6NQ has an outstanding collection of radios, ephemera, and tubes, and he can remember when the Palomar Amateur Radio Club was small enough to meet in members' living rooms.

If you're near San Marcos Fry's, drop by and shop at RF Parts.



A Gain (Weight) Antenna Design

by Michelle W5NYV

The Pretzel Yagi is an easy-to-build, easier-to-use confection constructed from pretzel sticks and Gummi Omnis.

Two Gummi Omnis are utilized per element. Resonant frequency is obtained by trimming the elements to taste.

While feed lines have been proposed of licorice, the current consumption was found to be too high in a series of experiments at the 2009 PARC picnic.

Additionally, the salt pattern was licked into a toroidal carbohydrate module, which was then used in an ARDF (Appetite Relish Dinner Finding) application. Seconds were then served as soon as the indulgence match was made.

Other areas of research include an eggbeater antenna that should lead to better cake response.

Hacking With GNU Radio - A Report From DEFCON 17

by Michelle W5NYV and Paul KB5MU

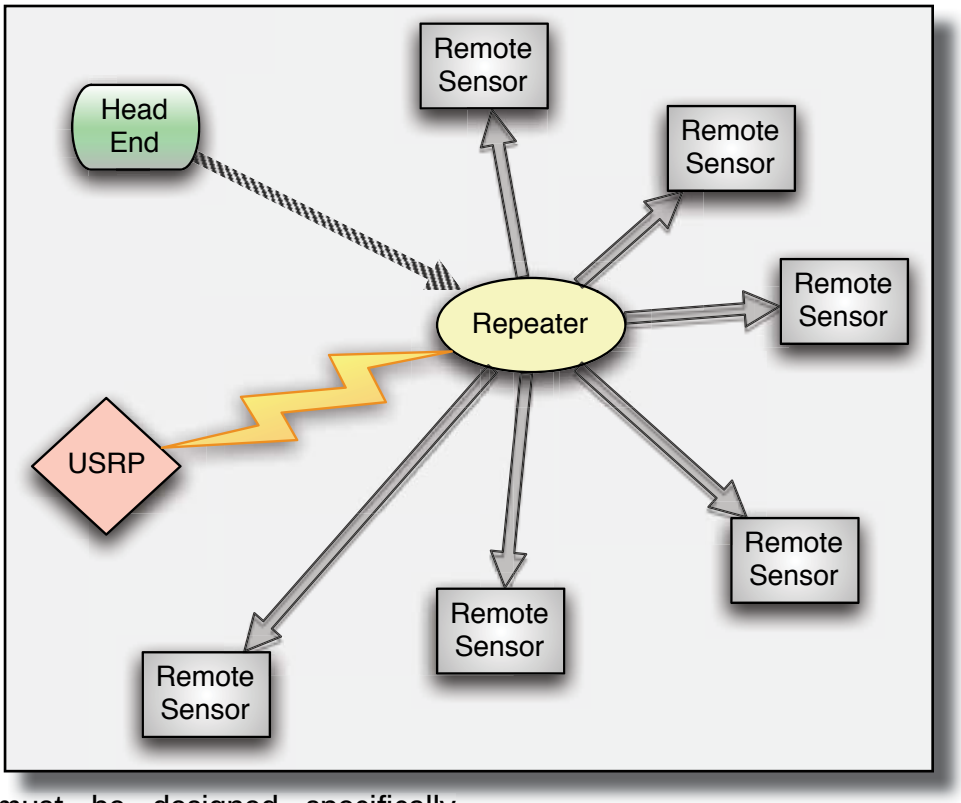
One of the first presentations at the DEFCON[1] computer security convention held 30 July - 2 August 2009 in Las Vegas, NV was "Hacking With GNU Radio" by David Bryan.

GNU Radio is a free software toolkit for developing and using software-defined radios (SDRs). It's popular in amateur radio community as well as in areas of wireless research. In order to use GNU Radio, you first obtain appropriate hardware, such as the USRP (The Universal Software Radio Peripheral). The USRP is a high-speed USB-based board primarily intended for SDRs. Then, load an appropriate operating system, such as Ubuntu, and install the components required for GNU Radio.

There are two version of the USRP in circulation. Version 1.0 employs USB 1.0, and version 2.0 of the USRP employs gigabit Ethernet. Version 2.0 allows for more bandwidth.

Equipment designed and sold for operation in any specific radio service has to meet certain requirements in order to obtain an "Equipment Authorization" (EA) from the FCC. For transmitting equipment, there's always a maximum power output limit, of course, but that's not all. Devices for most radio services must be designed specifically to cooperate with the normal procedures of that service, and must not allow the user to modify the device's behavior in any non-standard way. This is supposed to make it difficult to use an off-the-shelf device for any unintended purpose, whether you call it "wireless security research" or "hacking".

These requirements don't apply to lab test equipment, which is why the USRP is sold as test equipment. It can be programmed to do anything you like, within its performance capabilities. It is, of course, a violation of FCC rules to use a USRP in any radio service that requires Equipment Authorization. The amateur radio service doesn't require EA, but almost every other service does. This doesn't stop everybody. David cited several examples of successful hacking of wireless networks with GNU Radio that included RFID payment cards, GSM phones, frequency-hopping bluetooth, and multiple access systems.



David described an experiment in which the GNU Radio was used to interrupt the normal operations of a particular type of multiple access system called a Supervisory Control and Data Acquisition (SCADA) system. The system in question was a mulitple-access 900MHz star broadcast supervisory control and data acquisition wireless network used for water pump monitoring and management.

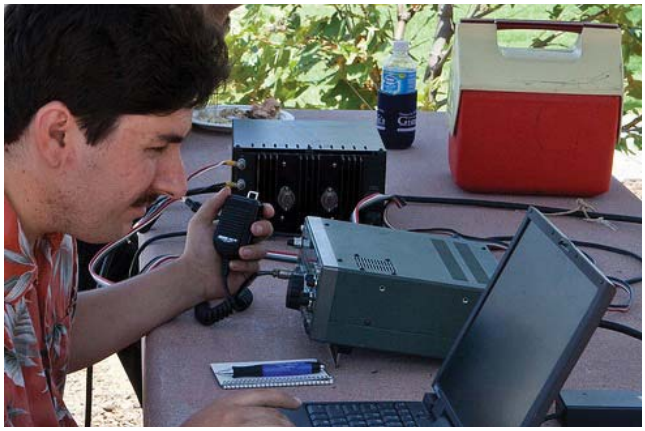
The "head end" of the network transmits commands, which are amplified by a repeater, to remote sensors. The remote sensors then report water level. The head end is the commanding node of the network. David showed a slide of the

continued on page 10

1 www.defcon.org

CORRECTION: It was erroneously reported in the caption of the above photo in the August 2009 issue of the SCOPE that "Steve Venner W6TAN receives certificate of appreciation from Dennis Baca KD6TUJ." The correct caption should read "Steve Venner W6TAN and Dennis Baca KD6TUJ celebrate the completion of the redesign of PARC QSL card with an exchange of original art work." Scope editorial staff apologize for the incorrect caption previously printed.

Above, participants at the PARC picnic gather at a table. Kites, brought by Loren AD6ZJ (at right), can be seen on the table in the foreground. Terry, in the white shirt and dark hat, brought samples of the chocolate that the company he works with makes. Below, Terry takes one last trip down the food table. At right, W6YOO. Below right, the HF station makes a contact in the contest.



continued from page 8

network, roughly reproduced in the graphic on page 8, and asked the audience where would one attack the network. The answers given were 1) be the repeater 2) intercept the communications and 3) become the head end.

For option 1, David explained that this requires a nontrivial amount of power. In order to become the repeater, one has to have enough RF power to reach the remote sensors or compete with the existing repeater. This may not be feasible with a portable research tool. For option 2, David's comment was that while this was feasible, it wasn't the simplest attack on the network. He proceeded to discuss option 3, which many hams would recognize as the best way to interfere with a star broadcast system. Since most ham repeaters are have essentially the same network topography, David's hack is similar to a jammer on a repeater.

David built up a gain antenna for the GNU radio, parked near the repeater, and keyed up the transmitter in a mode that duplicated the head end. Simply keying up the transmitter brought the entire system to a halt. Because the management and control of the remote sensors was all "in band", the remote pumps could not be managed as long as the GNU radio was transmitting on the expected head end frequency. This particular network was wide-open, with no authentication, no PL tone, no CTCSS, and had a single-in multiple-out repeater-based design. The effect was a shut down of the water pumps that served that particular water district. This type of attack is called "denial of service" (DOS). If carried out long enough, a DOS attack would result in a widespread water outage. Since many systems, groups, institutions, and activities depend on the availability and integrity of the water supply, such a disruption would have considerable negative consequences.

The SCADA transmitter was located about a block away from the repeater. Repeater locations could be determined, according to David, by using the universal licensing system at www.fcc.gov. This is true of some classes of licenses, but not all classes of licenses. For example, a ULS geographical search of W6NWG does not return the coordinates of our repeater. However, a ULS geographical search of San Diego County returns several different types of transmitters with sets of tower coordinates in latitude and longitude.

See the following URL for one of the examples generated in the above search:
http://wireless2.fcc.gov/UlsApp/UlsSearch/license.jsp?licKey=1910364

Research into wireless weaknesses, especially when they concern vital infrastructure such as the water system, is necessary. Demonstrating weaknesses needs to lead to improved wireless systems. The remote sensor system in question could be improved by using encryption, using mesh network topology instead of relying on every transmission going through a central node, and using out-of-band management and control.

Each of these defenses has advantages and disadvantages, but any of them would improve the ability of the wireless network to resist attack.

The conference was overwhelmingly white and male, tilted heavily towards the younger black-T-shirt-wearing end of the spectrum. While this wasn't surprising, the total lack of overlap between conferences such as TAPR, AMSAT, and other amateur radio gatherings was noticed. No familiar names were in the speaking schedule, and while there was an announced ham simplex channel for the event and hams attending (several from Southern California introduced themselves to me during the weekend), there was very little visible evidence of an amateur radio presence at an event that drew an estimated 10,000 homebrewers and hackers.

Tower Trailer Update

by Dennis KD6TUJ

The tower trailer continues to evolve. A base and tie downs for the elements was added before the picnic. As the storage side is built up, the fold-over tie downs will rise to the top of the storage and have a cover connected to the top. Also added were stop/marker lighting and the mounting of the license plate.

Another Trailer Story

by Dennis KD6TUJ

The PARC trailer has many stories to tell. The latest occurred in this year for Field Day and in support of the Cubs in Space Day Camp. Of the many things that can occur, who would think that a tow truck operator would have problems towing a small trailer across a couple of miles?

For field day, Conrad KG6JEI, brought the trailer to Guajome Park. At the end of field day Conrad brought the trailer to Loren's AD6ZJ house for additional clean up. Loren cleaned up the trailer further and uninstalled the tower as it was no longer usable as designed. The 4th section insulator is no longer staying in place creating a jam situation.

