



# RF



## ORANGE COUNTY AMATEUR RADIO CLUB, INC.

VOL. XLVI NO. 6

P.O. BOX 3454, TUSTIN, CA 92781-3454

June 2005

### The Prez Sez:



Field Day is coming!! Mark your calendar for Saturday, June 25, and Sunday, June 26

for this fun club event. I have heard that our FD Chairman, Willie-N8WP, is organizing some set-up activities around 3PM on Friday afternoon. Rumor has it that all of the Friday afternoon workers will be treated to a steak dinner for their efforts. Don't miss this OCARC and nation-wide event. Join the thousand other radio clubs that actively participate this communications event that provides practice in "abnormal situations in less than optimal conditions."

You don't have to stay the entire 24-hours. Come out to FD just for a few hours if that is all you can spare. There is always room for everyone to operate for an hour or two. Of course it is greatly appreciated if you can help with the FD set-up and teardown activities.

See you at the meeting and at FD,

73...de Ken W6HHC 

### THE BPL FIGHT: A BIG HAM RADIO WIN IN TEXAS!!

- From the Amateur Radio Newsline Report 1451

Back here in the USA, hams in the Lone Star State can take comfort in knowing that they have beaten back an attempt by a politician to get BPL turned on—just about everywhere. Amateur Radio Newsline's Charlie Kosman, WB2NQV, tells us how a group of radio amateurs took on the Texas state political system -- and won.

[See BPL in Texas, page 5]

is just around the corner, so make plans to be at the June 17<sup>th</sup> OCARC meeting. Don't miss it!

**The next general meeting will be on**

**Friday, June 17, 2005  
@ 7:00 PM**

### June Program

#### Gordo Does Tropo!

If you are interested in the word above 50MHz, then you must not miss this month's meeting where our guest speaker will be none other than Gordon West-WB6NOA.

Just back from the 2005 Dayton Hamvention where he moderated the forum on tropospheric ducting, Gordon will show what it takes to make a QSO across 2,500 miles on 144 MHz through 5.7 GHz! Hear actual record-breaking tropo contacts. Learn how weather plays an important role in long range VHF/UHF ducting. Listen to live reception, way up at 10 GHz. Find out about the planned California to Hawaii shot on 10 GHz this summer! The tropo season

<i>In This Issue:</i>	<i>Page</i>
THE PREZ SEZ.....	1
HAM RADIO WIN IN TEXAS.....	1
JUNE PROGRAM.....	1
CLUB INFORMATION.....	2
THE JACK GERRITSON SAGA.....	3
KID'S DAY – JUNE 18 <sup>TH</sup> .....	4
HAM HAPPENINGS.....	4
PROPAGATION REPORT.....	4
DX REPORT.....	5
TECH TALK.....	6
A HAM'S PUZZLE.....	6
PRODUCT SPOTLIGHT.....	7
OCARC FIELD DAY INFO.....	9
IN THE MOOD FOR FD?.....	10
MAY MEETING MINUTES.....	12
BOARD MEETING NOTES.....	12
CONTEST CALENDAR.....	12
DAN & KRISTIN'S POT LUCK..	13
A BLAST FROM THE PAST.....	15

**THE ORANGE COUNTY  
AMATEUR RADIO CLUB,  
INC.**  
P.O. Box 3454, Tustin, CA 92781



### 2005 Board of Directors:

**President:**

Ken Konechy, W6HHC  
(714) 744-0217  
[kkonechy@pacbell.net](mailto:kkonechy@pacbell.net)

**Vice President:**

Willie Peloquin, N8WP  
(714) 318-4047  
[n8wp@arrl.net](mailto:n8wp@arrl.net)

**Secretary:**

Rich Helmick, KE6WWK  
(714) 343-4522  
[R2535@sbcglobal.net](mailto:R2535@sbcglobal.net)

**Treasurer:**

Cheryl Peloquin, KC6KTT  
(714) 318-4042  
[Cherool@escapees.com](mailto:Cherool@escapees.com)

**Membership:**

**REVISED**

Dan Dankert, N6PEQ  
(714) 544-9846  
[n6peq@dxer.com](mailto:n6peq@dxer.com)

**Activities:**

Kristin Dankert, K6PEQ  
(714) 832-1227  
[kdankert@comcast.net](mailto:kdankert@comcast.net)

**Publicity:**

Bob Eckweiler, AF6C  
(714) 639-5074  
[af6c@arrl.net](mailto:af6c@arrl.net)

**Technical:**

Kenan Reilly, N6CCE  
(714) 543-5073  
[n6cce@yahoo.com](mailto:n6cce@yahoo.com)

**Members At Large:**

Steve Brody, N1AB  
(714) 974-0338  
[stevebrody@sbcglobal.net](mailto:stevebrody@sbcglobal.net)

and...

Lowell Burnett, KQ6JD  
(714) 997-0999  
[kq6jd@aol.com](mailto:kq6jd@aol.com)

### 2005 Club Appointments:

**W6ZE Club License Trustee:**

Bob Eckweiler, AF6C  
(714) 639-5074  
[af6c@arrl.net](mailto:af6c@arrl.net)

**Club Historian:**

Bob Evans, WB6IXN  
(714) 543-9111  
[bobev@netzero.net](mailto:bobev@netzero.net)

**RF Editor for June:**

Kenan Reilly, N6CCE  
(714) 543-5073  
[n6cce@yahoo.com](mailto:n6cce@yahoo.com)

**WEB Master:**

Ken Konechy, W6HHC  
(714) 744-0217  
[kkonechy@pacbell.net](mailto:kkonechy@pacbell.net)

**ARRL Assistant Director:**

Ken Konechy, W6HHC  
(714) 744-0217  
[kkonechy@pacbell.net](mailto:kkonechy@pacbell.net)

**ARRL Awards Appointee:**

Larry Beilin, K6VDP  
(714) 557-7217  
[k6vdp@aol.com](mailto:k6vdp@aol.com)

**OCCARO Delegate:**

Kristin Dankert, K6PEQ  
(714) 534-2995  
[kdankert@comcast.net](mailto:kdankert@comcast.net)

### Monthly Events:

**General Meeting:**

Third Friday of the month  
At 7:00 PM  
**American Red Cross**  
601 N. Golden Circle Dr.  
(near Tustin Ave. & 4<sup>th</sup> St.)  
Santa Ana, CA

**Club Breakfast REVISED:**

First Saturday of the month  
at 7:30 AM  
Katella Grill  
1325 W. Katella Ave.  
(SE corner at Main St.)  
Orange, CA

### Club Nets (Listen for W6ZE):

7.086 ± MHz CW OCWN  
Sun- 9:00 AM – 10 AM  
Rick KF6UEB, Net Control

21.375 ± MHz USB  
Wed- 7:30 PM - 8:30 PM  
Bob AF6C, Net Control

146.55 MHz Simplex FM  
Wed- 8:30 PM - 9:30 PM  
Bob, WB6IXN, Net Control

### **VISIT OUR WEB SITE**

<http://www.w6ze.org>

for up-to-the-minute club information, the latest membership rosters, special activities, back issues of RF, links to ham-related sites, vendors and manufacturers, pictures of club events and much much more.

