

#### ORANGE COUNTY AMATEUR RADIO CLUB, INC.

VOL. XLIX NO. 7

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

**July 2008** 

The Prez Sez.....

By Willie N8WP



Hello OCARC,

I hope everyone had a good time at Field Day. I really appreciate all the hard work that went into setting up and tearing down the site. Special Kudos go out to the few who stayed till the very end to help.

There is still a lot of work that needs to be done.

I will be working in Boston for a few months, Cheryl and I expect to be heading east very soon. I expect to be back at Boeing Anaheim when the next contract get rolling.

See you soon.

73,

Willie - N8WP



The OCARC program for the July meeting will be presented by David Corsiglia – WA6TWF speaking on:

#### **WA6TWF Super System**

The Super System provides users with many state-of-the-art capabilities which allow users to converse with hams all over the world. Just think about being on your patio or walking around your neighborhood with a hand-held radio hardly larger than a pack of cigarettes and conversing with perfect clarity with someone in London or Stockholm! Don't miss it

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The next general meeting will be:

Friday, July 18<sup>th</sup> @ 7:00 PM

We will be meeting in Room 208
In the east Red Cross Building

ORANGE COUNTY
AMATEUR RADIO CLUB
www.W6ZE.org



#### 2008 Board of Directors:

President:

Willie Peloquin, N8WP (714) 318-4047 N8WP@arrl.net

**Vice President:** 

Nicholas Haban, AF6CF (714) 693-9778 AF6CF@w6ze.org

Secretary:

Ken Konechy, W6HHC (714) 744-0217 W6HHC@w6ze.org

Treasurer:

Paul Gussow, W6GMU (714) 624-1717 **W6GMU@w6ze.org** 

Membership:

Chris Winter, W6KFW (714) 543-6943 W6KFW@w6ze.org

**Activities:** 

Kristin Dankert, K6PEQ (714) 544-9846 **K6PEQ@scdxc.org** 

**Publicity:** 

Rich Helmick, KE6WWK (714) 343-4522 **KE6WWK@arrl.net** 

Technical:

Bob Eckweiler, AF6C (714) 639-5074 AF6C@w6ze.org

Member-At-Large:

Dan Dankert, N6PEQ (714) 544-9846 N6PEQ@comcast.net

Hank Welch, W6HTW (562) 697-2239

W6HTW@w6ze.org

#### 2008 Club Appointments:

**W6ZE Club License Trustee:** 

Bob Eckweiler, AF6C (714) 639-5074 AF6C@w6ze.org

**Club Historian:** 

Bob Evans, WB6IXN (714) 543-9111 bobev@netzero.net

RF Editor (rotating):

Ken Konechy, W6HHC (714) 744-0217 **W6HHC@w6ze.org** 

**WEB Master:** 

Ken Konechy, W6HHC (714) 744-0217 W6HHC@w6ze.org

**ARRL Assistant Director:** 

Ken Konechy, W6HHC (714) 744-0217 **W6HHC@w6ze.org** 

ARRL Awards Appointee:

Arnie Shatz, N6HC (714) 573-2965 **N6HC@aol.com** 

Larry Beilin, K6VDP (714) 557-7217 **K6VDP@aol.com** 

**OCCARO Delegate:** 

Loran Dargatz, KD6LRD (714) 777-9081 DargatzLR@msn.com **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:

First Saturday of the month at 8:00 AM Jagerhaus Restaurant 2525 E. Ball Road (Ball exit off 57-Freeway) Anaheim, CA

Club Nets (Listen for W6ZE):

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

28.375 ± MHz SSB 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 Dec and 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.