On Sunday before Cub Scout week started I took the trailer to the Antique Tractor and Steam Museum. The adventure begins the trailer is connected to the truck so we can bring over. As we leave and turn onto Bobier the trailer stand rubs the road as we go across the drainage and decides to disconnect. We discover this as we are turning right and the trailer continues straight for about 3 feet. Great. I shook the trailer up and down when I connected it, no problem. Oh well. Blocking traffic in the slow lane I reconnect the trailer and chain it up. Continuing on, we proceed to the signal at the bottom of the hill at North Santa Fe. Stopping for the signal the trailer decides to continue until the chain tightens up. Blocking traffic again, set the mount back on the ball, get around the corner, slide up to the curb, and CHAIN DOWN the hitch. Now, let's try to get there.

Starting again, here we go. Now to travel on the driveway to behind the barn. Not bad, going slow, and lots of potholes. Alright, got through those. Let's make a left to go around to the back

...and not again! Reconnect again. Finish the last 100 feet.

Setting up the trailer for the Scouts was short and simple. As I lean against the trailer the "box" shifted. What was that? I leaned against the trailer again. It shifted again. Not a good sign.

This trailer has served PARC for over 30 years and is over 50 years old. I am sure it has been many places. Across the years it has seen numerous rains, parked for long periods without attention, and became home to many less fortunate critters that may not have had a home. There are obvious signs of water damage in the roof area that must have progressed to the framing. This is damage that is yet unseen. The hitch was looked at after the tow out and it was concluded that the lock was not activating properly. A lot of WD-40 later it seemed to work better.

At the Board meeting we decided that the service life has come to an end for this trailer. We will be looking for another trailer about the same size, with a solid frame, in our price range.

SCOPE
P.O. Box 73
Vista, CA 92085-0073

Address service requested

PERIODICALS
POSTAGE PAID
AT VISTA CA
92085-9998

Scope (USPS #076530) is published monthly by the Palomar Amateur Radio Club 1651 Mesa Verde Drive, Vista, CA 92084. POSTMASTER: Send address changes to SCOPE, P.O. Box 73, Vista, CA 92085. Periodicals postage paid at Vista, CA 92084. Dues are $20 per year or $35 per year for a family. Dues include a subscription to Scope.

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

Featured Program:

Art KC6UQH will be the featured speaker at our September membership meeting. His talk will be about the Amateur Radio Satellite Service. Meet at the Carlsbad Safety Center at 7:00pm for a half hour of socializing before the meeting. Program starts at 7:30pm.

SCOPE

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

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

Annual Auction Location Has Changed

Please note that the location for the PARC auction has changed since last issue of the Scope.

The location for the October 7, 2009 auction will be at 3096 Harding Street, Carlsbad, CA 92008.

from I-5 Get off at Carlsbad Village Drive. Go west 1 block to Harding street (Jack in the Box on corner). Turn left (South) 2 blocks.

The room is a fair size with lots of tables and chairs. There is a PA with wireless hand mike or lapel mike. Parking is on the street, accross the street. Nearby church parking is available.

On the side street there is a door in addition to the front double door. They will provide a projection screen for us to use. Room set up starts at 5:30 PM when the karate class is finished. Sellers are allowed in at 6:00pm, buyers allowed in at 6:30pm. Auction begins at 7:00pm.

Quiz: Why isn't this call sign in the photograph above in QRZ? Where would you find information about the license holder? Where do you think this photograph was taken? Send answers to scope@palomararc.org. Photo by W5NYV.

Save the Date

Club Meeting
7 October 2009

Annual Auction
3096 Harding Street,
Carlsbad, CA 92008
Buyers in at 6:30pm

Board Meeting
14 October 2009

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

Shake Out Drill
15 October 2009

SATERN will be using the 147.075 repeater for check-ins during this communications drill.

Annual Statement of Ownership

Statement of Ownership, Management, and Circulation (From PS Form 3526)

1. SCOPE 2. 0765-30 3. 09/17/09
4. Monthly 5. 12 6. $3
7. Palomar Amateur Radio Club
1651 Mesa Verde Dr. Vista, CA.
San Diego County, 92084-5324
8. A. L. Donlevy 1651 Mesa Verde Dr.
Vista, CA 92084-5324
9. A. L. Donlevy
P.O. Box 73 Vista CA 92085
Editor Michelle Thompson
5379 Carmel Knolls Drive
San Diego, CA 92130
10. Palomar Amateur Radio Club
P.O. Box 73 Vista, CA 92085-0073
11. None 12. No Change
13. SCOPE 14. 09/09

15. Copies	Average	09/09	Notes
a.	258.	200	Printed
b1.	0	0	PD out of Co.
b2.	235	182	Pd in Co
b3	0	0	
b4.	4	2	Other mailed
c.	239	184	
d1.	0	0	Free out Co (3541)
d2.	6	5	Free in Co
d3.	2	2	Other Class Mailed
d4	10	14	1st Class Paid
e.	18	21	Sum 15d 1 - 4
f.	257	205	Total Free/Dist.
g.	2	2	Publisher Copies
h.	259	205	Sum 15f + g
i.%	93.00	89.76	15c / 15g x 100

Printed October 2009 issue of SCOPE
(Mailed Sept. 2009)

Signed: A.L. Donlevy Publisher
09/30/2009

For Sale

MFJ-949e 300 Watt Tuner. Like new (used twice).
New $179.95...sale price $125.00.

Two 75/40 Meter SWAN traps for $20.00. And one book free with each purchase,"Fundamentals of Radio" by Gordon Hathaway 6th printing 1953 and Radio Handbook, Sixteenth Edition by William Orr, W6SAI, 1962.

Sonny Stires <sstires@cox.net>

CORRECTION: It was erroneously reported in the caption of the above photo in the September 2009 issue of the SCOPE that "Steve Venner W6TAN and Dennis Baca KD6TUJ celebrate the completion of the redesign of PARC QSL card with an exchange of original art work."
The correct caption should read "Dennis Bacca, KD6TUJ receives a certificate of appreciation from Steve Venner, W6TAN for his generous help at the FARC auction in April." Scope editorial staff apologize for the incorrect caption previously printed.

October Auction Site and Schedule

by Michelle W5NYV

It's almost October, and that means it's auction time. Come to the General Meeting on October 7th and join the fun! 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.

The auction will be held in a different place this year. Instead of our usual location in the Carlsbad Safety Center, the auction will be held 3096 Harding Street, Carlsbad, CA 92008.

From I-5 Get off at Carlsbad Village Drive
Go west 1 block to Harding street. Turn left onto Harding. The building is right after Jack In The Box.

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.

Pictured above is Loren AD6ZJ bidding on a treasure at the 2008 PARC Auction.

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.

Come on out to the auction this year and see what the new building looks like and what notable items are bought and sold!

Help Wanted

High-Wattage Power Supply Designer

by Edward Kearey KC6VXY
August 22, 2009

I have recently talked with the Owner of Mesa Power Systems, Ed Bohorquez of Escondido (Full address listed below) regarding his need for some part time help in the design of high power DC power supplies. Ed is the Marketing guy and the deceased brother Bill was the design guy of the company products.

Owner Ed and his brother have owned the Mesa Power Systems company in Escondido for over 20 years. At one point in time they employed as many as 80 people. With the downturn in the economy and the death of the technical brains (Ed's brother) the company has run on to hard times. They are now running on a skeleton crew.

The immediate need for the designer is to correct some RF noise riding on the output of a DC power supply (800 watt) sold to a large corporation of San Diego. The San Diego company has returned 8 of the power supplies with the noise. Since the deceased brother did the power supply design, Ed needs someone to design the noise fix. The job could be by that job only or based on part time work to include other design work.

I am a member of both the Escondido and Palomar Amateur Radio Clubs so I know we have the needed talent in our clubs to design the needed filter. Hopefully you will provide this information to those you think may be interested in tackling this task. Listed below is the company information.

Mesa Power Systems – Ed Bohorquez, President
2250 Micro Place,
Escondido, CA 92029
Tel: 760-489-8162
Fax: 760-489-5718
Email edb@mesapower.com
Web site: http://www.mesapower.com

Thanks for any help you can provide.
Ed Kearey San Marcos, KC6VXY
760-744-8327

Club Reports

Membership Report

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! N6WXD, K7MOA, K7WCC, KI6QDP, W6CDU, K6BZZ, KI6SAT, KD6FKN.

7 out of 8 of these are listed for the second time.

The club does need your support!

Al
W6GNI

Fold and Staple

W6GNI Al & Kathy
KB6NMK Jo
WA5ACE Sonny
KB6YHZ Art

Friday Lunch Bunch Invites You To Attend

Above, Friday Lunch Bunch participants eat at the Spices Thai in Carmel Valley in early September 2009. Below, the Lunch Bunch meets at the Super Buffet in Miramar in late September 2009. Photos by W5NYV.

I recently made my way down to the Texas BBQ on Mira Mar Road on a Friday to join what as been dubbed the Lunch Bunch. Every Friday for over 11 years an informal group of hams have been meeting in and around the UTC area to chat about the newest rig or antenna project.

"It all started with just me Tom W0NI, Harv K6QK and who ever could join us" said Ted Storke KD6AKT. "I would talk it up on the 146.730 machine and some times we'd have 5 or 6 hams join us. Soon I would get the question where is lunch this Friday?"

"We realized a lot more folks would join us if they had some notice where we'd be meeting", said Tom Ellett W0NI.

"So, about 7 years ago I put the lunch bunch online on my web site KA6K.com and now www.W0NI.com. You can just submit your call sign and you'll be added to the list (no user IDs or password needed). Then every Wednesday you'll get an email from me as to where the Friday lunch will be this week. We rotate around to 8 different restaurants within a 5 mile radius of Sorrento Valley, where many of the hams work. Now, with Ted talking it up on the air and the email reminder we often have 10+ join us. Where else can you sit down and have lunch with 10 experts on your favorite subject? Somebody in the group will have the answer to whatever problem you're trying to solve or get you some good advice on which rig to go for. So, if you meet someone new to San Diego tell them about the lunch bunch and direct them to w0ni.com."

Opinion: HR 2160

by Paul KB5MU

If you follow ham radio news at all, you will have already seen articles encouraging you to write your Congressman in support of HR 2160, "The Amateur Radio Emergency Communications Enhancement Act of 2009". What is this all about? Read the bill for yourself! It's only six pages, double-spaced, and you can readily find it on the web by searching for "HR2160". It's written in plain English, more or less.

Once you get past all the descriptive text, which is extremely positive about amateur radio's contributions in public service, disaster relief, and emergency communications, the substance of the bill is rather modest. It calls for a study to be made and reported to Congress. That's all. No actual changes to any law or regulation are in this bill.

The study is to be made by Homeland Security, "on the uses and capabilities of Amateur Radio communications in emergencies and disaster relief". The study is supposed to come up with recommendations in two main areas, one rather general and one quite specific.

The more general study topic is to find "enhancements in the voluntary deployment" of hams and "improved integration" of hams "in planning and in furtherance of the Department of Homeland Security initiatives". This gives DHS a rather broad charter to come up with ways to bring ham radio volunteers out of the woodwork and under their aegis. If you like the idea that ham radio volunteers are getting more and more organized under various public agencies, with formal training and credentials and drills and, often, burdensome time commitments, then you'll probably be in full agreement with the goals of this study topic. If you think, as I do, that ham radio's strength lies in its diversity, flexibility, technical abilities, and numbers as well as in its discipline and training, you might find this study topic a bit insidious.