### **Club Dues:**

Regular Members ...\$20  
Family Members\* ...\$10  
Teenage Members ..\$10  
Club Badge\*\* .....\$3

Dues run from January thru December & are prorated for new members.

\*Additional members in the family of a regular member pay the family rate up to \$30 per family.

\*\*There is a \$1 charge if you'd like to have your badge mailed to you.

[BPL IN TEXAS, from page 1]

Last April first, Texas Senator Troy Fraser introduced a bill to allow and encourage the implementation of Broadband over Power lines in the State of

Texas. Senate Bill 1748 originally would have allowed power utilities to install BPL anywhere in the state. The Bill drew criticism in its initial draft, because it favored TXU, the major power supplier in the state, and other industry providers by letting the companies pass hefty costs of upgrades to their customers while pooling profits."

In spite of a concerted effort from the Amateur radio community the bill passed the Senate around May 13th using a number of political slight of hand maneuvers. Such as Back on April 21st Senator Fraser added SB 1748 to a previously posted hearing notice, offering known opponents the minimum possible notice of the public hearing.

The committee, which he chairs, passed the bill out of committee that morning. Those who disagreed with this bill, and made phone calls, sent letters, or E-mail, or who made personal visits with the staff members or the Senators themselves were substantially ignored. One amateur who filled out a witness card in opposition to the bill, and personally appeared when it was originally published on the committee agenda, was not even listed - unlike the witnesses representing the BPL lobby.

Subsequently the passed senate bill, 1748 was sent on to the House of Representatives where it was destined to become law.

However thanks to the efforts of newly elected north Texas section manager, Tom Blackwell, N5GAR, Bill Lawless, W5WRL from the west Texas section and south Texas State Government Liaison Jim Robinson, K5PNV, the BPL bill was relegated to the last slot

on the calendar. Additionally, if it did make it to the floor, a series of amendments were ready to scuttle it. As of last Saturday at midnight the time for new bills in the house expired and so did this disastrous piece of legislation. 🍅

### **GERRITSEN ARRAIGNED ON JAMMING CHARGES**

*Article courtesy of Amateur radio Newsline #1451*

Late breaking news regarding alleged radio jammer Jack Gerritsen, the former KG6IRO. Gerritsen, who has a history of broadcasting on police radio frequencies pleaded not guilty at his May 31st arraignment to new charges of obstructing emergency service and military communications.

As previously reported, the 68 year old Bell, California, resident is charged with maliciously interfering with a government communications system, along with a misdemeanor count of transmitting radio signals without government sanction. Prosecutors allege Gerritsen often transmitted pre-recorded anti-war and anti-President Bush messages on radio frequencies he was not licensed to use. Also, that he engaged in real-time harassment on official frequencies for hours at a time. This would make it impossible for emergency and military personnel to use those channels to communicate. This includes an incident last April where he allegedly caused the cancellation of Army Reserve training exercise by transmitting on a military frequency.

According to an affidavit filed with the court, Gerritsen previously spent 38 months in state prison. This, after being convicted of interfering with a police radio frequency in a separate case. He was released July 28, 2003. Soon after the Federal Communications Commission began receiving complaints about his alleged activity on the airwaves.

Gerritsen will be tried in July in the

courtroom of U.S. District Judge R. Gary Klausner. According to the U.S. Attorney's Office, if convicted of both charges, he faces up to 11 years in a federal prison.

### **MORE MAY BE COMING IN THE GERRITSEN CASE**

Accused Southern California radio jammer Jack Gerritsen could soon have some company before the bar of justice. This, according to a posting on the QRZ.com website by Burton Brink, N6USO.

Burton Brink, N6USO is a Los Angeles County Deputy Sheriff and an area repeater owner operator. And in response to a question regarding the possibility of the former KG6IRO returning to the airwaves now that he is out on bond, Brink says -- not to worry.

N6USO notes that Gerritsen put up his home a security on his bail. Also, that he had to borrow an additional \$10,000 to satisfy one of his fines levied against him by the FCC. Brink says that if Gerritsen is caught using any form of radio gear he forfeits the \$250,000 bail, lose his home and gets taken back into custody.

And then Brink makes a rather startling revelation. One which is likely to now have a number of Gerritsen's supporters in the world of Amateur Radio wondering if this might be a good time for them to consult their own lawyers.

According to N6USO other hams that have helped Gerritsen do his deeds are being investigated. He says that they will most likely will lose their licenses and be subject to some form of punitive action after these investigations are concluded.

Brink does not say who is looking into the possibility of charging those who may have aided Gerritsen but its known that several federal

[See GERRITSON, page 4]

[GERRITSON, from page 3]

agencies were involved in bringing the current case now being faced by the former KG6IRO.

What charges these radio amateurs might face is not known, but there are suspicions that some in the ham community have in the past assisted Gerritsen in acquiring ham gear. This, after his previous station was confiscated by authorities some time ago. 🍅

### **KIDS DAY - JUNE 18th**

Mark down Saturday, June 18th as your next chance to participate in the Kid's Day operating event. That's the twice a year ham radio holiday intended to encourage young people - be they licensed or not -- to enjoy Amateur Radio.

How do you take part? That's simple. From 18:00 to 24:00 hours U-T-C, simply open your home station to some local kids. Invite them over. Call CQ Kids Day and let them talk to whoever responds.