## OCARC Field Day 2008

Los Alamitos JFTB



#### FIELD DAY SUMMARY

#### FOR

#### THE ORANGE COUNTY AMATEUR RADIO CLUB - W6ZE

by: Ken/W6HHC & Bob/AF6C

|              | 160M | 80M      | 75M        | 40M    | 40M        | 20M | 20M        | 15M | 15M                                     | 12M | 10M    | 10M      | 6M | 6M     | 2M | 2M      | 220 | 440 | UHF | UHF |     | RTTY | SAT-   |      | TOT            | AL         |
|--------------|------|----------|------------|--------|------------|-----|------------|-----|---|-----|--------|----------|----|--------|----|---------|-----|-----|-----|-----|-----|------|--------|------|----------------|------------|
| YEAR         | SSB  | CW       | SSB        | CW     | SSB        | CW  | SSB        | CW  | SSB                                     | SSB | CW     | SSB      | CW | PHN    | CW | PHN     | PHN |     | CW  | -   | ATV | PKT  | ELLITE | GOTA | _              | / (POINTS) |
| 2008         | 0    | 179      | 204        | 690    | 405        | 411 | 878        | 141 | 43                                      | 0   | 22     | 68       | 15 | 135    | 0  | 34      | 2   | 14  | 0   | 3   | 0   | 0    | 5      | 16   | 3.265          | / 9,468    |
| 2007         | 1    | 356      | 310        | 910    | 830        | 988 | 1285       | 381 | 320                                     | 0   | 18     | 150      | 9  | 145    | 2  | 175     | 40  | 70  | 2   | 9   | 0   | 2    | 11     | 142  | 6,156          | / 17,648   |
| 2006         | 0    | 28       | 20         | 89     | 512        | 156 | 664        | 16  | 10                                      | 0   | 0      | 0        | 0  | 38     | 1  | 85      | 0   | 7   | 0   | 0   | 0   | 114  | 0      | 113  | 1,853          | / 4,514    |
| 2005         | 0    | 113      | 6          | 158    | 481        | 337 | 534        | 122 | 17                                      | 0   | 0      | 0        | 0  | 74     | 0  | 36      | 16  | 20  | 0   | 0   | 0   | 0    | 0      | 31   | 1,945          | / 5,350    |
| 2000         | Ů    |          | Ü          | 100    | 101        | 001 | 001        |     | • | Ü   | ·      | Ů        | Ü  |        | Ŭ  | 00      |     |     | Ŭ   | Ů   | Ü   | Ū    | ·      | 01   | 1,010          | , 0,000    |
| 2004         | 0    | 166      | 239        | 37     | 412        | 131 | 477        | 31  | 105                                     | 0   | 1      | 114      | 0  | 0      | 0  | 46      | 12  | 20  |     |     | 0   | 0    | 1      | 0    | 1.792          | / 4,316    |
| 2003         | 0    | 0        | 85         | 52     | 127        | 27  | 295        | 0   | 191                                     | 0   | 0      | 41       | 0  | 52     | 0  | 64      | 1   | 13  |     |     | 0   | 0    | 0      | 0    | 948            | / 2,054    |
| 2002         | 0    | 26       | 69         | 192    | 279        | 76  | 229        | Ö   | 485                                     | 0   | 0      | 18       | 0  | 62     | 0  | 68      | 6   | 10  |     |     | 3   | 2    | 0      | 3    |                | / 3,648    |
| 2001         | 0    | 0        | 25         | 101    | 251        | 0   | 432        | 0   | 675                                     | Ö   | Ö      | 109      | 0  | 48     | 0  | 28      | 1   | 0   |     |     | 0   | 0    | 3      | -    | 1,673          | / 3,548    |
| 2000         | 0    | 19       | 20         | 88     | 91         | 0   | 625        | 0   | 794                                     | 0   | 0      | 121      | 0  | 36     | 0  | 72      | 7   | 15  |     |     | 0   | 0    | 1      | _    | 1,889          | / 3,992    |
| 2000         | O    | 13       | 20         | 00     | 31         | Ü   | 020        | Ü   | 754                                     | O   | O      | 121      | O  | 50     | Ü  | 12      | '   | 10  |     |     | O   | O    | '      |      | 1,000          | 7 0,552    |
| 1999         | 0    | 13       | 20         | 15     | 237        | 0   | 996        | 0   | 724                                     | 0   | 0      | 22       |    | 5      | 0  | 2       | 0   | 0   |     |     | 0   | 0    | 0      | _    | 2,034          | / 4,124    |
| 1998         | 0    | 24       | 75         | 65     | 136        | 100 | 250        | Ö   | 624                                     | 0   | 0      | 82       |    | 0      | 0  | 46      | 17  | 12  |     |     | 0   | 7    | 1      | _    | 1,439          | / 3,270    |
| 1997         | 5    | 81       | 131        | 83     | 306        | 150 | 853        | 14  | 275                                     | 0   | 0      | 106      |    | 32     | 0  | 79      | 4   | 0   |     |     | 0   | 32   | 1      | _    | 2,152          | / 5,024    |
| 1996         | -    | 146      | 228        | 104    | 125        | 283 | 673        | 40  | 605                                     | 0   | 0      | 217      |    | 121    | 0  | 32      | 0   | 40  |     |     | 0   | 13   | 1      | _    | ,              | / 6,428    |
| 1995         | -    | 145      | 272        | 203    | 94         | 443 | 572        | 51  | 451                                     | 0   | 0      | 131      |    | 66     | 0  | 93      | 29  | 8   |     |     | 0   | 33   | 6      | -    | 2,597          | / 6,944    |
| 1333         | -    | 1+3      | 212        | 200    | 34         | 773 | 512        | 31  | +51                                     | U   | U      | 131      |    | 00     | U  | 33      | 23  | J   |     |     | J   | 33   | J      | -    | 2,001          | , 0,344    |
| 1994         | _    | 114      | 114        | 208    | 45         | 486 | 748        | 85  | 761                                     | 0   | 13     | 312      |    | 58     | 0  | 94      | 33  | 0   |     |     | 0   | 31   | 0      | _    | 3,102          | / 8,078    |
| 1993         | _    | 150      | 100        | 159    | 81         | 530 | 700        | 131 | 812                                     | 0   | 0      | 179      |    | 40     | 0  | 86      | 12  | 16  |     |     | 0   | 35   | 0      | _    | 3,061          | / 8,132    |
| 1992         |      | 0        | 294        | 200    | 110        | 541 | 555        | 0   | 840                                     | 0   | 0      | 232      |    | 13     | 0  | 74      | 0   | 10  |     |     | 2   | 41   | 80     | _    | 2,983          | / 7,530    |
| 1991         | -    | 105      | 308        | 182    | 182        | 400 | 623        | 9   | 463                                     | 0   | 0      | 104      |    | 4      | 0  | 141     | 23  | 11  |     |     | 0   | 48   | 0      | -    | 2,626          | / 6,740    |
| 1990         | -    | 0        | 0          | 70     | 144        | 0   | 370        | 0   | 747                                     | 0   | 0      | 131      |    | 39     | 0  | 114     | 14  | 26  |     |     | 0   | 2    | U      | -    | 1,657          | / 3,454    |
| 1990         | -    | U        | U          | 70     | 144        | U   | 370        | U   | 747                                     | U   | U      | 131      |    | 39     | U  | 114     | 14  | 20  |     |     | U   | 2    | -      | -    | 1,007          | 7 3,434    |