The more specific study topic, and doubtless the real meat of the bill, is to look at "unreasonable or unnecessary impediments ... such as the effects of private land use regulations on residential antenna installations." That is, the CC&Rs that effectively prohibit antennas in most newer neighborhoods. The bill calls for an examination of the law that exempts small TV satellite dishes from such restrictions, and specifically whether that exemption should be extended to cover ham radio antennas. Sounds promising, right? Where the existing PRB-1 helps us overcome undue government regulation of antennas, such an exemption could help us overcome restrictions we agreed to in our home purchase contracts, despite whatever our neighbors might prefer. That would improve our legal ability to put up antennas, no doubt, if we don't mind the government unilaterally changing all those private contracts.

In the (unlikely) event that HR 2160 is passed by the House (where it presently has only 7 sponsors out of 435) and also by the Senate and becomes law, a 180-day study period begins. DHS is required by the bill to "utilize the expertise" of the ARRL, and to "seek information from private and public sectors". This probably means that there would be a public comment period, during which you'd be able to submit your ideas and beliefs to the study group for their consideration. They will write a report. Then, the whole process begins anew. The recommendations in the report will have no effect by themselves, except to serve as a starting point for drafting a new bill to enact the recommended changes. Or some other set of changes.

This is how our government works. If you can't pass a bill to do what you want, you write a bill to do a study on what you want, and you try to

continued on page 9

What I Did For My Summer Vacation

by Loren AD6ZJ

As some of you may know, I am a member of the 3905 Century Club (a worked all states and DX awards net). This net meets on or about 7.178MHz and 3.902MHz nightly and has members in all US states, Canadian provinces and many other countries.

More information about the club can be found at www.3905ccn.com

Once a year the club gets together for an "eyeball" meeting and it's in a different state each year. For the 2009 Eyeball I signed up to be the host and after 10 months of planning it went off without a hitch (ok it didn't go perfectly but it did exceed my expectations). We held the Eyeball at the Vista Antique Gas and Steam Engine Museum and we had 68 in attendance for the weekend. Attendees were from just around the corner clear to the East Coast including one club member who had just returned from a tour in Iraq. Everyone who attended had a great time and many commented on what a truly rich and unique experience the museum grounds offer.

Hosting such an event takes lots of planning and coordination but most of all it takes support from local hams and businesses. This event was no exception. Event sponsors included HRO San Diego, Nifty Ham Accessories, Ham4Less, HiQ Antennas, MFJ Enterprises, Yeasu and Icom. The sponsors provided door various door prizes, hats, handouts and bag stuffers. It was great to get local outfits involved and I really appreciate their support. The event also had the support from PARC in the form of a few antennas, the PA system and various other borrowed bits and pieces.

Above, the 40m Four-Square antenna at the 3905 Century Club annual meeting. Below is the 80m in-phase antenna. Photos provided by Loren AD6ZJ.

It seems as though for events like this to happen you need most of all help from friends and family. I had a good crew of help during the event weekend and I must say I could not have pulled it off without them. Wild Bill WB6BFG and Lon K0WJ and others helped early in the week with antenna installation. We put up a Four-Square on 40m and 2 elements in phase on 80m. Wednesday evening when the 40m antenna was ready to test Lon provided his mobile rig running 100 watts. During the course of the evening he worked Finland on 40m SSB at about 7:15pm in full sunlight proving that the antenna was working.

Over the weekend I had a raft of local support including Wild Bill WB6BFG, who was main cook for the Saturday evening banquet and the Sunday breakfast and he was also part of the program by providing his DXpedition presentation. Conrad KG6JEI served as IT support and event photographer. Tom KG6RCW was cook's assistant and all around help. Ellen N6UWW was cook's assistant. My XYL and a few harmonics

continued on page 8

continued from page 7

Melody, Joy and Mary provided banquet setup, serving and cleanup. And, there were others who stepped in to lend a hand to make the event a real success.

This was likely the most memorable vacations I ever experienced, but I needed to get back to my day job to get some R&R.

73 AD6ZJ, Loren

continued from page 6

enlist the support of influential organizations (like DHS) who might be on your side if they knew about the issue. Read the bill below. If you think it's a step forward, albeit a baby step, then go visit the ARRL's HR2160 web page and follow their recommendations on writing your Congressman.

HR 2160

111th CONGRESS

1st Session

H. R. 2160

To promote and encourage the valuable public service, disaster relief, and emergency communications provided on a volunteer basis by licensees of the Federal Communications Commission in the Amateur Radio Service, by undertaking a study of the uses of amateur radio for emergency and disaster relief communications, by identifying unnecessary or unreasonable impediments to the deployment of Amateur Radio emergency and disaster relief communications, and by making recommendations for relief of such unreasonable restrictions so as to expand the uses of amateur radio communications in Homeland Security planning and response.

IN THE HOUSE OF REPRESENTATIVES

April 29, 2009

Ms. JACKSON-LEE of Texas (for herself, Ms. BORDALLO, Mr. LUETKEMEYER, Ms. KILROY, Ms. ZOE LOFGREN of California, and Mr. THOMPSON of Mississippi) introduced the following bill; which was referred to the Committee on Energy and Commerce

A BILL

To promote and encourage the valuable public service, disaster relief, and emergency communications provided on a volunteer basis by licensees of the Federal Communications Commission in the Amateur Radio Service, by undertaking a study of the uses of amateur radio for emergency and disaster relief communications, by identifying unnecessary or unreasonable impediments to the deployment of Amateur Radio emergency and disaster relief communications, and by making recommendations for relief of such unreasonable restrictions so as to expand the uses of amateur radio communications in Homeland Security planning and response.

Be it enacted by the Senate and House of Representatives of the United States of America in Congress assembled,

SECTION 1. SHORT TITLE.

This Act may be cited as the 'Amateur Radio Emergency Communications Enhancement Act of 2009'.

SEC. 2. FINDINGS.

The Congress finds the following:

(1) Nearly 700,000 amateurs radio operators in the United States are licensed by the Federal Communications Commission in the Amateur Radio Service.

(2) Amateur Radio operators provide, on a volunteer basis, a valuable public service to their communities, their States, and to the Nation, especially in the area of national and international disaster communications.

(3) Emergency and disaster relief communications services by volunteer Amateur Radio operators have consistently and reliably been provided before, during, and after floods, hurricanes, tornadoes, forest fires, earthquakes, blizzards, train accidents, chemical spills, and other disasters. These communications services include services in connection with significant examples, such as hurricanes Katrina, Rita, Hugo, and Andrew; the relief effort at the World Trade Center, and the Pentagon following the 2001 terrorist attacks; and the Oklahoma City bombing in April 1995.

(4) Amateur Radio has formal agreements for the provision of volunteer emergency communications activities with the Department of Homeland Security, the Federal Emergency Management Agency, the National Weather Service, the National Communications System, and the Association of Public Safety Communications Officials, as well as with disaster relief agencies, including the American National Red Cross and the Salvation Army.

(5) The Congress passed Public Law 103-408 which was signed by the President on October 22, 1994. This included in Section 1 the following finding of Congress: 'Reasonable accommodation should be made for the effective operation of amateur radio from residences, private vehicles

continued on page 10

continued from page 9

and public areas, and the regulation at all levels of government should facilitate and encourage amateur radio operation as a public benefit.'

(6) The Congress passed Public Law 109-295 which was signed by the President on October 4, 2006. This included a provision in the Department of Homeland Security Appropriations legislation for fiscal year 2007 that directed the Department's Regional Emergency Communications Coordinating Working Group to coordinate their activities with 'ham and amateur radio operators' among the eleven other emergency organizations such as ambulance services, law enforcement, and others.

(7) Amateur Radio, at no cost to taxpayers, provides a fertile ground for technical self-training in modern telecommunications, electronic technology, and emergency communications techniques and protocols.

(8) There is a strong Federal interest in the effective performance of Amateur Radio stations, and that performance must be given support at all levels of government and given protection against unreasonable regulation and impediments to the provision of these valuable communications.

SEC. 3. STUDY OF ENHANCED USES OF AMATEUR RADIO IN EMERGENCY AND DISASTER RELIEF COMMUNICATION, AND FOR RELIEF OF RESTRICTIONS.

(a) Authority- The Secretary of Homeland Security--

(1) shall undertake a study on the uses and capabilities of Amateur Radio communications in emergencies and disaster relief; and

(2) shall report its findings to Congress not later than 180 days after the date of enactment of this Act.

(b) Scope of the Study- The study required by this section shall--

(1) include recommendations--

(A) for enhancements in the voluntary deployment of Amateur Radio licensees in disaster and emergency communications and disaster relief efforts; and

(B) for improved integration of Amateur Radio operators in planning and in furtherance of the Department of Homeland Security initiatives;

(2)(A) identify unreasonable or unnecessary impediments to enhanced Amateur Radio communications, such as the effects of private land use regulations on residential antenna installations; and

(B) make recommendations regarding such impediments; and

(3)(A) include an evaluation of section 207 of the Telecommunications Act of 1996 (Public Law 104-104, 110 Stat. 56 (1996)); and

(B) make a recommendation whether that section should be modified to prevent unreasonable private land use restrictions that impair the ability of an amateur radio operator licensed by the Federal Communications Commission to conduct, or prepare to conduct, emergency communications by means of effective outdoor antennas and support structures at reasonable heights and dimensions for the purpose, in residential areas.

(c) Use of Expertise and Information- In conducting the study required by this section, the Secretary of Homeland Security shall--

(1) utilize the expertise of the American Radio Relay League, representing the National Amateur Radio community; and

(2) seek information from private and public sectors for the study.

San Diego Microwave Group

Update From the August Meeting

by Michelle W5NYV

Kerry N6IZW hosted the August meeting of the San Diego Microwave Group at 7:00pm on 17 August 2009. One of the first orders of business was to adjust the test equipment. Here below is Kerry gently adjusting a highly fragile and sensitive analyzer with an inertial containment device.

The San Diego Microwave Group meets every Monday on the 146.730 repeater at 9:00pm, except for the third Monday of the month, when they meet at Kerry's QTH. After gathering and working in the garage for the first part of the meeting, the group then moves to either indoor or outdoor seating for an in-person round-table meeting.

One of the devices under test in the garage at the August meeting was a Tektronix 492 spectrum analyzer.

Below, Kerry tunes as Paul KB5MU looks on. The analyzer is put through its paces in order to determine whether or not there is a problem with the front-end.

Below, Lee KD0IF receives an "award" for achievement in meritorious compass rose accomplishment. Congratulations Lee!

SCOPE
P.O. Box 73
Vista, CA 92085-0073

Return service requested

PERIODICALS
POSTAGE PAID
AT VISTA CA
92085-9998

Scope (USPS #076530) is published monthly by the Palomar Amateur Radio Club 1651 Mesa Verde Drive, Vista, CA 92084. POSTMASTER: Send address changes to SCOPE, P.O. Box 73, Vista, CA 92085. Periodicals postage paid at Vista, CA 92084. Dues are $20 per year or $35 per year for a family. Dues include a subscription to Scope.