The idea of Kids Day is to inspire an interest among these youngsters in ham radio through a hands-on on-the-air experience. And who knows, one or two might even develop enough interest to pursue getting a license. Even if none if those who visit your shack never become hams, they will at least know what amateur Radio is and what it can do for the community.

Again, the next Kids Day operating event takes place on Saturday, June 18th.

More information can be had by joining the Kids Day Reflector at <http://lists.contesting.com/mailman/listinfo/kids>.



### **HAM HAPPENINGS: TAKE YOUR HT TO WORK DAY**

Don't forget to take your H-T to work with you on Tuesday, June 21st. No, its not because the world will be coming to an end on that day and you will be needed to sound the final goodbye. Rather, it's a way to make friends and influence people in the best traditions of ham radio.

The idea for Take Your Handheld to Work Day comes from the ARRL's new Public Relations Director Allen Pitts, W1AGP. Allen says you only have to leave the little radio in plain sight to start a conversation on your favorite subject and maybe even win a prize. Pitts says, "we will have a number of people scattered around the country who will be listening for Amateur Radio operators to be showing Amateur Radio to their co-workers. And you never know: You just might get picked up by one of our secret listeners and awarded one of the ARRL's Repeater Directories, just for doing what hams do which is bragging about our favorite hobby."

Allen says the best time to flash your R-F badge is probably lunch hour. That's when you can put on your own dog and pony show, talking worldwide using an Echolink or IRLP equipped repeater. If there's none in your area, try the local autopatch and like E-T in the movie, let a few people just phone home.

More information on Take Your Handheld to Work Day is on page 45 of the June 2005 issue of QST Magazine. 🍅

**DON'T FORGET TO JOINS US  
ON THE AIR FOR THE W6ZE  
CLUB NETS EACH AND  
EVERY WEDNESDAY  
EVENING STARTING AT 7:30!**

**21.375 ± MHz USB  
Wed- 7:30 PM - 8:30 PM**

**A N D**

**146.55 MHz Simplex FM  
Wed- 8:30 PM - 9:30 PM**

### **PROPAGATION REPORT:**

Sunspot and solar flux readings were up this week while geomagnetic K and A indexes were down a bit. There were no big events triggering geomagnetic storms this week, as indicated by the low A index numbers at the end of this bulletin. A solar wind stream last weekend only drove geomagnetic indices up to moderately active levels. But two big new sunspots, 775 and 776, are rotating to the most effective position for affecting earth. Solar flux for this weekend, June 10-12, is expected to be around 110-115. Geomagnetic conditions should be quiet, although the new sunspots are magnetically complex, and could hold a surprise.

We're moving now toward summer propagation from the recent spring conditions we've been experiencing. Summer solstice in the Northern Hemisphere is set for June 21 at 0646z. Today we are 80 days past the equinox, and the bands are behaving differently than they were a few months ago. For instance, paths from the continental U.S. to South America are open much later on 17 and 20 meters. and run some tests.

For instance, perform a test from the center of the Continental U.S. (by entering W for the prefix) to Brazil for any date this week, and enter an average of several days of sunspot numbers (from the end of this bulletin). You can do the same for a date in late March, and get the numbers from past bulletins at, Even though average sunspot numbers were lower in late March than they've been this week, propagation possibilities to Brazil during mid-day on 10, 12 and 15 meters in March were much better than they are now. But signals over the same path show better current openings much later into the evening on those same bands than they were in late March. Plot from the central U.S. to Hawaii as the target, and 20 meter signals

[See PROPAGATION, page 5]



[PROPAGATION, from page 4]

drop out in the evening in March, but are currently strong all night long.

There have been many nice 6-meter openings recently, mostly via the sporadic-E layer skip that is common this time of year, and Dan Dankert, N6PEQ, along with many hams along the west coast, have reported near all-day openings into parts of Kansas, Texas, and Georgia. Tuesday and Wednesday (June 7<sup>th</sup> and 8<sup>th</sup>) saw a pipeline of activity on 6 from the Pacific Northwest, with many stations coming in at over S9!

Nice to hear such enthusiasm. Maybe that's why 6-meter enthusiasts call it "the magic band."

**Currently, we're two weeks away from Field Day. The long range forecast from the U.S. Air Force shows a planetary A index of 20 (a bit high) for both Saturday and Sunday of Field Day weekend, June 25-26. This is probably predicted because of coronal holes and solar wind from the most recent rotation of the sun. Two weeks is a long way off for predicting conditions, so we'll try to come up with a more meaningful look in a couple of weeks.**

For more information concerning radio propagation and an explanation of the numbers used in this report, please visit <http://www.arrl.org/tis/info/propagation.html>.

Sunspot numbers for June 2 through 8 were 69, 55, 74, 77, 89, 94 and 100 with a mean of 79.7. 10.7 cm flux was 93.3, 95.3, 96.9, 105.4, 106, 109.1 and 115.7, with a mean of 103.1. Estimated planetary A indices were 7, 8, 18, 20, 13, 18 and 6 with a mean of 12.9. Estimated mid-latitude A indices were 7, 10, 12, 14, 7, 11 and 3, with a mean of 9.1. 🍓

## DX REPORT:

This week's bulletin was made possible with information provided by NC1L, QRZ DX, the OPDX Bulletin, The Daily DX, 425DXnews, DXNL, WA7BNM and Contest Corral from QST. Thanks to all.

**GEORGIA, 4L.** Slava, US7IGF is QRV as 4L/homecall from Tbilisi until June 13. Activity is on the HF bands using CW and SSB. QSL to home call.

**JAMAICA, 6Y.** John, KB4CRT will be QRV as 6Y5/KB4CRT from June 10 to 16. Activity will be on 80 to 2 meters. He also plans to be QRV in the ARRL VHF contest. QSL to home call.

**CROATIA, 9A.** Gianfranco, I6GFX and others will be QRV as 9A/homecalls from June 10 to 13 from some of the Croatian islands in the IOTA EU-170 group. QSL to home calls.

**BHUTAN, A5.** Takkuma, JF1EGV has been issued A52EGV by the Bhutan Telecommunications Authority. His license is good through August 8, 2005. He has been active on 15 meters using SSB. QSL via operator's instructions.

**PORTUGAL, CT.** Le, EA7AHS will be QRV as CS0RCL/p from Culatra Island, IOTA EU-144, from June 10 to 12. He will have a beacon on 50123 kHz. QSL to home call.