| 1989         |      | 30       | 0          | 98     | 5          | 0   | 906        | 21  | 172                                     | 0   | 0      | 238      |    | 3      | 0  | 121     | 24  | 9   |     |     | 1   | 18   |        | _    | 1,646          | / 3,590    |
| 1988         | -    | 127      | 0          | 93     | 75         | 2   | 359        | 0   | 570                                     | 0   | 144    | 81       |    | 0      | 0  | 32      | 0   | Э   |     |     | '   | 14   | -      | -    | 1,497          | / 3,726    |
| 1987         | -    | 22       | 0          | 0      | 39         | 0   | 708        | 0   | 18                                      | 1   | 117    | 0        |    | 1      | 0  | 51      | 0   | -   |     |     | -   | 5    | -      | _    | 962            | / 2,202    |
| 1986         | -    | 0        | 46         | 219    | 78         | 0   | 488        | 0   | 45                                      | 10  | 0      | 0        |    | 0      | 0  | 82      | 0   | -   |     |     | -   | 0    | -      | -    | 968            | / 2,202    |
| 1985         | -    | 85       | 0          | 315    | 91         | 35  | 662        | 78  | 0                                       | -   | 0      | 0        |    | 0      | 0  | 22      | 0   | -   |     |     | -   | U    | -      | -    | 1,288          | / 3,602    |
| 1900         | -    | 65       | U          | 313    | 91         | 33  | 002        | 70  | U                                       | -   | U      | U        |    | U      | U  | 22      | U   | -   |     |     | -   | -    | -      | -    | 1,200          | 7 3,002    |
| 1984         | _    | 18       | 0          | 313    | 0          | 32  | 196        | 32  | 350                                     | _   | 0      | 0        |    | 0      | 0  | 0       | 0   | _   |     |     | _   | _    | _      | _    | 941            | / 2,672    |
| 1983         |      | 3        | 93         | 200    | 0          | 0   | 776        | 0   | 995                                     |     | 0      | 43       |    | 18     | 0  | 16      | 1   |     |     |     |     |      |        |      |                | / 4,696    |
| 1982         | -    | 0        | 105        | 59     | 238        | 40  | 352        | 19  | 515                                     | _   | 0      | 72       |    | 0      | 0  | 155     | 27  | _   |     |     | -   | -    | -      | -    | 1,582          | / 3,400    |
| 1981         | -    | 0        | 167        | 200    | 265        | 60  | 699        | 77  | 717                                     | -   | 0      | 105      |    | 0      | 0  | 197     | 0   | -   |     |     | -   | -    | -      | _    | 2,487          | / 5,648    |
| 1980         | -    | 20       | 149        | 205    | 235        | 471 | 318        | 52  | 1,025                                   | -   | 0      | 226      |    | 12     | 0  | 100     | 36  | -   |     |     | -   | -    | -      | _    | 2,467          | / 7,194    |
| 1900         | -    | 20       | 143        | 203    | 233        | 471 | 310        | 32  | 1,023                                   | -   | U      | 220      |    | 12     | U  | 100     | 30  | -   |     |     | -   | -    | -      | -    | 2,049          | 7 7,134    |
| 1979         |      | 0        | 195        | 198    | 92         | 42  | 773        | 0   | 737                                     |     | 0      | 95       |    | 0      | 2  | 124     | 8   |     |     |     |     |      |        |      | 2,266          | / 5,016    |
| 1978         | -    | 16       | 195        | 246    | 170        | 30  | 981        | 57  | 558                                     | -   | 13     | 145      |    | 0      | 1  | 164     | 23  | -   |     |     | -   | -    | -      | -    | 2,200          | / 5,016    |
| 1977         | -    | 25       | 243        | 182    | 199        | 0   | 843        | 81  | 486                                     | _   | 4      | 309      |    | 0      | 4  | 234     | 0   | -   |     |     | -   | -    | -      | _    | ,              | / 5,812    |
| 1976         | -    | 99       | 254<br>254 | 152    | 487        | 21  | 600        | 64  |   | -   | 2      | 54       |    | 0      | 0  | 234     | 0   | -   |     |     | -   | -    | -      | -    | 1,945          | / 4,566    |
| 1975         | -    | 99<br>80 | 120        | 154    | 274        |     | 863        |     | 210<br>259                              | -   | 0      | 123      |    | 0      | 0  | 0       | 0   | -   |     |     | -   | -    | -      | -    |                |            |
| 19/5         | -    | 00       | 120        | 154    | 2/4        | 40  | 003        | 140 | 259                                     | -   | U      | 123      |    | U      | U  | U       | U   | -   |     |     | -   | -    | -      | -    | 2,053          | / 4,934    |
| 1074         |      | 6        | 161        | 6      | 222        | 0   | 620        | 10  | 242                                     |     | 0      | 110      |    | 0      | 0  | 0       | 0   |     |     |     |     |      |        |      | 1 600          | / 2.240    |
| 1974<br>1973 | -    | 6<br>90  | 161<br>226 | 6<br>0 | 333<br>452 | 0   | 630<br>932 | 12  | 342<br>273                              | -   | 0<br>0 | 110<br>0 |    | 0<br>0 | 0  | 0<br>46 | 0   | -   |     |     | -   | -    | -      | -    | 1,600<br>2,019 | / 3,248    |
|              | -    |          |            | 0      |            | 0   |            | 0   |   | -   |        |          |    | -      | 0  |         | 0   | -   |     |     | -   | -    | -      | -    | ,              | / 4,218    |
| 1972         | -    | 0        | 50         | -      | 350        | 0   | 521        | 0   | 530                                     | -   | 0      | 0<br>0   |    | 0      | -  | 94      | -   | -   |     |     | -   | -    | -      | -    | 1,545          | / 3,090    |
| 1971         | -    | 0        | 274        | 0      | 106        | 0   | 530        | 0   | 136                                     | -   | 0      | 0        |    | 0      | 0  | 0<br>0  | 0   | -   |     |     | -   | -    | -      | -    | 1,046          | / 2,092    |
| 1970         | -    | 0        | 272        | 0      | 0          | 0   | 531        | 0   | 426                                     | -   | 0      | U        |    | 0      | 0  | U       | 0   | -   |     |     | -   | -    | -      | -    | 1,229          | / 2,458    |
| 4000         |      | ^        | 00         | ^      | <b>5</b> 0 | ^   | 275        | ^   | 204                                     |     | ^      | ^        |    | ^      | ^  | 160     | ^   |     |     |     |     |      |        |      | 000            | / 1.000    |
| 1969         | -    | 0        | 98         | 0      | 50         | 0   | 375        | 0   | 301                                     | -   | 0      | 0        |    | 0      | 0  | 169     | 0   | -   |     |     | -   | -    | -      | -    | 993            | / 1,986    |
| 1968         | -    | 10       | 224        | 62     | 396        | 93  | 328        | 24  | 430                                     | -   | 0      | 68       |    | 0      | 0  | 145     | 0   | -   |     |     | -   | -    | -      | -    | 1,780          | / 3,938    |