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

Featured Program:

Art KC6UQH will be the auctioneer at our annual club auction on 7 October 2009 at 7:00pm at 3096 Harding Street, Carlsbad, CA 92008.

SCOPE

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

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

Paul KB5MU sets up an HF vertical antenna at Burning Man 2009. See article on page 6.

Board of Directors Nominations

The floor will be open for nominations during the November General meeting to be held November 4, 2009. Any suggestions should be directed to the nominating committee as soon as possible.

At the meeting the committee will bring forth a slate to be considered by the membership for election at the December 2, 2009 meeting.

Nominations can be made from the floor at the November meeting.

The nominating committee and others making nominations should ensure that each nominee is willing to serve if elected. Should the only candidate for a particular position die, become incapacitated or ineligible to serve, or withdraw his or her name from consideration, other candidates for that position may be nominated at the December regular meeting. The election shall be held at the December regular meeting, with the new officers and directors assuming their duties at the end of the December regular meeting.

2010 Nominating Committee

Jim W6SST (760) 310-5271
Jo KB6NMK (760) 741-2560
Ron K2RP (760) 436-8109

If there is only one nominee for an officer, that nominee may be declared elected without the formality of a vote. If there is more than one nominee for a position, voting shall be by secret written ballot.

The list of positions on the board of directors includes President, Vice President, Secretary, Treasurer, and two Directors. The other three positions on the board are chosen by the president from the four committee chairs of the standing committees. These four positions are Repeater Technical Chair, Repeater Site Chair, Membership Chair, and SCOPE Editor.

Save the Date

Club Meeting
4 November 2009

Club Officer Nominations
Program by Loren AD6ZJ
on Foursquare Antennas

Board Meeting
11 November 2009

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

Sweepstakes!
November 2009

7 - 8 ARRL November Sweepstakes (CW)
21 - 22 ARRL November Sweepstakes (Phone)

Classified Ads are Free for Members!

Below, Ron K2RP checks out the wares at PARC's annual auction. Photo by KB5MU.

For Sale
One TS 520, excellent condition $195.00 with free MC 50 microphone.
MFJ-949e 300 Watt Tuner. Like new (used twice).
New $179.95...sale price $125.00.
Two 75/40 Meter SWAN traps for $20.00. And one book free with each purchase, "Fundamentals of Radio" by Gordon Hathaway 6th printing 1953 and Radio Handbook, Sixteenth Edition by William Orr, W6SAI, 1962.
Sonny Stires <sstires@cox.net>

For Sale
Astron RS35A 35 amp power supply $80
Kenwood TM-221A 2M Transceiver $90
Mirage 220 amp. 2 W in 20 W out (New from Mirage $170) $70
Lunar 40W 2 meter amp $40
Kenwood TS-621A Dual band (2M/220) transceiver, nice, with manual, mike power cord $275
Yaesu FL2100B Linear 80-10 M $325
All working and looking good!
Ron K2RP (760) 436-8109 K2RP@ARRL.NET

CORRECTION: It was erroneously reported in the caption of the above photo in the October 2009 issue of the SCOPE that "Dennis Bacca, KD6TUJ receives a certificate of appreciation from Steve Venner, W6TAN for his generous help at the FARC auction in April."
The correct caption should read "Dennis Bacca, KD6TUJ receives a certificate of appreciation from Steve Venner, W6TAN for his generous help at the EARS auction in April." Scope editorial staff apologize for the incorrect caption previously printed.

October Auction Report

Just a few of the treasures for sale at the PARC annual auction. Photos by KB5MU.

The annual club auction was held at the October meeting, and was very successful. Art, KC6UQH, served as auctioneer and entertainer for the evening, describing each item and taking bids from eager bidders. Helpers moving the merchandise around included Conrad, KG6JEI; Terry, K3PXX; and Tom, KG6RCW. Georgia, KI6LAV; Bob, KG6RGI; and Dennis, KD6TUJ handled the computerized paperwork, enabling each buyer to "check out" quickly at the end of the auction.

Club Reports

Membership Report

New Members Joining PARC: KG6YFS, KI6ZUM, AF6SH, KJ6CKB, N6WST and Richard Johnston (no call yet). Also, six members reinstated their expired memberships. And two members renewed for 5 years ($100 each). That's the good news. The not so good news: I had to tell the Board that our membership is now down to 300 members.

I'm pleased that several members listed as "expired" in the October SCOPE, that receive their SCOPE by the web have renewed - great. Now the list is somewhat shorter. The following have not renewed, and hopefully they will see their calls here, and get a check in the mail! KI6SAT, KD6FKN, KG6UTS, and N6KTC. Pretty Please!
The club does need your support.

Al
W6GNI

Fold and Staple

KB6NMK Jo
W6GNI Al & Kathy
WA5ACE Sonny
KB6YHZ Art

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
November - Loren Hunt AD6ZJ will discuss the 4-Square antenna systems
December – Elections and Christmas social
January 2010 Monica Zech
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 September 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

September Board of Directors Meeting Minutes

The meeting was called to order at 7:03 PM by President Dennis Baca KD6TUJ. The meeting was held at the home of Al Donlevy W6GNI.

Treasurer's Report
Georgia, KI6LAV presented the August Treasurers' report. Total assets are $12,301.26 and prepaid dues are $5916.00. The clubs self insurance has been moved to a CD. The separate CD is an effort to clarify the accounting for the self insurance equipment fund. A motion was made to accept the treasurers' report by Loren AD6ZJ and seconded by Mike K6MRP Mike. Motion Carried.

Secretary's Report
Minutes approved.

General Meeting: October meeting – Annual Auction
Auction setup begins at 5:30, Sellers at 6:00, Buyers at 6:30. Meeting starts at 7:00 at 5815 El Camino Real. Location details to be reconfirmed. Art KC6UQH our faithful auctioneer. Runners and staging needed.

Membership Report:
Presented by Al W6GNI Current club membership is 305.

Repeater Site / Technical Report:
Mike, K6MRP gave the repeater site report. We had a lock-on on the 130 machine that lasted multiple hours. Once the error was identified Art KC6UQH did a full reset and restores the system. The Palomar Fire department has a new Unipole mast and would like us to pickup the tower PARC previously donated. Several power supplies and battery charger units are in need of repair. Loren AD6ZJ will look into repairing these. The site looks clean except for a fallen tree next to several trees marked for removal from SDG&E.

2009 PARC Auction Statistics
184 items
22 sellers
55 bidders
$1,876 gross sales
$355.45 club profit
27 donations to the club
$150 highest priced item (Yaesu VX5R)
"Smartest" participants brought address labels or stamps
ending time for operations 10:40pm

Discussion items:
Need to post a message in the Scope reminding members to call a club control operator if there is a repeater malfunction.
Power interruptions will likely be happening more often due to fire prevention activities. This just emphasis the need to have the repeater available for backup power.
New Hams – We have a donation to help new hams with training and events. The donation is anonymous.
The High School radio program is disbanding. A recommendation was made to send the funds to Handi Hams. The PARC board doesn't have direct jurisdiction on these funds but agrees in principle that the Handi-Hams group would be a good group worthy of supporting.
Amateur Radio Appreciation Day 2009 – At HRO October 10th – Should PARC participate – Yes but how? We will check our calendars.
September 12th ARRL and the Salvation Army are having a summit to discuss a coordinated emergency disaster preparedness plan. This information was given with late notice and PARC will likely not have any officer participation due to prior commitments.
Election Committee – Dennis KD6TUJ is in the process of pulling together a nominating committee. The committee will be announced at the October meeting.

OLD Business:
PARC Camper Trailer – The old trailer has been transferred to the tow yard is ready for termination. Look for something in the 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.

Ham Radio at Burning Man

by Paul KB5MU

Burning Man is an annual ... something. About fifty thousand people come together on a usually-dry lakebed in the Black Rock Desert in Nevada to assemble a temporary city, an intentional community, a shared participatory art show, a giant camp-out and, yes, party. That's not a good description, but no good description is really possible in just a few words. The values of this special community include self-reliance, mutual service, and active participation.

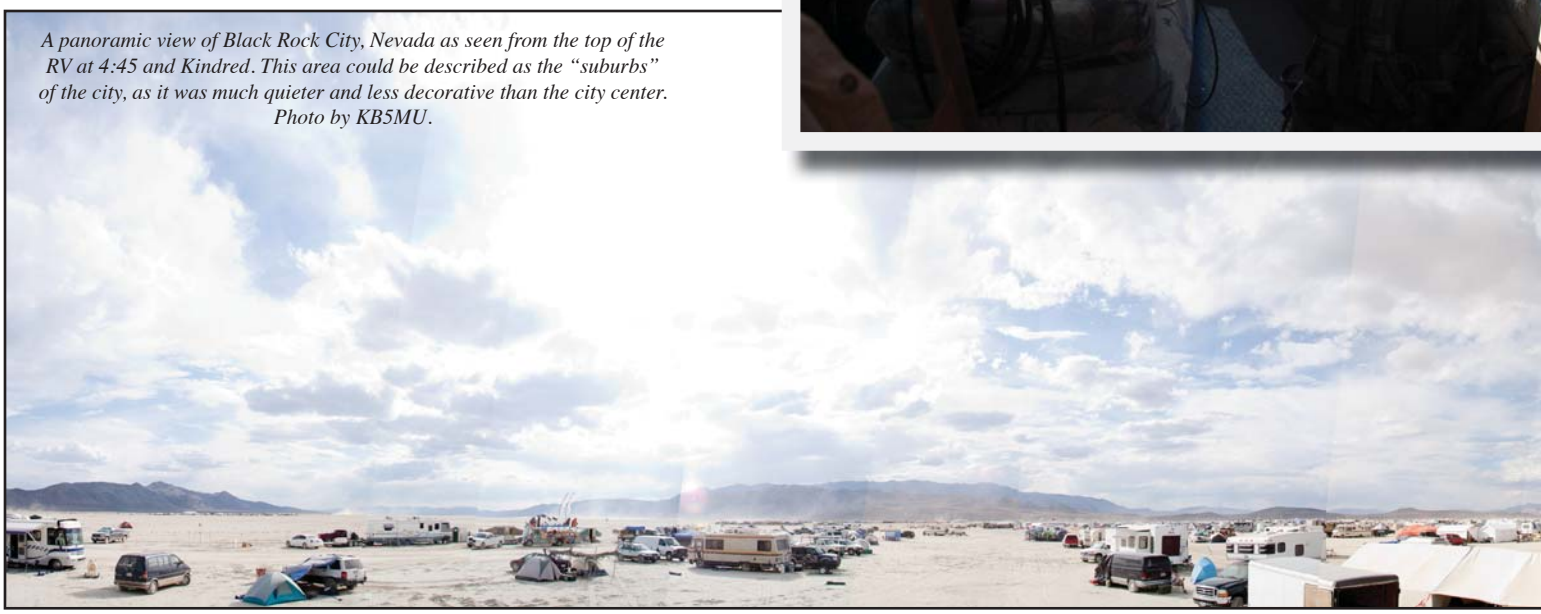
As you might expect, there is a ham radio contingent at Burning Man. Each day during the 9-day-long event there's a net held at noon on 2m simplex (146.52 MHz FM). By happenstance, I ended up acting as Net Control for that net on the first day we were there, and about 20 amateurs checked in. We exchanged information about local repeaters newly installed in nearby Gerlach, Nevada, and a temporary repeater on the air from inside Black Rock City itself. The really big news was that one of the hams was offering a treat of ice cream made with liquid nitrogen to all net members! Free, of course, since commerce is not allowed at Burning Man.