**ST. PAUL ISLAND, CY9.** The CY9SS DXpedition is QRV until July 7. Activity is on all bands, including 6 and 2 meters, using CW, SSB, WSJT-MS and EME. QSL direct to VY2SS.

**ST. PIERRE AND MIQUELON, FP.** Tom, N6RA will be QRV as FP/N6RA from Miquelon, IOTA NA-032, from June 9 to 21. He will concentrate his activity on 6 meters. He will also participate in the ARRL VHF contest. He will be joined by Joe, K2VUI, from June 9 to 14, who will also be QRV as FP/K2VUI. Activity will be on 80 to

10 meters. QSL to home call.

**ENGLAND, G.** Members from the Warrington ARC will be QRV as GB0SGI from St. Georges Island, IOTA EU-120, from June 13 to 17. Activity will be on all HF bands, although their operating time will be limited. QSL via M0ANM.

**JAPAN, JA.** JA4NVY/4 is QRV from Nino island, IOTA AS-117. QSL to home call.

**SVALBARD, JW.** Jon is QRV as JW8HF and has been active on 20 meters from around 1030 to 1130z and then from 1730 to 2300z. QSL via LA8HF.

**SOUTH SHETLAND ISLANDS, HF0POL** has been QRV on 20 meters from around 1800 to 1900z. QSL via SP3WVL.

**FINLAND, OH.** Look for Juha, OH6OS, Toni, OH6TN and Pasi, OH6UM to be QRV as OH6M from Molpe Island, IOTA EU-101, located in the Botnia Gulf, from June 10 to 12. Activity will be on 80 to 10 meters using CW and SSB. QSL via bureau.

**SUDAN, ST.** Vlad is QRV as ST2VB and has been active on various HF bands. QSL via UA4WHX.

**ASIATIC RUSSIA, UA0.** Yuri, RA0FU and Ken, RA0FW are QRV as homecalls/p from Iturup Island, IOTA AS-025, until June 15. Activity is on 40 to 15 meters, including 2-meters and 70-cm. QSL to home calls. Meanwhile, Look for UE0ISL to be QRV from Zav'yalova Island, IOTA AS-059, from June 11 to 13. Activity will be on 40 and 20 meters. QSL via operator's instructions.

**OPERATION APPROVED FOR DXCC.** The following operation is approved for DXCC credit: Saudi Arabia, HZ1EX, from October 27, 2004 through December 31, 2005.

[See DX, page 10]

## TECH TALK #42:

### Back to Basics with Resistors

by Kenan Reilly, N6CCE

**R**esistors are perhaps the most common component in electronic circuits. Their main function is to limit the current flow or reduce the voltage in a circuit. The physical size of a resistor determines how much power it can dissipate in the form of heat. However, there is no direct correlation between a resistor's physical size and its resistance value.

The resistance may be either fixed or variable. Some fixed resistors are color coded to indicate their resistance value, while others have their resistance values printed right on the body of the component. Variable resistors also have their maximum resistance stamped on them. The basic unit of resistance is the Ohm ( $\Omega$ ), and one important feature of resistance in general is that its effect is the same for both AC and DC circuits.

The two main characteristics of a resistor are its resistance  $R$  in ohms and its power rating ( $W$ ) in watts. Resistors are available in a very wide range of  $R$  values, from a fraction of an ohm to many kilohms ( $k\Omega$ ) and megohms ( $M\Omega$ ). One kilohm is 1,000 ohms, and one megohm is 1,000,000 ohms. When it comes to watts ( $W$ ), a resistor's power rating is very important because it specifies the maximum power the resistor can dissipate (waste) without excess heat.

The most common type of resistor that most of us are familiar with is the carbon resistor with a power rating of 1 W or less.

[See **RESISTORS**, page 11]

## A Ham's Puzzle:

by Bob, AF6C

Joe Dee-Ex moved into a new home with plenty of acreage to put up a wire antenna farm. He puts up seven 80' wooden telephone poles in six rows of three each so he can string antennas between them. How can he place the poles to do this?

### Answer to last month's puzzle:

This is one of those problems that is so simple you'll groan at not coming up with the answer right away! Numerous people thought of using voltmeters, ammeters etc. What makes this so difficult is that you tend to think digitally; the bulb is in one of two states, on or off. However 60-watt (and that's why I mentioned power) light bulbs also get hot when they're on! Here's the solution:

1. Initially, it was stated that all switches are off. Turn one on (let's call it switch 'A') and wait a few minutes.
2. Now turn off switch 'A' and turn on switch 'B'.
3. In a timely fashion, make your one trip up the stairs.
4. The bulb that is on is controlled by switch 'B'; the bulb that is off and warm to the touch is controlled by switch 'A'; and the bulb that is off and cold to the touch is controlled by switch 'C'.

I'd like to thank Dick - W6RNY, Ken - W6HHC, Jim - WA6DIJ, Kenan-N6CCE, Dan-N6PEQ and Bob-WB6IXN for offering solutions, requesting hints and providing feedback.

### BONUS PUZZLE:

Here's a tough non-ham related puzzle for the engineers and mathematicians in the club. I'll post the answer and solution on

the web next month since it is non-trivial and requires some calculus:

Snow starts falling at a constant rate sometime before noon in a small Pennsylvania town. At exactly noon a snowplow starts plowing a street. It travels one mile in the first hour and 1/2 mile in the second hour. What time did the snow start falling?

Hint: The plow's rate of travel is inversely proportional to the height of the snow. 🍎

[DX, from page 5]

THIS WEEKEND ON THE RADIO. The ARRL June VHF QSO Party, ANARTS WW RTTY/Digital Contest, EU EME Contest, Portugal Day Contest, Asia-Pacific SSB Sprint, GACW WWSA CW DX Contest and the REF DDFM 6-Meter Contest will certainly keep contesters busy this weekend. 🍎

### The Ham

A poem by: Eddie M. Phillips, N4EMP

We all have secret desires somewhere locked up in our mind,  
We all wish we could be someone who can help our fellow Mankind!

With all sorts of gadgets and gizmos available to electronics enthusiasts. We spend countless hours trying to accomplish, as in the past, that special electronic device which we hope will benefit us all. Regardless of our efforts, though, the reward always seems so small!

I am one of those who seeks that all but elusive goal to make,  
A new invention in my "shack" that doesn't so easily break!!