Note: These are raw contacts taken directly from the log sheets. Adjustments have not been made for duplicate contacts, and bonus points have not been added yet. Final scores appear in QST.

### TechTalk #70 WB6IXN SEISMOMETER ANTENNA

#### by Bob WB6IXN

Did you know that some earthquake seismometers broadcast the magnitude of the earth's displacement via radio waves on frequencies near the 2M band? The tone on the carrier changes in direct proportion to the displacement of the seismometer. So with a radio-seismometer you can hear an earthquake coming...or hear the earthquake waves in the Earth generated by far away earthquakes like in China, Japan, or Chile.

The primary seismometer that can be heard in Orange County is the San Sevaine seismometer located on the San Sevaine flats (near Lytle Creek) in the San Gabriel Mts. The San Sevaine seismometer broadcasts its carrier on 163.795 MHz.

This seismometer is a little hard to hear in OC, so you will need an antenna with some gain over a ¼-wave vertical or whip antenna. This article describes a high gain easy-to-make YAGGI type of antenna cut for the 163/164 MHz band

#### **How To Make It**

The WB6IXN Seismometer Antenna is an 11-element YAGGI that will provide lots of gain. An overall diagram of the YAGGI is shown in Figure 1, below. The elements are constructed from simple stiff aluminum wire (aka clothesline). The driven element is a "folded dipole" as shown in Figure 2 on the next page.

The boom length for the antenna will be determined by the total distance between reflector and the last director element (Director #9).

At the hardware store you will need to get a roll of aluminum plastic-coated clothesline. Straighten the wire, and you are ready to cut the elements.

The length of the straight elements are listed below:

```
Refltr = 5904/164.0 MHz = 36 inch length
Dir #1 = 5400/164.0 MHz = 32-7/8 in. length
Dir #2 = 5400/164.5 MHz = 32-3/4 in. length
Dir #3 = 5400/165.0 MHz = 32-11/16 in. length
Dir #4 = 5400/165.5 MHz = 32-5/8 in. length
Dir #5 = 5400/166.0 MHz = 32-1/2 in. length
Dir #6 = 5400/166.5 MHz = 32-3/8 in. length
Dir #7 = 5400/167.0 MHz = 32-1/4 in. length
Dir #8 = 5400/167.5 MHz = 32-3/16 in. length
Dir #9 = 5400/168.0 MHz = 32-1/8 in. length
```

The total length of wire used to construct the folded dipole element shown in Fig 2 is based on:

```
Length = 5616/164.0 \text{ MHz} = 34-1/4 \text{ inch}
Wire length = 34-1/4 + 34-1/4 + 1 + 1 - 1 + 1
= 70.5 \text{ inches of wire}
```

My antenna boom is a piece of old rose trellis, made water resistant with water seal and marine varnish. Starting and one end of the boom, drill a hole slightly larger than the diameter of the aluminum clothesline wire for the reflector element. Next push the wire for the reflector through the hole until it is centered with the boom. If the reflector wire is too loose in the boom, use tooth picks, or small wood shims, pushed into the hole around the reflector to secure it in position. Put a drop of epoxy or silicon