We were well equipped for the 2m simplex net, with a Diamond VHF/UHF antenna (a half-wave design that doesn't require a good groundplane) mounted temporarily to the ladder on our borrowed RV. A Kenwood TM-D710A provided for APRS tracking during the trip up and back, and plenty of power to cover the entire Black Rock City area. Most net check-ins were probably using handheld radios, and were still mostly able to hear one another. An ordinary mobile station installation like ours in the RV was more than sufficient.

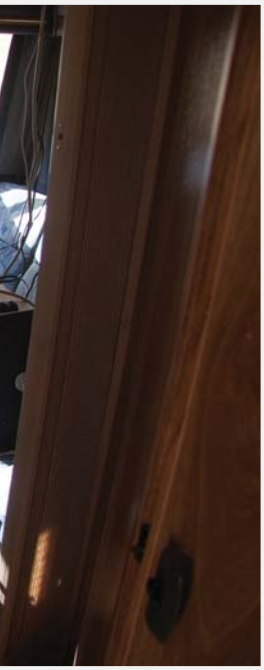
We also came equipped for HF operation, but that didn't work out quite so well. We had an Icom IC-756 Pro II transceiver

Below is the back of the RV during the event. The operating station was crammed in between boxes and gear. Photo by KB5MU.

A panoramic view of Black Rock City, Nevada as seen from the top of the RV at 4:45 and Kindred. This area could be described as the "suburbs" of the city, as it was much quieter and less decorative than the city center. Photo by KB5MU.



with all the trimmings, and enough power available to run it off the RV's systems, which included dedicated batteries (separate from the ignition battery!), a gasoline generator, and solar panels (one installed and two more deployable). We installed a Cushcraft R5 vertical antenna, which covers the 10, 12, 15, 17, and 20 meter bands and also does not require a groundplane. A heavy patio umbrella base provided the footing for three of the military fiberglass support poles that have been readily available on the surplus market lately. The base of the antenna was guyed with three lightweight cords anchored with stakes made of rebar. This simple installation survived the windy conditions on the playa, with extended periods gusting up to 40 mph, with no problem.



There aren't any more sunspots at Black Rock City than anywhere else, so our best hope was for the 20-meter band, the lowest frequency covered by the R5. The 756 Pro II has a very convenient panoramic spectrum display feature, which is ideal for getting a quick look at the activity on a band. So, we took a look at the 20m band. Gaa! The band was wall-to-wall with noise. There were peaks of S9+20dB every 10 kHz or so, on top of a continuous background level of about S5. No actual signals were visible above the noise. This was rather discouraging.

In retrospect, the high noise level should not have been surprising. The area was packed with people using generators, which tend to be noisy, not to mention all sorts of displays with high-voltage neon lights, odd vehicles with all kinds of motors, and who knows what else. Probably the comb of noise peaks was coming from one specific nearby source, and the continuous background noise was the sum of all the other sources in the area.

The other big limiting factor on our ham radio operation at the event was time. As it turns out, there's so much to see and do that it doesn't seem right to spend a lot of time tuning mostly-dead bands back at camp. We would turn the radio on several times a day and check the bands, but the noise level remained high and the audible activity level remained near zero, so we wrapped up the trip with no QSOs in the HF logbook.

October Auction Report and Photographs continued

This year a number of recent-vintage transceivers sold in the $150 range -- most years, equipment that expensive doesn't sell very well. A couple of rigs in the $500+ category were offered, but (as usual) didn't sell. Boxes of random parts were fairly popular, as were distinctive older radios (in all conditions). Someone was clever enough to split up a large supply of ground braid into a dozen or so 25-foot hanks, which were distributed throughout the auction tables to be sold at different times. Each hank sold for the minimum bid of $6 -- or more!

Repeater Site Report

Due to the unreliable switching of the two inverters from "standby to on" which supplies power to the repeaters, the technical committee has decided to change over to 48 vdc to 12 vdc converters for each repeater. This will be more power efficient and if one fails we will only lose one repeater and not the whole lot as with the inverters. To run the converters we will need to wire each repeater building with a 48 vdc distribution panel. We will need to move conduit from the old tin battery building to the now block building 48 vdc battery system.

On 9/30/09 Tom, KG6RCW and Mike, K6MRP went to the site to rerun the conduit and wire from the old battery building to the new batteries in the block building. (see pics) In the process of digging the trenches we ran into a big chunk of concrete about 6 inches thick which was eventually broken up with a sledge hammer to finish the trench. We definitely got our exercise that day. The conduit was then rerun and connected to the Hut which is attached to the block building. The trenches were then back filled and leveled. The two batteries (13.6 vdc) that power the control receiver were then moved from the old battery building to the hut. A small charger was added and the batteries were wired to the control receiver which was tested for proper operation.

On 10/4/09 we went back to the site to run the wire in the conduit that had been rerouted on the previous visit. The weather was drizzly, windy and cold. We were able to run the new wire and terminate it on the fuse panel in the block building. The other end will be terminated on a distribution fuse panel which I am in the process of building. (see pics) More to come.

Work parties at this time are not a scheduled event and are done on an as needed bases. Anyone desiring to attend work parties please send me an email at k6mrp@amsat.org and I will notify you as soon as I know one is being scheduled. I would like to apologize to the person who sent me an email volunteering for work party help. I lost your info. Please contact me again. Thanks.

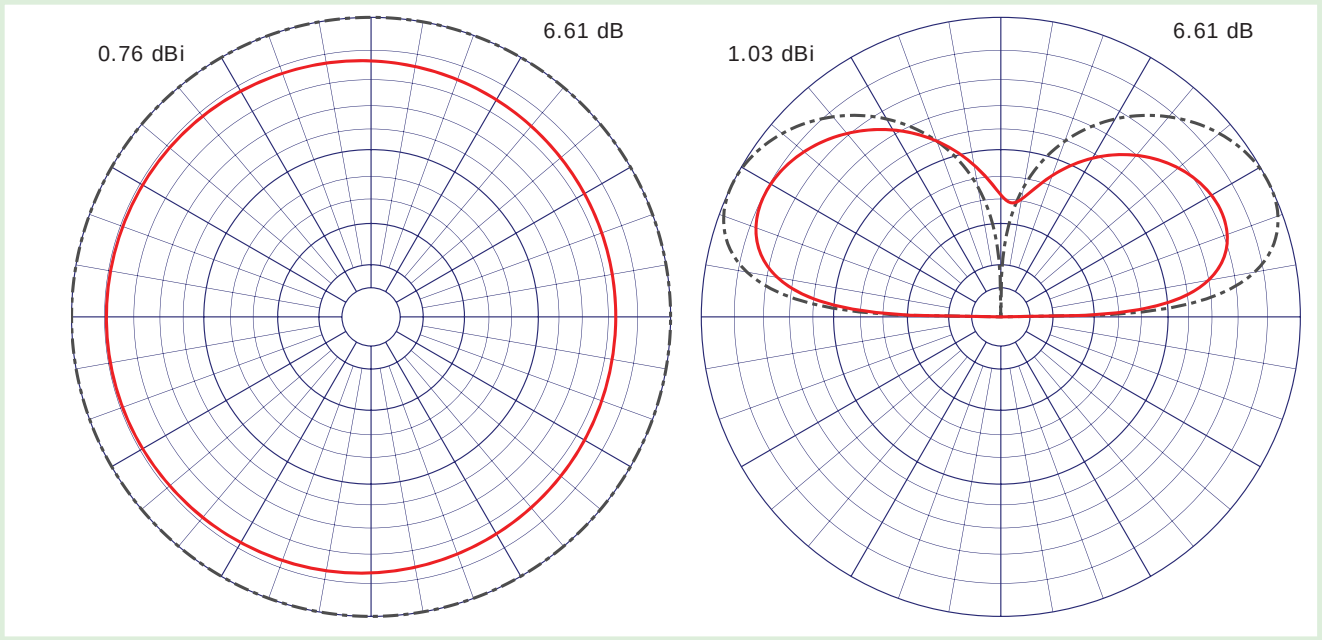
Mike, k6mrp
Repeater Site Tech
k6mrp@amsat.org
760 749 8888

I Wonder What That Antenna Pattern Would Look Like...

by Michelle W5NYV

Using the free software program cocoaNEC 2.0, I experimented with what would happen to a vertical antenna model if the ground radials were not perpendicular to the vertical element. This might happen if the vertical antenna was installed with the radials on a slope, or if the main vertical element was pushed over by accident or the wind. In the figure below, two antenna models are compared. On the left-hand side of the figure is an azimuth diagram (viewing the antenna patterns from above), and on the right-hand side is an elevation diagram (viewing the antenna patterns from the side). The dashed (black) line is a vertical antenna with main element and radials perpendicular to each other. The solid (red) line is a vertical antenna that has been bent over at a 15 degree angle with respect to its radials.

Losing a perpendicular angle causes the vertical antenna to lose gain, changes feedpoint impedence from 27.7 + i 0.7Ω to 48.2 - i 7.1Ω, and distorts the pattern in the direction of the tilt. In this case, the vertical is tilting 15 degrees to the right in the elevation diagram.



Vertical Antenna With Perpendicular Radials
Frequency 8.250 MHz
VSWR(Zo=50): 1.8:1
Average Ground - Rel. dielectric constant 10.000,
conductivity: 0.04000 mhos/meter. (NEC-2 ground)
Directivity: 6.18 dB
Max gain: 1.03 dBi (azimuth 180 deg., elevation 26 deg.)
Front-to-back ratio: 0.00 dB
Front-to-rear ratio: 0.00 dB

Vertical Antenna With 15 Tilt With Respect to Radials
Frequency 8.250 MHz
VSWR(Zo=50): 1.2:1
Average Ground - Rel. dielectric constant 10.000,
conductivity: 0.04000 mhos/meter. (NEC-2 ground)
Directivity: 6.61 dB
Max gain: -1.01 dBi (azimuth 180 deg., elevation 27 deg.)
Front-to-back ratio: 1.45 dB
Front-to-rear ratio: 0.66 dB

Non-Ham Radio: WD9XSP

Dick Kalkofen K6KAL correctly identified the station pictured on the cover of last month's Scope.