Not seeking fame or fortune though, I shall remain an "amateur" at heart. For, if I were of a professional sort, the term "HAM" could never get its start!



**\*\*\* Product Spotlight \*\*\***  
**Down East Microwave Inc. Model 23120PA**  
**23 cm Amateur Band RF Power Amplifier**



*By: Dan Dankert N6PEQ*  
[n6peg@dxer.com](mailto:n6peg@dxer.com)

In December of 2004, Ken Reilly N6CCE, Mike Gaudé WK6O and myself decided to casually operate the ARRL January VHF Sweepstakes. For the most part, the home QTH was well equipped with the radios, preamps, power amplifiers and antennas (yagis, verticals and horizontally polarized loops) for the 50, 144, 222, 432 & 1296 MHz bands. The only exception was that we lacked a high quality RF power amplifier for the 1296 MHz (23 cm) band. After completing some quick research, and making a few phone calls, I discovered that Down East Microwave Inc. (DEMI) had recently started manufacturing a 150-watt amplifier for this band. DEMI has always had an exceptionally good standing in the amateur community for offering high quality antennas, preamps, power amplifiers and transverters for the VHF/UHF/SHF amateur bands. I made an immediate call to DEMI, and was informed that it would only take a few weeks to receive a DEMI model 23120PA amplifier, so I placed an order. Now it was a dash to rearrange a few pieces of equipment to make room in my shack's VHF/UHF station for the new amplifier!

<b>DEMI Model 23120PA Manufacturer's Specifications</b>	
<b>Frequency Range</b>	<b>1240 to 1300 MHz</b>
<b>Power Output (Linear)</b>	<b>120 Watts</b>
<b>Power Output (Saturated)</b>	<b>&gt;150 Watts</b>
<b>Power Input Options (For Rated Linear Output Power)</b>	<b>500 mW, 3 Watts or 10 Watts</b>
<b>Size</b>	<b>10" L x 7" W x 4" H</b>
<b>Power Requirements</b>	<b>13.8 Vdc @ 38 Amps Minimum</b>
<b>Connectors</b>	<b>Type "N"</b>

Once the amplifier arrived, it was removed from the packing material and placed into its new home. Connecting the amplifier was simple, as there are only four external connections required. These are RF Input (Transceiver), RF Output (Antenna), DC Power and PTT. The PTT port is triggered by either a closure to ground, or by a positive voltage that will sink or source approximately 2 mA of current. The triggering method is a customer option, and is determined at the time of ordering the amplifier. This is all the wiring that is necessary. Now it's time to power up the unit, and get it on the air!

On power up, the two large cooling fans start up. The fans produce a large amount of airflow, and are quite loud. Head-phones are highly suggested when using this amplifier. With 150 watts of power output on the 23 cm band, it is essential to keep the four internal Mitsubishi MOSFET power modules cool. The 23120PA was driven by the Kenwood TS-2000X transceiver with approximately 10 watts of input power to the amplifier. Sure enough, on key down the amplifier's relative power meter indicated that we were now putting out a substantial amount of power on 1296 MHz into a 55-element loop yagi!

The picture on the right shows the 23120PA amplifier. Note the compact footprint and nice clean look. The front panel contains a power switch, green power LED, red XMIT LED and a multi-color LED relative power meter.





The picture to the right shows the two hefty cooling fans mounted directly to the amplifier's heat sink. The heat sink encompasses the entire top of the amplifier. The fans produce plenty of CFM's for ample cooling capacity. The 23120PA also incorporates an over temperature protection circuit, just in case your duty cycle is too excessive for the heat sink and fans to maintain the amplifier's internal components within a

safe temperature range.

The picture to the left illustrates the



straightforward and uncluttered layout of the amplifier's back panel. Four easy connections and you are on the air! Note the professional looking construction. This amplifier is well designed and manufactured. I have been especially impressed with the attention to detail in both the electrical and mechanical engineering of the amplifier.

In addition to over temperature protection, the amplifier also sports protection circuitry for high output SWR, excessive output power and excessive input drive. This results in an amplifier that should yield many years of operating fun!

Does the amplifier perform well, and is it worth the cost? In a word...**Yes!** During the VHF Sweepstakes, we worked many grid squares, includes several new ones for my station. A number of stations commented on our excellent signal level and quality! We were elated, considering we were only running a single 55-element loop yagi with a 15' boom (Shown as the antenna closest to the bottom in the picture below). Pictured to the above right is Ken N6CCE as he



operated the ARRL January VHF Sweepstakes with the 23120PA amplifier at the VHF/UHF station of N6PEQ/K6PEQ. Ken worked numerous stations on 1296 MHz SSB/CW, including many stations in central California. The best catch was a station located in Northern California near the Oregon border. That's a long haul on this band! These contacts would had either not occurred, or would had been significantly more difficult, without the added muscle provided by the 23120PA amplifier.



Subsequently in post-contest operating, I found the amplifier to function impeccably in establishing local and long distance contacts. The unit has been a dream to use! The only complaint is the loud cooling fans, but these are essential due to the high power output and compact size of the device. Utilizing a high-end headset, such as ones manufactured by Heil Sound, rectifies this issue. If you are in need for a more powerful signal on 23 cm, I highly recommend this amplifier. It really puts out! DEMI also manufactures power amplifiers for 50, 144, 222, 432, 902, 2300, and 3400 MHz.

Base price for this amp runs \$795 and about \$915 with 10-watt input & amplifier transceiver switching options.

More information on DEMI's complete line of power amplifiers, including the model 23120PA, can be obtained by contacting: **Down East Microwave Inc. 954 Route 519, Frenchtown, NJ 08825 Tel: 908-996-3584, Fax: 908-996-**

3702

Website: <http://www.downeastmicrowave.com>. If you have any questions regarding the DEMI 23120PA feel free to contact me, Dan Dankert at 714-544-9846, or via email at [n6peq@dxer.com](mailto:n6peq@dxer.com) ■



# ***The 2005 ARRL Field Day is Just Two Weeks Away!***

## **OCARC 2005 Field Day Information**

**Field Day Location:** The **Orange County Amateur Radio Club** will be holding 2005 Field Day, the 24-hour simulated emergency communications operation, at the Los Alamitos Joint Forces Training Base (JFTB).