Cont'd on Pg 6

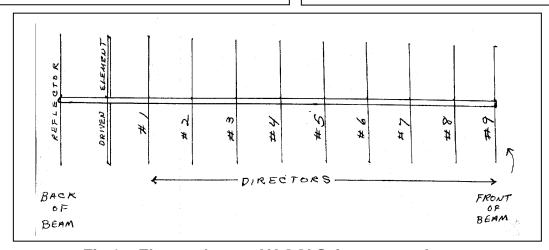


Fig 1 – Eleven-element YAGGI Seismometer Antenna

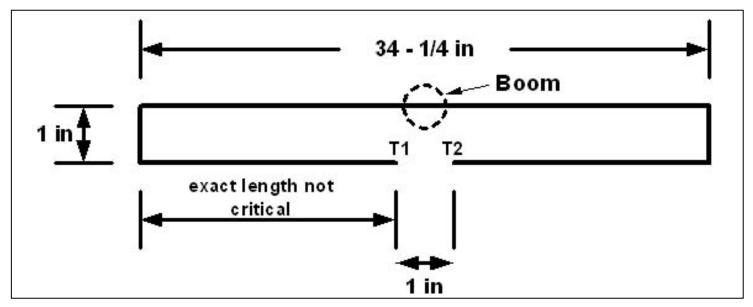


Fig 2 – Folded-Dipole Construction used for the Driven-Element

#### Seismometer Ant from Pg 5

glue on each side of the reflector where it passes through the boom.

At 18.5 cm (7.25 inch) from the reflector, now drill a hole for the driven-element. Center the total length of wire in the boom, and then bend it to the measurements shown in Figure 2. Bend the ends at T1 and T2 into loops or eyelets to accept a #6 stainless bolt to later attach the ends of the balun to connect to the driven-element. Once this is done, again center the driven-element on the boom, and secure it as you did with the reflector wire.

Moving on the Director #1, at 18.5 cm (7.25 inch) from the driven-element, drill a hole for Dir #1, insert the element, and secure it.

Continue to drill holes and secure element wires for the rest of the director elements as show below:

Dir #2 - 18.3 cm ( 7-3/16 inch) from Dir #1

Dir #3 - 18.2 cm ( 7-1/8 inch) from Dir #2

Dir #4 - 18.1 cm (7-1/8 inch) from Dir #3

Dir #5 - 18.0 cm (7-1/16 inch) from Dir #4

Dir #6 - 17.9 cm (7.0 inch) from Dir #5

Dir #7 – 17.9 cm (7.0 inch) from Dir #6

Dir #8 - 17.9 cm (7.0 inch) from Dir #7

Dir #9 - 17.9 cm (7.0 inch) from Dir #8

#### You Need a 4:1 Impedance Balun

The impedance of a simple folded-dipole is about 150 ohms, as compared to 75 ohms for a simple dipole. In order to match the antenna impedance to 50 ohm coax feedline, you need to use a 4:1 balun as shown in Fig 3.

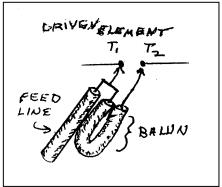


Fig 3 – The 4:1 Balun at end of Feed Line

Since most seismometers are located between 161 and 166 MHz, I used 164 MHz as the center frequency for the balun. Cut a piece of coax to 91.5 cm (36.0 inch) to be used as a ½-wavelength for the balun. Connect and solder all of the coax outer-shield together. Solder it to the rest of the feedline as shown in Fig 3, put some solder lugs on the ends, and attach it to the loops on the driven-element at T1 and T2 with #6 stainless screws. Tape the balun to the boom.

Good Luck!

## SEPTEMBER 20th SPECIAL 7:00 EVENING EVENT



# Attention Members and Friends!!!

This year is the OCARC's 75<sup>th</sup> anniversary and we are planning a special event celebration at the September general meeting.

There will be chatting, dissertations, exhibits and FOOD for everybody, so mark your calendars to make sure that you don't miss this event.

All present members, and past members are invited to share an evening of nostalgia, friendship and fun.

#### DO NOT MISS THIS MEMORABLE OCCASION!!!



## Heathkit of the Month The HD-1424 Active Antenna

by Bob Eckweiler, AF6C

An active antenna is a handy addition to the shack if you have a second receiver that you use as a monitor, or if you enjoy doing some short-wave listening. This is especially true if you only have one antenna and must switch it to the spare receiver, or worse unplug the antenna and move it to the other radio. When you need to fire up the rig in a hurry usually the antenna is connected to the wrong device. Things gets worse if you transmit before you find the antenna is disconnected! Also, if you restore communications receivers, an active antenna can be a really handy tool.



#### The Active Antenna:

So what is an active antenna? It is a short vertical whip, much like one on a portable radio that is directly connected to a powered amplifier (hence the term active). The output of the antenna is a 50  $\Omega$  connector that connects to the receiver via a short length of coax.