The station, WD9XSP, is an experimental GSM cellular base station. The OpenBTS project built a temporary cellular system to support TXT messaging at Burning Man, in the 800 MHz commercial cellular band. Their RF hardware was based on the USRP (Universal Software Radio Peripheral) open-source SDR platform from Matt Ettus, N2MJI. More information is available at

http://openbts.sourceforge.net/

Repeater Site Photos

October Auction Photos

SCOPE
P.O. Box 73
Vista, CA 92085-0073

Return service requested

PERIODICALS
POSTAGE PAID
AT VISTA CA
92085-9998

Scope (USPS #076530) is published monthly by the Palomar Amateur Radio Club 1651 Mesa Verde Drive, Vista, CA 92084. POSTMASTER: Send address changes to SCOPE, P.O. Box 73, Vista, CA 92085. Periodicals postage paid at Vista, CA 92084. Dues are $20 per year or $35 per year for a family. Dues include a subscription to Scope.

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

Featured Program:

Loren AD6ZJ will be the featured speaker at our general club meeting at 7:00pm on 4 November 2009 at the Carlsbad Safety Center, 2560 Orion Way, Carlsbad, CA, USA. Loren will be speaking about Four-Square Antennas.

SCOPE

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

Loren AD6ZJ gave a presentation about Four Square Antennas at the November 2009 meeting. Photo by KB5MU

The slate of candidates for the Palomar Amateur Radio Club Board of Directors for the year 2010 will be elected at the December meeting. Bring food to share at this annual social event. There will be games, ice cream, and cake.

Ron Pollack K2RP writes about the milestone transmitter, the Heathkit DX-100, starting on page 3.

An article on PARC and Amateur Television begins on page 4.

The October board of directors meeting minutes can be found on page 5.

An article about the ATV Newsletter by Bryon Foster N6IFU can be found beginning on page 8.

A summary of Loren AD6ZJ's November program about phased vertical arrays can be found on page 10. This article is adapted from the text on Loren's slides. He shares some useful resources and a good book recommendation in the article that will get your vertical antenna project up and on the air in short order.

The call for a Field Day Chairman goes out on page 11 courtesy of a writeup by Paul KB5MU.

A very brief set of Field Day results can also be found on page 11. See the full results in this month's QST.

See you at the meeting and on the air! -W5NYV

PARC Board Of Directors Slate for 2010

President Dennis Baca KD6TUJ
Vice President Ron Pollack K2RP
Secretary Gary Kent W6GDK
Treasurer Georgia Smith KI6LAV
Director Conrad Lara KG6JEI
Director Paul Williamson KB5MU

Below, Fred May N2HLG wins the November PARC drawing! Congratulations N2HLG on your new HT. Photo by KB5MU.

Save the Date

Club Meeting
2 December 2009

Social and Elections
Bring food to share!
There will be games, ice cream, and cake.

Board Meeting
9 December 2009

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

Notable Fact
December 2009

December is the Universal Human Rights Month.

Classified Ads are Free for Members!

For Sale
Astron RS35A 35 amp power supply $80
Kenwood TM-221A 2M Transceiver $90
Mirage 220 amp. 2 W in 20 W out (New from Mirage $170) $70
Lunar 40W 2 meter amp $40
Kenwood TS-621A Dual band (2M/220) transceiver, nice, with manual, mike power cord $275
Yaesu FL2100B Linear 80-10 M $325
All working and looking good!
Ron K2RP (760) 436-8109 K2RP@ARRL.NET

Club Reports

Membership

New Members Joining PARC:
KJ6BWX (family),KJ6BTJ,
and KJ6BTK.
And two reinstatements.

Fold and Staple

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

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: KD6FKN, KG6UTS, N6KTC, KI6IID, K6PD, and KC6VXY. PLEASE RENEW!!

Al
W6GNI

Heathkit DX-100

by Ron K2RP

Anyone who was an active ham from the mid 50s through the mid 60s is almost certainly familiar with the Heathkit DX-100.

Heathkit was responsible for many milestones in our hobby, starting with the original amateur kit, the low power AT-1 introduced about 1952.

Encouraged by the huge market for reasonably priced amateur kits, and the continued availability of war surplus parts, Heath debuted the DX-100 in 1955. Even though it was only the company's second transmitter kit, it was an instant success and was considered a serious transmitter for serious hams!

The family resemblance between the two early Heathkits is tenuous at best, being primarily the color! While the AT-1 was a 25 watt input, CW only, crystal controlled unit, the DX-100 offered 120 watts output (almost 200 input) on CW and 100 watts out on AM phone, with a built in VFO. The 15 tubes included 2 6146 finals and 2 1625 modulators. The VFO is a clone of the popular VF-1 external VFO. The modulator tubes were probably WW II surplus as they were used in the ARC-5 series of Command transmitters, and were a 12 volt version of the popular 807. This is a massive transmitter, weighing well over 100 lbs!

After building thousands of these kits, a 100B version was introduced in 1958. Several improvements were made in the B version (there was no "A" version): The original version switched 4 crystals or VFO control from the front panel. The design flaw was that the 4 crystals were located inside the cabinet, which had no access, so changing the crystals involved removing a couple of dozen screws and wrestling 100 lbs. of transmitter out of the case! The B version only had one crystal position, switched from VFO inside the cabinet, but an access door was provided. This made tube changing much easier as well. The original model had a stepped loading switch and a variable cap for fine loading, a common system at the time. The B version employed a larger variable cap for loading, which reduced arcing.

The biggest historical significance in the B version, I believe, was the inclusion of a provision for the use of the SB10 SSB adapter, although it was not introduced for another year. When the unit was designed in the early 50s, SSB was mostly experimental and AM was the predominant phone method. By the time the B came around, it was clear that SSB was the way of the future, and any successful transmitter would have to include provision to avoid certain obsolescence.

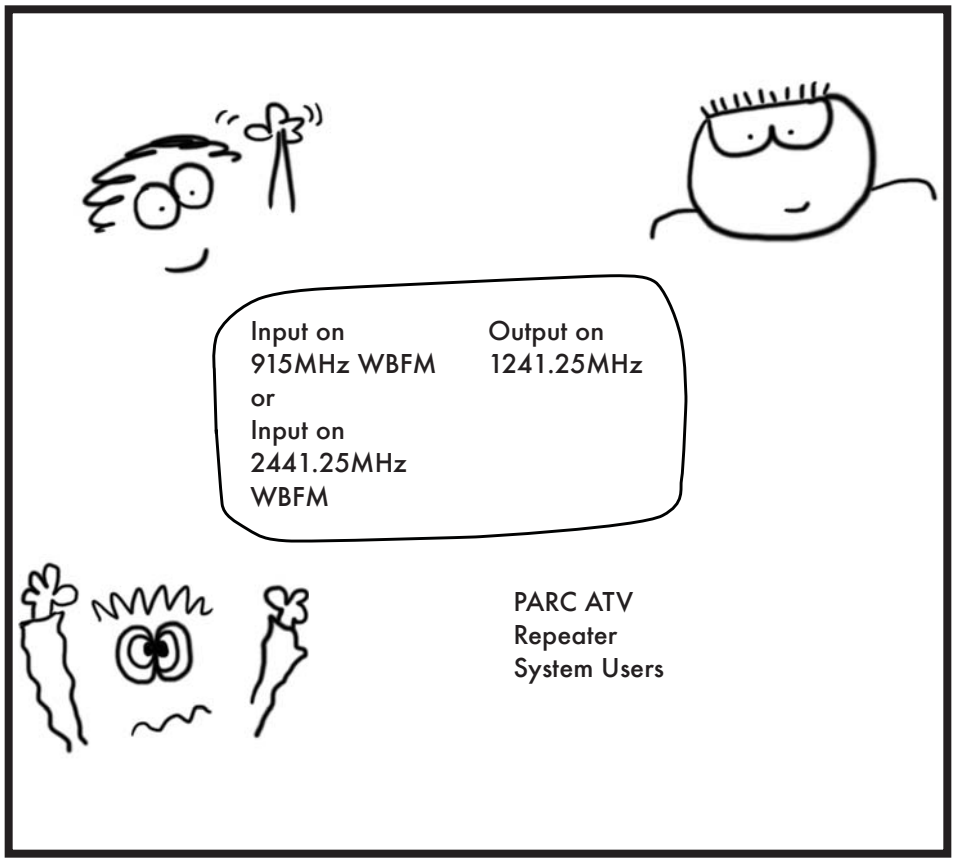
The marketing team at Heath had a knack for finding a need and filling it. The Novice license had been introduced in mid-1951, and ham radio experienced unprecedented growth. Novices were limited, initially, on the HF bands, to small portions of the 80 and 11 meter bands, soon changed to 80, 40, and 15. Privileges in these bands were severely restricted, limiting Novices to crystal control, CW, and 75 watts input. As thousands of these Novices upgraded, they were instantly in the market for a higher powered, VFO controlled transmitter with a modulator for AM. The DX-100 filled the bill perfectly, with a price tag under $200.

Of course, it's impossible to know exactly what equipment was used by individual hams over 50 years ago, but some statistics in QSTs of the era give us some indication. In those days, the reports of the Phone and CW Sweepstakes contests included the equipment lineups of the winners of the (then) 73 ARRL sections. An analysis of these reports shows dramatically the sudden change from home brew to manufactured and tube type transmitters, especially for CW.

In the 1954 contest, of the 73 CW winners, only 15 used manufactured (including kit built) transmitters. Of these, 9 were expensive Collins units, whose cost made them unavailable to the average amateur of the day. The remainder, of course, used homebrew rigs.

The very next year, 1955, 27 winners chose commercial gear over homebrew. The Collins crowd was down slightly to 8 winners, but the new DX100 was used by 4 section winners. This is noteworthy since the transmitter was introduced only a few months before the contest, and time had to be allowed to construct and test it. By 1956, 33 winners were no longer using homebrew transmitters, and 6 of them chose the DX100.

continued on page 6



"It should also be pointed out that 439.250 MHz has been a well established ATV video carrier frequency for many years. Amateur Television enthusiasts were in fact the first users of the 70-cm Amateur band. Unfortunately, self-serving interests and poor spectrum management decisions made by frequency coordinating councils in the past have allowed FM voice repeaters and packet radio stations to infiltrate the 438 MHz to 444 MHz subband over the past several years. This has occurred despite the long established recognition of 439.250 MHz as an Amateur Television frequency by the US ATV Society and the American Radio Relay League.

Amateur Television

by Mike K6MRP and Michelle W5NYV

Amateur Television (ATV) is television done according to FCC part 97 rules. It's noncommercial television transmitted by licensed amateur radio operators.

If you look at the ARRL Repeater Directory under Amateur Television, you can see what are considered to be the standard ATV frequencies. Our club's ATV plan is inputs on 915 MHz wide-band FM (WBFM) and 2441.25 MHz WBFM. The frequency used to coordinate activity on PARC's ATV system is 146.415 MHz NBFM simplex (tone 79.7). The ATV output frequency is 1241.25 MHz AM.

PARC's ATV equipment is presently off the air for a major rebuild. The part of the system that provided the necessary station identification stopped working.

The selection of input and output frequencies can be a very complicated process that balances many concerns and interests. A good example of the various considerations in selecting 70cm ATV input/output pairs can be found here:
http://www.qsl.net/kd2bd/tsarc.html

About two-thirds of the way through the article, the following passage can be found.