**See base MAP on Page 14**

The main gate to the base can be reached by:

- taking the Valley View exit from the 405 FWY
- and head north on Valley View St. until you reach Katella Ave.
- then turn left on Katella Ave.
- and finally turn south onto Lexington Dr. from Katella Avenue and continue to the JFTB gate.

***Tell the guard at the JFTB gate that you are visiting the amateur radio Field Day event at the EOC.***

The location of the OCARC FD on the base can be reached by continuing south on the gate road and turning left (East) at the road leading to the swimming pool. As you head east, you can see the California Office of Emergency Services EOC building (with large microwave tower.....see annotated map below) as the first building on the north side of the road. Field Day operations will be held in the field north of the EOC building.

All hams and visitors are welcome to the OCARC Field Day event. For a map of the 2005 Field Day Site, check out [www.w6ze.org](http://www.w6ze.org)

**Club Call:** We will be operating under the club call **W6ZE**.

**Date:** The ARRL Field Day is always held on the 4th full weekend in June. This year's dates are Saturday June 25<sup>th</sup> and Sunday June 26<sup>th</sup>.

**Time:** Setup will begin Saturday morning at 7:30 AM. Operations will begin at 11:00 AM local time (1800 hours GMT) on Saturday and continue till 11:00 AM local time Sunday.

**Team Captain:** The rules have changed a bit for this year. We will be operating Class 4A with four simultaneous stations on the air (plus VHF/UHF) for the 24 hour period. We need all the help we can get, even if you can come for only a few hours.

Contact these team leaders for more details. They all need more operators, so give them a call.

**15M/80M - Kenan Reilly - N6CCE (714-543-5073)** is the team captain for the 15/80 meter station. This station will operate 15 by day and 80 by night as conditions allow.

**20M - Ken Konechy - W6HHC (714-744-0217)** is the team captain. This station will remain on while the band is open.

**40M - John - WB6AJE** is the team captain

**VHF/UHF - Tom Thomas - WA6PFA (714-779-2917)** is the team captain; he is also our Bonus Points coordinator.

We can get lots of bonus points as listed below.

- Public information table-100 points. We need to make hand out sheets and a visitor log.
- Alternate power-100 points. We need to make a minimum of 5 contacts on solar power.
- Demonstration-100 points each for a demonstration of APRS, ATV, and SSTV.
- Site visitor-100 points for a visit to our site by a government official or Red Cross official.

**Points:** Other points: We get 100 points for emergency power, 100 points for each H.F. station (400), 100 points for being in a public place, 100 points for a published newspaper article, and up to 200 points for message copy/sending.

Phone contacts count 1 point each and CW/digital contacts count 2 points each. I challenge each station to make a few CW contacts. We will be using laptops for logging, or log sheets for manual logging.

# GETTING YOU IN THE MOOD FOR FIELD DAY

Don't quite have the Field Day Spirit yet? Perhaps this collage of past Field Day pictures will do the trick...





[RESISTORS, from page 6]

**Types of resistors:**

**Carbon-Composition**

Figure 1 below shows some carbon resistors commonly used on PC boards. Typically the leads are cut and formed for insertion into holes with 0.5-in. spacing.



Figure 1 – Typical carbon-composite resistors.

**Surface-Mount**

Another more common type of resistor in use today is the surface-mount or *chip* resistor. Chip resistors are used in circuits typically requiring power dissipation ratings from 1/8 to 1/4 watt. Figure 2 shows some typical resistors. Can you guess what their value is?

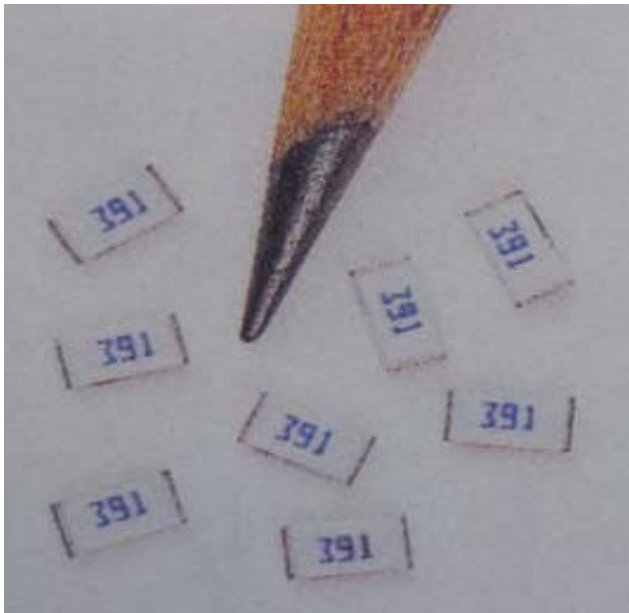


Figure 2 – Typical chip resistors.

**Determining Resistor Values**

**Color Coding** – If you look back at Figure 1, you will notice that each of the resistors has colored stripes. These

color “bands” are what determine the resistor’s value. Because these carbon resistors are small physically, they are color-coded to mark their *R*-value. The basis of this system is the use of colors for numerical values, as listed in Table 1.

COLOR	VALUE	COLOR	VALUE
Black	0	Green	5
Brown	1	Blue	6
Red	2	Violet	7
Orange	3	Gray	8
Yellow	4	White	9

Table 1 – Resistor Color Codes

Most of the time the carbon-composite resistor will have four color bands or stripes on it. The use of the color bands is the most common system for color-coding carbon resistors. Read from left to right, the first band gives the first digit of the resistor’s value. The next band marks the second digit, and the third band is the decimal multiplier, which gives the number of zeros after the first two digits. Figure 3 shows the arrangement of the bands on a carbon resistor.

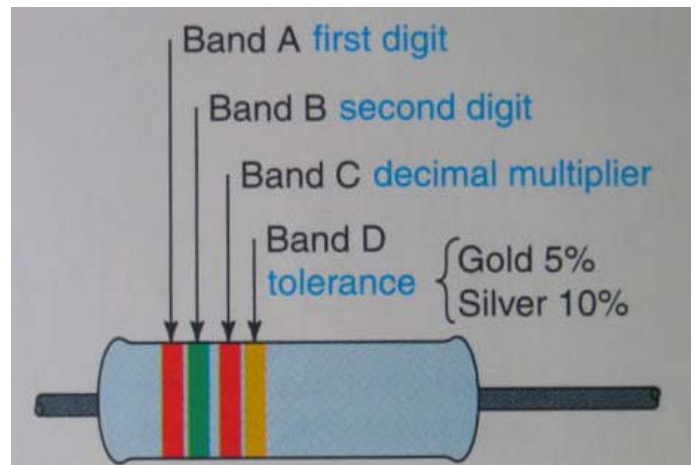


Figure 3 – How to read color bands on carbon resistors.