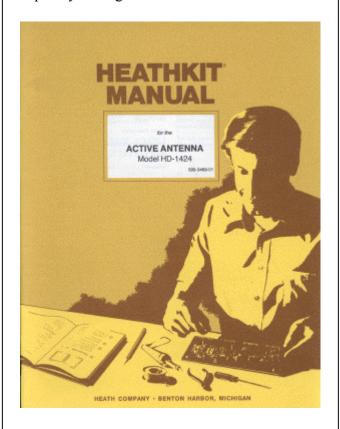
From antenna theory we know that a short vertical has a very low radiation resistance and is highly capacitive. Since its radiation resistance is very low, any series resistance or ground loss severely deteriorates the antenna efficiency. The active antenna provides electronics right at the base of the antenna that is designed to efficiently match the very low impedance of the antenna and amplify signals to the point where they are at a reasonable level. The signal is then matched to a 50 ohm load and sent via standard  $50\Omega$  coax to the receiver. The active antenna is a receive only antenna. transmitting into it would cause damage and probably smoke!

#### The HD-1424(A):

The Heathkit HD-1424 Active Antenna was first sold in 1985. It came in a brown cabinet with black screw heads and white silkscreening. The word Heathkit on the front was in red. This scheme was in line with much of the ham gear of that day such as the HW-9 QRP radio. In 1989 a newer HD-1424A replaced the original model. It appears to be identical except for a new cabinet. In a service note Heath wrote: The communications products are changing from a brown to a black/gray color scheme. The Heath logo on the new scheme was in pale yellow instead of red. Little ham equipment was manufactured with the new colors because Heath was starting to get out of the kit business. In early 1992 it offered its last non-educational kit. The HD-1424 Active Antenna cost \$49.95 in early 1987. In the Winter 1990 Catalog the 'A' model sold for \$59.95.

Electronically, the HD-1424 contains two cascaded FET source followers to increase the low impedance signal from the attached 24-inch collapsible whip

antenna. The input of the first source follower is tuned with a simple LC circuit. Inductors are switched in to cover 300 KHz to 30 MHz in five bands. Besides the TUNING and BAND knobs on the front panel, there is also a GAIN control that adjusts the signal level between the second source follower and an output amplifier that drives the  $50\Omega$  output to the receiver's antenna input. An OFF-ON slide switch applies power and switches the active antenna into the circuit. When off, the attached vertical whip and external antenna connector are directly connected to the output to the receiver. An LED power indicator is also on the front panel. Heath's design is well laid-out and the circuit remains stable independently of the gain and frequency settings.



The HD-1424 can also be used as a receiver preamplifier with a regular antenna. With the tuned circuit it helps eliminate images in older single conversion receivers, such as an old HQ-129X that used to haunt the shack. It also gives older receivers better sensitivity, especially on

the higher frequencies where it is most needed.

Power for the HD-1424 is supplied by an internal 9-volt transistor battery (NEDA #1604). An unconventional mini-phone jack on the rear allows external power to be ap-plied (6 - 14 VDC @ 45 ma). Using a mini-phone plug for the power can easily result in a short when inserting the plug into the HD-1424 or when unplugged and left on a clut-tered workbench. Why Heath chose this type plug for power is a mystery. Heath sold the PS-2350 separate wall-wart battery eliminator for \$7.95.

HD-1424 Specifications (from the Manual).

Frequency Range: 300KHz to 30 MHz.

Antenna Provision: Collapsible 24-inch (sup-

plied), or external 50  $\Omega$ .

Power Rqmts:9-volt alkaline battery or external 6 to 14 volt (45 mA) source. Model PS-2350 power cube recommended.

Dimensions: 2-1/4"H x 5-1/8"W x 5"D.

Weight: 1.4 lbs.

#### **Performance:**

To give some idea of the performance one can expect with the HD-1424 Active Antenna my R-2000 receiver was tuned to commercial AM station, KNX, during daylight hours. With the active antenna turned off so the receiver is just using the supplied 24" whip, KNX was audible with a lot of noise and no deflection of the S-Meter. When the HD-1424 is turned ON the signal immediately becomes noise free and the S-meter indicates S9 + 40 dB. This is with the GAIN set at half scale and the BAND and TUNING peaked for the receive frequency. In a similar test, WWV on 20 MHz showed an increase from S0 to S9 + 10 dB with an impressive decrease in noise.

An active antenna works well on the work-bench too. It is easy to take out to the garage when you are tuning up an old receiver, or pack up and take along when traveling. SWL'ers who live in areas that limit antennas can still get decent reception without an outdoor antenna.

#### **SUMMARY:**

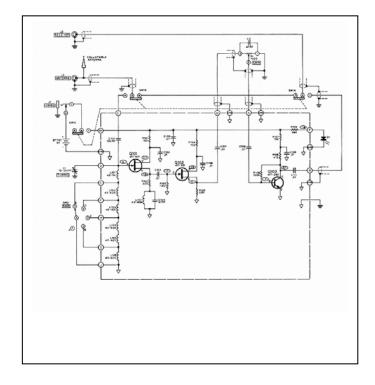
While the Heathkit HD-1424A is no longer being manufactured, other models are available from sources such as MFJ and RF Systems. You can still find The HD-1424/A on eBay, though they are one of the more cherished kits and usually command a good price. If you'd like to know more about this Heathkit you can view the Manual and Illustration booklet here:

http://www.pestingers.net/PDFs/Radio/HD1424 manual.pdf

http://www.pestingers.net/PDFs/Radio/HD1424 Illus.pdf

The HD-1424 is one Heathkit that doesn't sit in the closet until needed. It is in use on almost a daily basis with my R-2000, 51J4 and SB-303 auxiliary communications and ham receivers.