The 420 MHz to 450 MHz 70-cm frequency allocation is a spectrum resource that is shared with government fixed, mobile, and radiolocation services who are primary users of the band. Considering that Amateurs are secondary users, the FCC requires that adequate measures be taken by Amateurs to avoid interference to government services. High power pulsed radiolocation transmissions are easily detected on an ATV receiver, and considerate ATV operators cease operations when radar signals are seen to avoid interference with radiolocation services sharing the 70-cm band. It would be an interesting exercise to determine what mechanisms, if any, FM repeater and packet radio users, who employ hard limiting receivers designed for immunity against pulsed interference, use to identify the presence of radiolocation transmissions, and what measures these users take to avoid interference to primary government radiolocation services on the band."

One can see several issues raised in these two paragraphs. The entire article is well worth reading, but the points emphasized here are that we're secondary users on the band, frequency coordination is often difficult and sometimes

continued on page 7

October Board of Directors Meeting Minutes

The meeting was called to order at 7:00 PM by President Dennis Baca KD6TUJ. The meeting was held at the home of Al Donlevy W6GNI.

Treasurer's Report
Georgia, KI6LAV presented the August Treasurers' report. Total assets are $12,398.38 and prepaid dues are $5,838.00. The auction profit to the club was $355.00. A motion was made to accept the treasurers' report by Loren AD6ZJ and seconded by Mike K6MRP Mike. Motion Carried.

Secretary's Report
Minutes approved.

General Meeting: 4-Square and Other Phased Arrays
Loren AD6ZJ to present.

Membership Report: Presented by Al W6GNI Current club membership is 300.

Repeater Site/Technical Report:
Mike, K6MRP gave the repeater site report. The fuse panels are in for the 48VDC system. Wiring still needs to be completed at the far end. We still need to get 48VDC to 13.8V power supplies for all the units. We have a few choices to consider. The 6m repeater could use a new antenna. The ATV repeater is still in repair at the home of Art KC6UQH. The inverters are still giving us fits. The new power system should eliminate the inverters.

Discussion items:
John, WB6IQS purchased some lengths of coax for field day use and other use. He requires reimbursement of $30.00.
We need input from members on what topics would interest them for future presentations. We will look for input from members at the December meeting.
Nominating committee members consisted of Jo KB6NMK, Jim W6SST, and Ron K2RP. Floor nominations can be made during the November meetings. We need a volunteer for Field Day chair for 2010. Should PARC use LOTW? Yes.

OLD Business:
PARC Camper Trailer – The old trailer has been transferred to the tow yard is ready for termination. Look for something in the 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.
There were updates on the Palomar Mountain Volunteer Fire Department.

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
December – Elections and Christmas social
January 2010 Monica Zech
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

Heathkit DX-100

continued from page 3

In addition to the obvious benefit of kit and manufactured units being much easier to assemble and get on the air, an often overlooked factor was resale value. Kit built transmitters commanded much higher values at resale and trade in time compared to homebrew.

It is interesting to see that even in 1954, only a handful of winners constructed their own receivers. State of the art receivers had become complex enough, and manufactured receivers were inexpensive enough, to signal the end of the era of widespread receiver construction.

One reason for the enormous popularity of the DX100, of course, was the price. The two major competitors in kit form in 1955 were the Viking II and Viking Ranger. The Viking II was closest in specifications, using the same final tubes, but required an external VFO. The basic kit was $280, and the VFO about $45, making the pair cost almost double the DX100 price. The Ranger was more modern than the Viking II design, and featured a built in VFO, but offered only 75 watts of input on CW, and 65 on phone, with a single 6146 for a final amplifier. Even so, it cost a bit more at $219.

If a manufactured unit was preferred over a kit, a typical transmitter of the same basic power level and features was the B&W 5100 which would set you back $475.

All these were popular and successful in the marketplace. Johnson Viking had marketed the Viking I and II models since 1950, and were alone in the kit market for this type of transmitter until Heath introduced the DX100. Shortly afterward, the Viking II was discontinued, and the Valiant became available with 3 6146s in the final and commensurately more power. But, the DX100 maintained its market share.

As soon as a new receiver or transmitter was released, modification articles began to appear in the enthusiast magazines, and the DX-100 was certainly no exception. Dozens of articles were written, describing modifications mostly in the keying and audio circuits.

Once again, Heathkit produced a classic milestone in the development of amateur equipment.

The one you see here followed me home this summer, having been in storage for many years. The panel was original, with no extra holes, and the common timed sequence keying modification had been made. After a physical and electrical restoration, I performed a popular audio stage mod for greater low frequency response. The reports have been gratifying on both CW and on the AM nets.

Ω

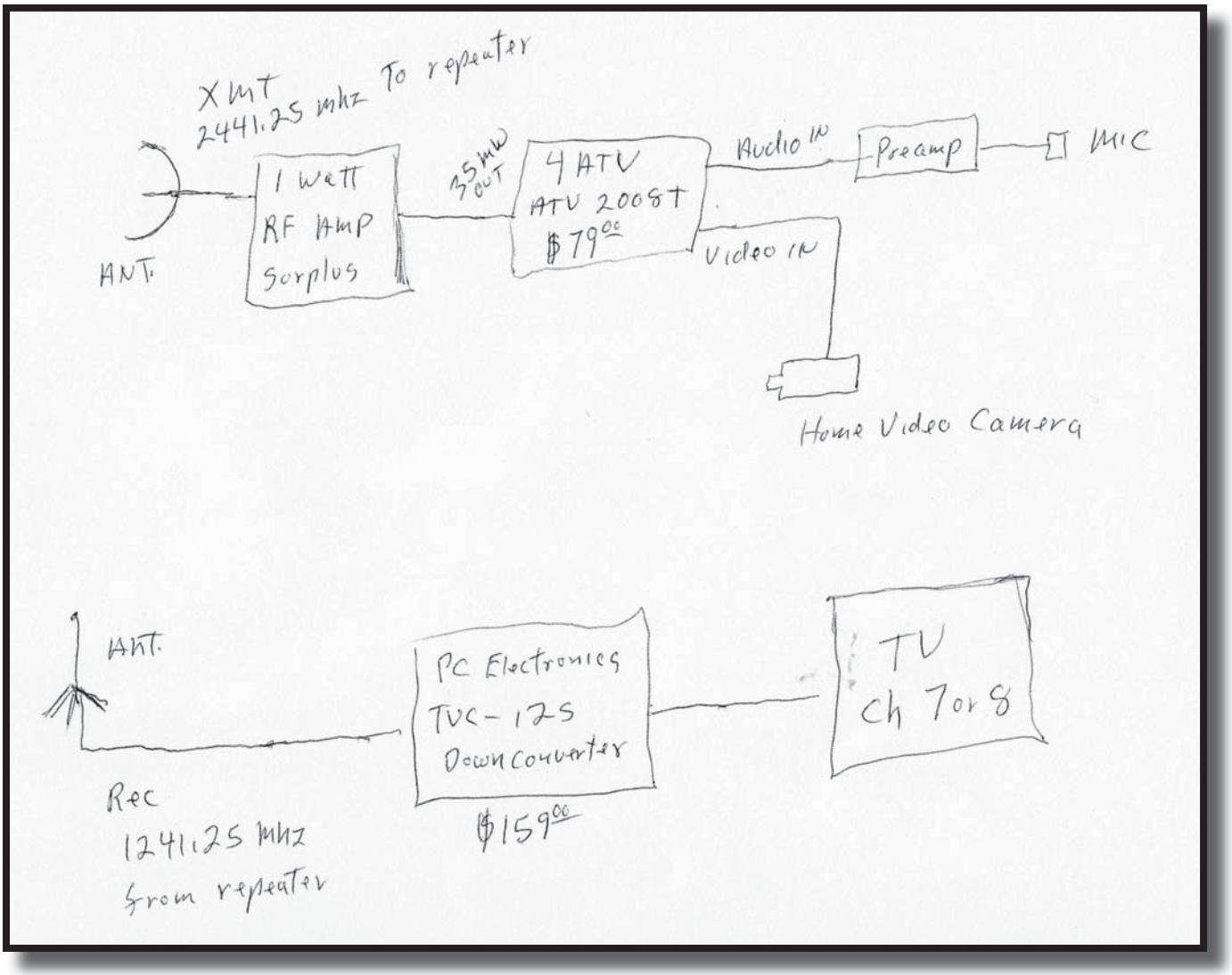
Amateur Television

continued from page 4

fractious, that there is significant interference from government radiolocation, and that the very nature of the transmissions that we use may make it difficult to monitor our effect on the band.

As noted above, PARC does not have an ATV input in the 70cm band. Bill KB6MCU, who was in charge of the ATV at the time our frequencies were coordinated, believed that the Metro Link packet node would interfere. Mt. Miguel and Point Loma repeaters also used that input.

Mike K6MRP describes his home station, "For my receive I use a Yaesu TV-736 mod/demod that works with my Yaesu 736R all mode transceiver. In the beginning because I had the Yaesu I would receive the picture and talk to them on 146.430 simplex link. I could see and talk to them and they could talk to me through the regular ATV repeater." Below is a sketch of Mike's ATV setup.



The downconverter Mike uses in his ATV setup is suitable for use with PARC's ATV frequency plan. It's called the TVC-12S, and you can see the pdf describing it at http://www.hamtv.com/pdffiles/TVC-12SM.pdf.

An ATV system is not overly complicated nor is it especially expensive. While one can spend a lot more, a PARC ATV system can be built for less than the cost of many HTs.

The greatest limiting factor for ATV is whether or not you can get a good view of the repeater and how far away you are from the repeater. The repeater site on Palomar Mountain affords a pretty good view of most of San Diego, but if you live in, for example, South County, you will need to make up for the increased range with increased gain.

The ATV Newsletter

by Michelle W5NYV

Bryon Foster N6IFU, editor and publisher of the *ATV Newsletter*, was kind enough to speak with me about the origins and development of the newsletter on the phone on the 20th of November 2009.

With over 1500 subscribers, this internationally-distributed newsletter is a hub of information. Recent topics in the November 17th issue ranged from ATV DXing, digital ATV, a classified advertisement section to an ATV programming guide and status and updates on various repeaters and stations.

Bryon got involved in ATV about five years ago. From his location in Simi Valley, he began to compile a list of people active on ATV from Santa Barbara to San Diego, and he started to keep track of the status of the ATV repeaters. Getting the knowledge out about whether or not the repeaters were up or down was useful, and this sharing of information was the original impetus behind the newsletter. As it arose from the Amateur Television Network (ATN), which is a network of ATV repeaters doing "fast scan amateur television in Alabama, Arizona, Northern California, Southern California, Georga, Illinois, Indiana, Kentucky, New Mexico, Nevada, Texas, Washington, Delaware, Maryland, New Jersey, and Pennsylvania"[1], the newsletter started out as the *ATN Newsletter*.

Frequencies used by the Amateur Television Network[2] are, most commonly, either 434MHz AM or 2441.5MHz FM for the input, with 1253.25MHz FM appearing in the list as well. Output frequencies are 1253.25, 1277.25, 421.25, 919.25, 912, or 2417.5 MHz. The modulation is VSB, which is Vestigial Side Band. This is the modulation used in NTSC analog broadcast television.