In this figure, the colored bands are read as: RED-GREEN-RED-GOLD. Red is 2; Green is 5 and the third, multiplier band is Red which means there are two zeros after the 2 and the 5 giving us a resistor value of 2,500 Ohms or 2.5kΩ.

The fourth band is the resistor value’s tolerance. In other words, it is the percentage by which the actual *R*-value can be different from the color-coded value. For example, the resistor in Figure 3 has gold as the fourth band. Since gold corresponds to a tolerance of ±5%, the 2500 Ω resistance can vary ±125 ohms.

[See RESISTORS, page 14]



## OCARC General Meeting Minutes

For May 20, 2004

The meeting was called to order by our President, Ken Konechy-W6HHC. N1AB called the role of the Board of Directors, all of which were present except for Rich-KE6WWK and Lowell-KQ6JD.

Our program was given by Wayne Barring, KB6UJW. Wayne is the Anaheim C.E.R.T. Officer and Races Chief Radio Officer. The program discussed the lessons learned from hurricane Charley that recently damaged parts of Florida.

Following the break, additional club business was conducted. The club has a total of \$2551.66 split between the checking and saving accounts.

Planning meetings are being conducted in preparation of Field Day. The newsletter will be prepared by Kennan, N6CCE for June, Willie-N8WP, will prepare the RF for August and Ken, W6HHC will prepare the newsletter for September.

For the Good of the Club, Bob AF6C records and plays back Newsline using his iPod.

Last months minutes were accepted as published.

Next month WB6NOA, Gordo will give the next month's program "Gordo Does Tropo"

Submitted by Steve Brody-N1AB; subbing for Rich Helmick KE6WWK. 🍅

### Did You Know...

Just about every mode of communication available today is used by hams. Some of them include, AM, FM, SSB, CW. Hams can even send TV pictures across the country or around the world! All forms of digital communication are used as well, and computers have become a communication tool used by almost every ham today. 🍅

## OCARC Board Meeting Minutes

For June 4, 2005

There were 11 present at the Katella Grill Restaurant, of which 7 were board members. Willie, Cheryl and Kenan were absent.

The meeting was called to order at 8:07 am by President Ken W6HHC.

*Director reports:*

**Programs:** Gordon West will give the program this month, Echo link will be the program for July and "The health of your club" program is in the works.

**Secretary:** Tustin post office has locked us out of the PO Box for non-payment. Ken W6HHC will contact Cheryl regarding a check that was being "cut" for this fee. If she is not available, the secretary will pay the fee and get reimbursed later. A form updating those who can access the PO Box is being submitted to the postal service this month.

**Treasurer:** The report showed \$2683 in the bank and it will be available at the next club meeting.

**Activities:** Kristin, K6PEQ, has made a collage to be displayed at the OC Fair Ham booth showing club activities. Sign ups for the potluck will start soon. Kristin has taken names from last years OC Fair visitors logbook and sent them information about the club.

**Membership:** Dan, N6PEQ, is working on the new roster.

**Publicity:** Bob AF6C, says a sign advertising the club is being made for display at HRO. Also a press release has been submitted regarding the club activities on FD.

**Director at Large:** Steve N1AB is continuing to look for possible new club members by forwarding the ARRL new HAM/member list.

**OLD BUSINESS:**

President Ken relayed that the club field day preparations are under con-

trol and rolling along nicely. Ken asked if someone could take the beam antennas to and from Los Al for field day. Bob, KD6XO said he could help with that task. There is however a need for a "back up" person in case Bob is unable to do this task. Bob, AF6C, says that the club FD filters are "in the mail".

**NEW BUSINESS:**

The question of whether or not the club accepts advertising for the RF was raised. After discussion it was decided that the club tradition of printing the business card of a business that donates prizes for the club raffle will be continued.

- The Board meeting for now will continue at the Katella Grill in Orange. President Ken has notified CowGirls Two that we will not coming back for the rest of the year.

- Dan gave a DX report. You can always contact him for the latest DX info.

Meeting adjourned at 8:35 AM.

de Rich Helmick - KE6WWK

Secretary 🍅

## Contest Calendar

-----

Here are just a few of the Ham Radio contests that are coming your way. Visit [www.arrl.org](http://www.arrl.org) for more details.

**ARRL Field Day**

**June 25 - 26**

IARU HF World Championships

July 9 - 10

ARRL UHF Contest

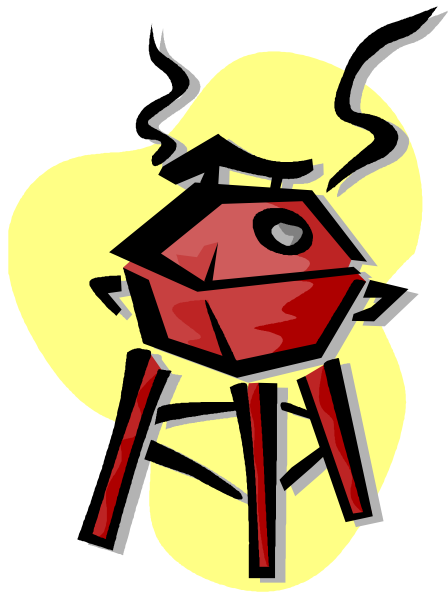
August 6 - 7

ARRL 10 GHz and Up Contest

August 20 - 21

ARRL September VHF QSO Party

September 10 - 12



# OCARC POTLUCK JULY 30th !!

**QTH:** Dan (N6PEQ) and Kristin's (K6PEQ) home.

**When:** July 30th, 12:00 Noon until?

**What to Bring:** You, your spouse and a food item. We will have sign up's at the O.C.A.R.C. meetings and breakfasts in June and July. If you are unable to attend a meeting but would like to attend the potluck, please e-mail Kristin-K6PEQ at [k6peq@comcast.net](mailto:k6peq@comcast.net).