#### SCHEMATIC OF THE **HEATHKIT®** MODEL HD-1424 **ACTIVE ANTENNA** NOTES: All resistors are rated at 1/4-watt and have a 5% tolerance uni rwise noted. Resistor values are in ohms (k - 1.000.000) Capacitor values are in µF (MICROFARADS) unless off noted (pF = PICOFARADS). This symbol indicates a connection to the circuit board. This symbol indicates chassis ground. This symbol indicates circuit board ground. This symbol indicates a DC voltage taken with a high-input nce voltmeter from the point indicated to cha ground (voltages are ± 20%). Refer to the "X-Ray View" for the physical locations of parts on Switch SW1 is shown in the OFF position.





#### A HISTORY OF THE ORANGE COUNTY **AMATEUR RADIO CLUB - Part 5**

by Bob - WB6IXN, Club Historian

#### \*\*\*A NEW ERA\*\*\*

In 1959, Ken Kesek, W6BVI, was elected president, with Roy Morris, K6IQ, as vice president, and the Club began meeting in the Santa Ana Register Building on Grand Ave., Santa Ana.

Earl Griffin, W6ZE, and Mildred Griffin, W6PJU, were members of the Club in the '50s. Mildred also worked for Roy Maxson, W6DEY, at the FCC. This, plus their association with amateur radio and the Club led to a lasting friendship for the three. Earl previously held the call W6KFI. He worked for the Santa Ana Water Works. Earl died from a heart attack in 1956. Three years later, Roy & Mildred were married. The Club, under Ted Glick's urging, moved to have Earl's W6ZE, assigned to the OCARC. Roy Maxson, who returned from an FCC assignment in Alexandria, VA., in 1960, was instrumental in acquiring the call, W6ZE, for us. At the Feb. 18, 1959 meeting, Roy Morris, K6IQ, 1st custodian of W6ZE, announced that the call was officially ours!

In 1960, C.L. Edwards, K6TXS, was elected president; vice president Roy Morris, IQ; secretary Ted Glick, K6LJA; treasurer Frank Clements, GZI; activities chmn. John Roberts, TDC; publicity chmn. Frank Gelinas, AFM; TVI chmn. Roy Maxson, DEY; member-at-large Shelley Trotter, BAM.

#### OCARC Incorporates

THIS BOARD BECAME CHARTER MEMBERS OF OCARC, INC., for this was the year of incorporation! In 1960, a local lawyer, Bob Neeland, helped Ted Glick and other Club members, incorporate the Club. The 1st constitution of the Club was written by Ted Glick, Roy Morris, Ken Kesel, and lawyer Neeland. Other charter members of the Club were:

John Adkins, K6LEM LeRoy Sparks, W6SYC Tom Jones, WA6KRW Russ Pistone, WA6JDM Louis White, W6WLY

Steve Cullings, WA6CFA Joe Gillmaker, W6HGU Lee Jones, WA6BAE Ted Wall, WV6ARU John R. Martin, K6MY Mildred Maxson, W6PJU R. L. Fossett, W6PTA

Horace Bates, K6EAB Sam Reed, WA6OMR R. F. Krist, W6KTE(?) Reuvon Baskin Tom Marble, K6EEL Jack Farrington, W6DGF Bill Hart, W6QAT Howard Weed, K6KLB Fred Washburn, WA6FJJ Les Pollard, KV6GVF

Jon Westfield, W6TEL Al Spencer, K6IL Charles Hurley, W6YGE Jim Gravage, W6VMG Jim Ramsey, K6BGX Ethel Cook, WA6LZW Al Robinson, W6PM Dave Whitmer, WA6IYF Charles Shown, WA6ISN Hoss Bullock, K6AOU

The above were mentioned on the papers of incorporation dated Aug. 4, 1960.

#### First ARRL Convention in OC

In 1961, Roy Morris, K6IQ, became president. Also in the spring of 1961, the ARRL held a Board meeting at the Disneyland Hotel. Here the plans were approved to hold the 1962 ARRL SW Division Convention at Disneyland Hotel. A first for Orange County!

In 1962, Ted Glick, K6LJA, was elected president. At this time, the Fullerton Club, the Newport Club, and the OCARC banded together to sponsor the ARRL Southwestern Division Convention at Disneyland. Ted Glick was the general chairman. There were over 10,000 people in attendance. And each club netted \$3,000 from the proceeds of the Convention! (At this time, Ted Glick was the oldest dues-paying member of the Club since its reformation in 1958).

In 1963, Max, W6DEY, began proceedings to create our own ARRL Section; the Orange Section. In 1964, Alex Alexander, W6WRJ/W6RE was elected presi-A highlight of the 1964 meetings occurred when, during a laser demonstration, the laser beam missed the target and burned a hole in a Register blackboard!

#### Birth of Orange Section

In 1965, Roland Miller, K6KTX, was elected president.(now a Silent Key) In January, we changed our meeting location to the Lincoln Savings & Loan Bldg. at 17th & Bristol in Santa Ana. And on March 1, 1965, the hard work of Max, DEY, and others paid off!...the creation of the Orange Section is announced! A meeting of the Orange County Council of Amateur Radio Organizations was held at Ted Glicks's home in Santa Ana, where Max, DEY, is named the first SCM for the Orange Section, thus ending any further connections with the San Diego Section.