With a background in marketing, Bryon began making personal contacts with anyone that had dropped out of ATV. He invited them back into the hobby, and kept track of who would check into the ATV chatroom on George Migliarini AC6RB's Camstream.

A Camstream is a video link over the internet. Registration is required, but the service is considered to be easy to use and is free. There are many ATV operators that link over the internet with Camstream. However, it does have limitations in terms of the number of simultaneous viewers. In practice, Camstream was generally limited to six or seven people. Any more than that and the video would freeze, there would be a loss of audio, and people would be bumped off.

The British Amateur Television Club[3] (BATC) invested a lot of money in a nice system that accomplished the same functions - linking video streams over the internet - but with a substantially increased capacity.

From the *ATV Newsletter* of 9 September 2008, Bryon reported,

> For about $8.00 U.S. [at current exchange rates it is $6.60] you can become a member of BATC and stream video from your ATV repeater or QTH. And the BATC streaming video doesn't have the problems that Camstream does with having to many viewers and having the stream slow down and lose audio and eventually dropping viewers when you reach about 8. The BATC.TV streaming video had 400 viewers at its peak when they broadcast the AMSAT-UK Meeting.
>
> Being a member of the BATC, besides offering the streaming video you also will receive a cyber subscription to their club magazine. Which includes many articles on Digital ATV as well as AM and FM ATV modes. You can subscribe using a credit card or use Pay Pal.

The newsletter continued to track status, but started adding net reminders, articles, and notices of gear for buying, selling, and trading. Bryon became net control for the club ATV net. As the newsletter grew, it naturally evolved into a newsletter of general ATV interest, and was therefore renamed *ATV Newsletter*.

Bryon is in a particularly good position to ascertain the health and future of ATV in the region. As an active member of the amateur television community and having experience in marketing and communications, his observations about ATV are something that PARC can do something about.

Bryon believes that ATV should be a whole lot more popular than it is. The reason it hasn't broken through to more people is due to several factors. One, there is a lack of direction from clubs. Simply placing a repeater on the air is not the finish line. Activities are key, and activities don't just happen by themselves. They take some planning and some enthusiasm and some people

1 http://atn-tv.org/ATN.htm

2 http://atn-tv.org/freqsummary.htm

3 http://www.batc.tv/

with the gear to participate.

A common complaint is that there isn't anything to do once you get it on the air. Bryon quoted a fellow from Simi Valley who said, "You build your station, you get it on the air, and check into the net, and there is nothing else."

Without a critical mass of people, there aren't activities. However, without any activities, there won't be a critical mass of people drawn in the first place. This is not a problem peculiar to ham radio. This is a problem of any and all associations and groups. Fortunately, it's a solvable problem.

Another issue that Bryon raised is that there is very little standardization in ATV. Each repeater may be unique. There are, like in PARC, systems that are insufficiently documented or depend on surplus gear that may or may not be available. Failures, therefore, can be more challenging to overcome.

A final point that Bryon made is that with local ATV networks, if you don't like the programming or the content, then there may be little other choice except to dig in and create your own. ATV is, in general, very different from HF or 2m, where you can more easily tune to another frequency and find people that you might better fit in with. With ATV, the "pond" is small. ATV should bring out the best in us, in terms of manners and considerate operation, but there are cases where the opposite has been true.

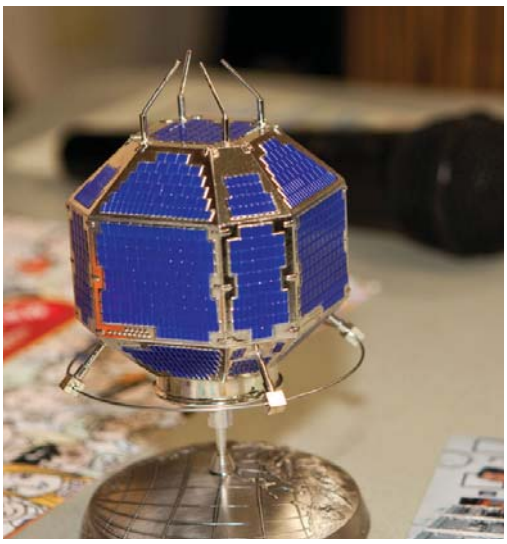
So what can we (PARC) do with ATV?

The San Bernardino Microwave Society transmits their meetings via Camstream, and takes check-ins over ATV. This provides the meeting content over a much wider area. PARC could transmit member (and board!) meetings over ATV.

P.C. Electronics[4] has a document on their website called "ATV in Public Service", which describes a portable ATV station for field deployment. The intended uses are public service events and communicating with emergency operations centers. Providing a video stream at a public event or emergency can be very useful. If a picture is worth a thousand words, how many words is a live video stream worth?

A membership program about video, covering the basics of analog and digital transmissions, would provide the foundation and opportunity to talk about a club-organized home station effort. If you'd like to talk more about the future of ATV in PARC, please find me at any of the upcoming meetings. There will be a series of articles about PARC's ATV efforts in future Scope newsletters.

In closing, a large collection of amateur television information can be found here:
http://hamradio.arc.nasa.gov/amateurtv.html



Above, Loren AD6ZJ shows off a model satellite (below) from JARL, obtained during his recent Japan trip. Photos by KB5MU.

4 http://www.hamtv.com

Vertical Array Systems

by Loren AD6ZJ

Article adapted from the November 2009 Palomar Amateur Radio Club membership meeting program, which was given by Loren AD6ZJ

Why do we Need a Vertical Array?

Gain is a good thing. Every 3 dB of gain has the same effect as doubling your power output. While you can use a linear amp to double your power, no linear that I'm aware of will help the received signal and you need to hear them to work them. In addition an array antenna also has directivity that can be used not only to enhance the wanted signal but also reduce an unwanted signal.

OK. So we need gain, but why a vertical array and not just a horizontal beam? On the low bands (30m – 160m) most of us don't have the real estate or the pocket book to put up an effective beam. For example, for a 2-element full-sized 40m beam to be setup for optimal performance we would like it to be ½ wavelength above ground. So our beam would be 65' high, 65' long and 22' wide! Most of us just can't do that. On the other hand, a 40m vertical array can be ground mounted with the elements spaced 33' apart with the tops at about 33'. The vertical array is easier to deploy and doesn't require a big tower. Of course if I had the land and the funds (and the patience to go through the permit process) I would put up the beam.

Basics of a Driven Array

There is a finite amount of RF available at the antenna for a given wattage output of the transmitter. An isotropic radiator (a sphere-shaped theoretical antenna) is said to have a gain of 0 dBi. A dipole antenna in free space is said to have a gain of 2.16 dBi but a dipole antenna 1/8 wavelength above ground has a loss of -1.4 dBi (at 15 degree takeoff). A single ground mounted vertical with average ground has a gain of -0.3 dBi. If we add a second vertical and couple it properly to the first vertical we will produce gain (more on this later). We don't actually produce anything (watts is watts) but we focus the available energy into a particular direction or directions. The array has loss in some directions and that energy is focused to produce gain in the desired direction.

There are many choices for gain and directivity. We can get gain and directivity in many forms just by adjusting the distance between elements and the phase relationship between them. Some combinations that are desirable are also complicated while others are much simpler to deploy. Take a look at the ¼ and ½ spaced arrays and you can see there are a few arrangements that don't take much effort. In particular if we can feed our antennas with 0, 90 or 180 degree phase shift we don't require any sophisticated equipment to create phase shift networks. For instance, if we take our 2 elements on 40m and space them ½ wavelength apart and feed them with a simple T splitter and equal lengths of coax we end up with a broadside array (the gain is perpendicular to the pair of verticals). Or we feed the same pair but add an additional ½ wavelength of coax (180 degree shift) we have an end fire array in line with the pair and in the direction of the lagging vertical. I don't want to oversimplify the setup as feeding two antennas with our 50 ohm coax will be approximately half the feed impedance seen by the transmitter so some form of matching should be used to get back to the 50 ohms.

Once we have our array built we can change directions by adding or subtracting coax feeder length to one or more of the elements. If your mostly interested in pointing to the North East with the occasional need to work Asia you could just run outside and swap coax around. Of course the low bands are active after dark so you would be running around your backyard with a flashlight. By adding some complexity to the building process you can simplify the use of your array. A double pole double throw relay (DPDT) can be effective at quickly switching 2 element 180 degrees.
Add another relay to feed the elements in phase (the same phase shift) to produce broadside gain. By adding more elements and more relays you can build elaborate array systems including the popular four-square array. We will now look at some ways to do this in my favorite antenna book.

See "ARRL ON4UN's Low Band Dxing by John Devoldere" 11-8, 11-37, 11-38, 11-39, 11-61

To have an effective vertical array usually requires a good radial system. If it's a ground mounted vertical you can never have too many radials. A DC ground path is also a good addition. It will bleed off static accumulation keeping it out of the rig. I notice less static when I have a DC ground path. Depending on the feed system you choose you might already have the DC path accounted for.

Where do I get more information?
- ON4UN's Low-Band DXing – HRO
- ARRL Antenna Compendium – HRO
- The ARRL Antenna Book – HRO
- ARRL's Wire Antenna Classics – HRO
- EZNEC V5.0 – www.eznec.com

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.

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.

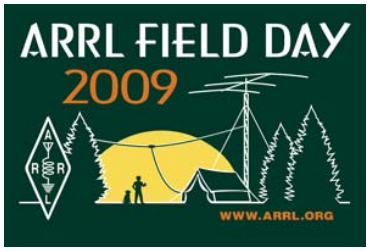
It's early December, and Field Day is half a year off. Much of the detailed work to prepare for Field Day won't really get started until the last few weeks before the event. If you're just going to drop by and enjoy the event or even operate a shift at one of the stations, you probably don't need to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



Field Day 2010 - Where do you fit in?

San Diego Section Field Day Results - Partial

Compiled by Pat Bunsold WA6MHZ

Per December QST

Class	Club or Entity	Callsign Used	Points	Participants
3A	Palomar ARC	W6NWG(+WD6FWE)	2686	45
3A	Convair/220 Club	W6UUS	2474	14
3A	Fallbrook ARC	N6FQ	1616	59

SCOPE
P.O. Box 73
Vista, CA 92085-0073

Return service requested

PERIODICALS
POSTAGE PAID
AT VISTA CA
92085-9998

Scope (USPS #076530) is published monthly by the Palomar Amateur Radio Club 1651 Mesa Verde Drive, Vista, CA 92084. POSTMASTER: Send address changes to SCOPE, P.O. Box 73, Vista, CA 92085. Periodicals postage paid at Vista, CA 92084. Dues are $20 per year or $35 per year for a family. Dues include a subscription to Scope.

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

Featured Program:

Please come to our annual holiday social at our general club meeting at 7:30pm on 2 December 2009 at the Carlsbad Safety Center, 2560 Orion Way, Carlsbad, CA, USA. Bring a dish to share. The club will provide ice cream, cake, and coffee. There will be games to play, and we'll have a great time. We look forward to seeing you!