*We will be providing hamburgers and hot dogs. We hope you will be able to come and have fun!*





## OCARC Field Day Site Location on Los Alamitos JFT Base

- The main gate is on North edge of PIX
- The FD site is in the field North of EOC bldg
- Look for the nearby microwave tower



The color bands and the corresponding tolerance values are shown in Table 2 on page 14.

Resistor Tolerance Values	
COLOR	VALUE
NO BAND	$\pm 20\%$
Gold	$\pm 5\%$
Silver	$\pm 10\%$
Brown	$\pm 1\%$
Red	$\pm 2\%$
Green	$\pm 0.5\%$
Blue	$\pm 0.25\%$
Violet	$\pm 0.1\%$

Table 2 – Carbon resistor tolerance band values

If there is no band on the resistor to indicate tolerance, then the resistor has a tolerance of  $\pm 20\%$ .

Most resistors that you and I will deal with have only four color bands, but some have five bands. These special resistors are called *precision resistors*. With precision resistors, the first three color bands indicate the first three digits, followed by the decimal multiplier (number of zeros) in the fourth band, and finally the tolerance in the fifth band. While the four-band resistors will typically show either a gold or a silver band to indicate tolerance, precision resistors will have a color other than gold or silver to show the tighter tolerance. See Table 2 for the additional colors used for these bands.

Determining resistance values for chip resistors is a lot easier, because it's printed right on the resistor package. Figure 4 show how to read the R-value from a surface mount resistor.

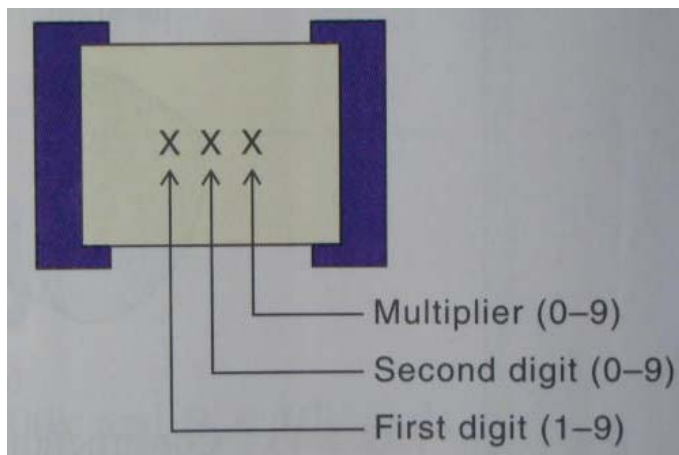


Figure 4 – Typical chip resistor coding system.

The resistance value of a chip resistor is determined from the 3-digit number printed on the film or body side of the

component. The three digits provide the same information as the first three color stripes on a four-band resistor.

### Variable Resistors

A variable resistor has a resistance that can be varied over a range of values. They can be either wire-wound or the carbon type. Figure 5 shows the make up of a typical carbon-film variable resistor.

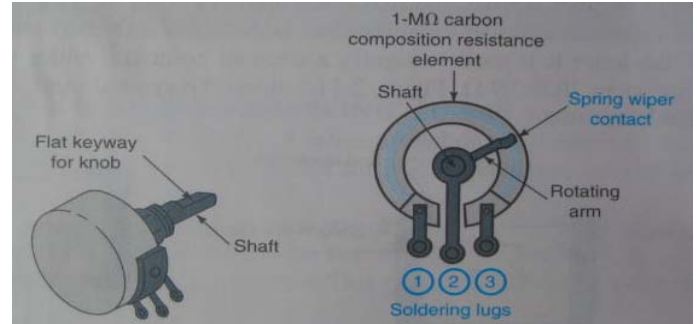


Figure 5 – Construction of a variable carbon resistance control.

As you can see from Figure 5, variable resistors, also called *potentiometers*, have three terminals. The outer two terminals are typically connected to a thin round disk with a carbon coating and the middle terminal is connected to the variable arm that contacts the carbon film on the disk. As the shaft of the potentiometer is turned, the variable arm moves the wiper to make contact at different points on the resistor element thus changing the *R*-value.

Potentiometers are available with a total *R* from 1,000  $\Omega$  to 5 M $\Omega$ . Their power rating is usually  $\frac{1}{2}$  to 2 watts. They also come in variety of colors shapes and configurations as seen in Figure 6.



Figure 6 – Small potentiometers and *trimmers* often used for variable controls in electronic circuits.

Next month, we will look into how resistors work in an actual circuit. 🍅

And finally, a blast from the past - 50 years ago that is. An article I found from the October 1955 issue of RF. Enjoy!

### A SATIRE ON THE AMATEUR

Verily I say unto you, marry not a radio amateur, for he is a strange being, possessed of many devils. He speaketh eternally in dit-dahs, and he spelleth his words without vowels. He wieldeth a big stick called a slide rule, and he hath but one Bible -- the Handbook. He talketh always of QSO's and DX, and without end of his loading coil. He knoweth countries only by prefixes; he learneth his geography by zones, his directions are great circle bearings. He stayeth up late at nights, for reasons known but to him, thou wouldst not believe his stories if he told you. There is but one key dear to his heart, that is a Vibroplex; the love letters for which he yearneth are DXCC. Whilst others prefer swimming and boating he prefereth to sit inside and work portable, and he braggeth forever of those he hath worked.

And when he courteth his damsel, he keepeth a log book, and when he maketh a trip he views not the scenery, but looketh for antennas. He picketh his seat in the car by the rig and not by the damsel beside him. Always he carrieth his books with him, and he entertaineth his maiden with Ohm's Law. Verily though she expecteth chocolates when he calleth, she opens the package to find filter chokes. He holdeth a damsel's hand only to measure the fist; and he embraceth but to test the strength of the muscle. He checketh the vibrations of her heart with WWV, and he reckoneth her strength for raising antennas. For though he seeketh to acquire a second op, he attendeth the wedding but to record it on tape; he goeth on a honeymoon just to visit radio clubs; he returneth home only to pound brass. He speaketh of his mate as YF and XYL and of the kids as harmonics.

Surely goodness and mercy will follow this man, for he will need it; there may be no improvement and he will need help forever.

---

ORANGE COUNTY AMATEUR RADIO CLUB, INC  
P.O. BOX 3454  
TUSTIN, CA 92781-3454

***First Class Mail***

***Time Dated Material.  
Please Expedite!!***