(to be continued next month ...Bob Evans, WB6IXN, Club Historian.)

## OCARC General Meeting Minutes

2008-06-20

The OCARC March General Meeting was held at the Red Cross complex in Santa Ana at 7PM on Friday evening, June 20th. There were a total of 31 members and visitors present. A quorum was present with all of the club directors attending, except Kristin-K6PEQ, Dan-N6PEQ, and Hank-W6HTW.

#### PROGRAM:

The OCARC had a great program presented by speakers J Howard Brown-KG6GI and Brian Roode-NJ6N, who gave a talk on:

#### "D-STAR Digital Communications"



Fig 1 – Speaker, Howard-KG6GI (center), and co-presenter, Brian Roode-NJ6N (in dark shirt), explained the capabilities and benefits of D-STAR Digital Communications.

Howard-KG6GI explained that D-STAR technology is an "open standard" although ICOM is the primary supplier of hardware. Many software products are becoming available from nuerous companies and individuals

- There are currently 414 D-STAR repeaters world-wide.
- There are 2,800 current users of the D-STAR technology

- The hi-speed data rate (1.2 GHz band) provides a data throughput of 128Kbps
- For more info see DSTARusers.org

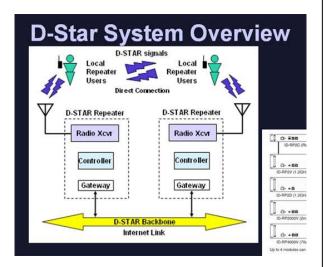


Fig 2 - Here's a diagram that represents how two D-STAR repeater systems are connected to the "D-STAR backbone" over the Internet.

A copy of the "D-STAR System D-mystified" presentation (in Power Point Format) is located on the OCARC WEB site, <a href="www.W6ZE.org">www.W6ZE.org</a>, in the HAM RELATED SITES page (the link is on the left-hand side of our home page).

Willie-N8WP presented both co-speakers with an OCARC coffe mug.

#### **GOOD OF CLUB:**

- Willie N8WP reminded everyone that they are invited to Field Day that will be held next week end. Set-up begins at 11 AM on Friday.
- Willie N8WP previewed OCARC "custom call" coffee mugs that he and Cheryl-KG6KTT would sell to the club.

Submitted by: Ken Konechy W6HHC OCARC Secretary

#### OCARC

## Board Meeting Minutes 2008-07-05

The OCARC Board meeting was held at the JagerHaus Restaurant in Anaheim at 8:15AM on Saturday, 2008-07-05. There were a total of 11 members and visitors attending. There was a quorum of directors present, with only the following officers absent: Rich-KE6WWK, Hank-W6HTW, Chris-W6KFW, and Bob-AF6C.

#### **DIRECTOR REPORTS:**

- **Vice President -** Nicholas AF6CF reported that the following programs are planned:
  - July is on the SuperStation
  - August is Art Goddard
  - September is OCARC Club Reunion
  - October is OCARC Auction
  - November is Clipperton Island
- Secretary Ken-W6HHC reported that the PO Box contained two members joining: Charmaine - KF6YOL (rejoining) and John – AD6NM
- Activities Kristin K6PEQ and Dan N6PEQ reported that the club potluck would be planned for cooler weather.

#### **NEW BIZ:**

#### • "The Prez" May Leave Town

President, Willie N8WP, announced that there was 98% probability that he would be taking a new job near Boston, starting around Aug 1.

#### OLD BIZ:

- RF NewsLetter "Rotating" Editors
  - July is Ken W6HHC
  - Aug is Loran KD6LRD
  - Sept is Paul W6GMU
  - October is Nicholas AF6CF

#### • Field Day 2008

Willie-N8WP reported that everyone seemed to have fun and a good time at Field Day

- Over 3,200 QSOs (see page 4 of RF)
- Larry-K6LDC has agreed to store the clubs two aluminum towers and bases
- The club generator will be stored at QTH of Chris W6KFW
- Access to the Los Alamitos JFTB for FD next year may be a problem if Willie leaves. Paul W6GMU said he worked on the base for a time and will try to take over for Willie at OES on the base.

#### OC Fair

- Kristin K6PEQ said the OCARC staffing is still needed for the Sunday, July 13, booth duty at the Ham Radio booth.
- Staffing was full for the Wednesday club date at the booth.

#### OCARC Coffee Mugs

With the possibility of Willie leaving Orange County, Willie assured us that he could still take orders and ship individual mugs from Boston.

 The board suggested that the club immediately order 10 mugs: three with calls of future speakers and 7 more with out calls.

#### • Ham Radio Camping Trip

The camping trip planning for Santa Barbara beaches in August or September needs to be taken over by someone else now that Willi-N8WP is leaving.

#### **GOOD OF THE CLUB:**

 Cheryl-KG6KTT displayed her Embroidered Hat with Call Letters sewn on. After they move you can still order via www.CleverEmbroidery.com

Submitted by: Ken Konechy W6HHC Secretary

## Please support the companies who support OCARC!

Make sure to thank them for their support of the OCARC when you order from them, or when you see them at a convention!



























