CROSSTALK

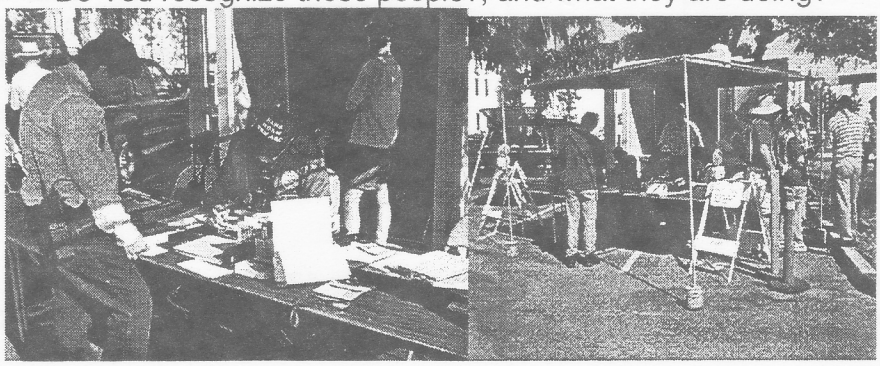
News Bulletin of the TRW Amateur Radio Club

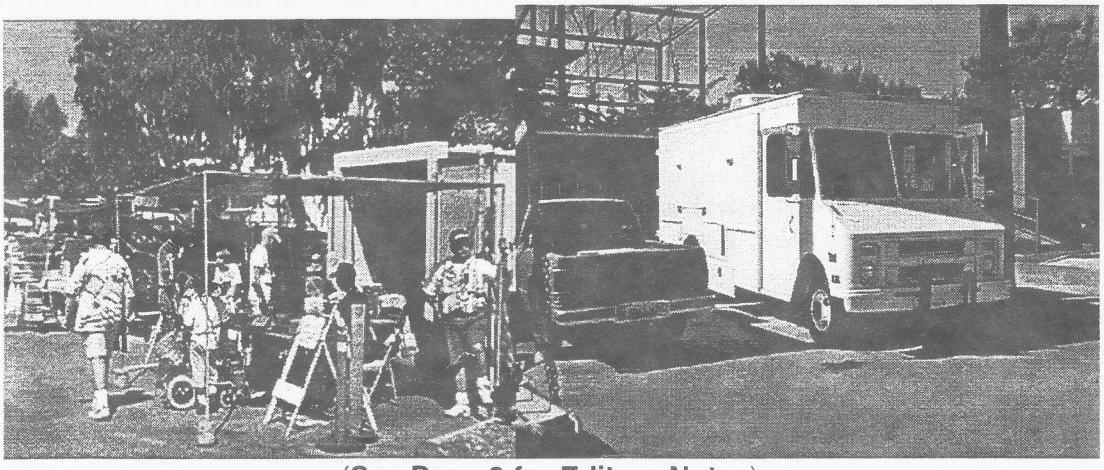
Volume 96 Number 10 October 1996

PICTURES PICTURES PICTURES!!!

Thanks to the latest Club acquisition, our new Digital Camera, will greatly enhance the ability to publish photos, check out the following photos of various club activities.....

Do You recognize these people?, and what they are doing?





(See Page 3 for Editors Notes)

TRWARC Monthly Calendar of Events

October 1996:

Tuesday, October 1	5:30 pm	**Executive Board Meeting** O1/1210 (All Club Members are invited)
Tuesday, October 8	**12:00 noon**	**Club Meeting** **YES it really is at Polliwog Park**
Friday, October 18	12:00 noon	**Technical Chairman's Meeting** Building S Hamshack
Tuesday, October 22	12:00 noon	**Emergency Communications Team Meeting** R3 Emergency Operations Center
Saturday, October 26	7:00 am	**TRW/ARC Swap Meet** Marine and Aviation (Northeast Corner)
Saturday, October 26	12:00 noon	**T-Hunt** Swap Meet Parking Lot - 144.72 MHz

Reoccurring Events:

Every Monday Night (Except the 1st & Holidays)	7:30 pm	**Disaster Communication Systems (DCS) Net** DCS Members: Check in on 2 Meter Repeater
Every Wednesday	12:00 noon	**ECT Net on 2 meter Repeater**
Every Thursday Night	6:30 pm	**TRW Amateur Radio Club Net** The Bob and ? Show - Check In on 2 Meter Repeater
Every Friday Morning	7:30 am	**TRW Amateur Radio Club Breakfast** Building S Cafeteria - Everyone is invited Talk-in on 2 Meters

Other Events

Computer Marketplace (Computer Shows) ***Hours: 10:00 to 17:00***
Pomona October 5 & 6, 26 & 27 Fairplex Expo Complex (Gate 14) Admission $8.00, Parking $5.00
Reseda October 19th Sherman Square Entertainment Center, 18430 Sherman Wy @ Canby St.
Buena Park October 20th Sequoia Conference Center, 7530 Orangethrope, @ Beach Bl.

Other Ham Swap meets:
Inland Empire ARC - 2nd Sat. ea. mo. @ A.B. Miller High School, Walnut & Olenander in **Fontana** - Talk-in 145.480 (-600 pl=77.0hz)
CAMRA - 3rd Sat. ea. mo. @ DeVry Institute, 901 Corporate Center Dr. **Pomona** - Talk-in 146.175 (+600)
El Cajon ARC - 1st Sat. ea. mo. @ Santee Drive-in Theater, Woodside Ave. @ Hwy 67 in **Santee**

Editors Notes

- **Membership:** The club is aware of this serious on going problem and is currently working on remedy for this, your patience is appreciated.
- **The Annual Banquet** is rapidly approaching, see the application in this issue.
- **Work Parties:** There are many projects in the works as you read this issue, mainly the Communications Van, and the HF rebuild on Bldg. S. Your participation will greatly enhance the completion of these and other projects. If you're interested in helping, contact Rich Sauer N6CIZ x 35869 for help with the Van, or contact Dave Nelson AB6DU x39775 for the with the HF projects.
- **2 Meter Repeater Users:** Please remember to use as little transmitter power as necessary to access the Repeater, this will help eliminate interfering with the San Diego Repeater.
- **Jan Parker KD6AKD**, recently sent me copies of two letters that are ***in this issue***, one is from Congresswoman Jane Harman acknowledging correspondence she has been receiving regarding WRC-97 (spectrum reallocation), the other letter is to the FCC from Jane expressing her concerns on this subject.

Classifieds

For Sale:

Vertical Arrays - Part 2

by Bill Shanney, KJ6GR

Last month I showed that there was no advantage of a 4 element vertical array over a dipole up 85 feet on 40 meters. This month I'll do the same comparison on 80 meters. The configuration of the vertical array is shown in Figure 1. I kept the spacing the same as the 40 meter array to allow for dual band operation. A different feed arrangement is required to get the best performance with $\lambda/8$ spacing. The -135° phase shifts are more difficult to achieve but several design techniques have been shown to work[1].

At 85 feet the 40 meter dipole was up 5/8 wavelength, on 80 meters the dipole is up only a little over $\lambda/4$ and is a real sky-warmer as shown in Figure 2. This is due to the effect of ground reflections which cancel very low incidence angle waves and reinforce high angle ones. A vertical antenna can provide a significant low angle performance advantage over a low dipole.

The performance of our 4 element vertical array elevated 35 feet is shown in Figure 3. The performance is very similar to the 40 meter design. For reference I plotted the performance on the dipole plot (Figure 3, dashed curve). At 15° elevation angle the gain is 3dB better and at 10° the gain is 4dB greater than the dipole. This can be very significant over long multi-skip paths since an average of 5dB is lost per skip. Even though the gain of this array is not great, the good low angle performance can result in several less skips for distant DX contacts.

In summary, a 4 element vertical array provides a significant low angle performance benefit on 80 but little if any on 40 meters. Keep in mind that most contacts on 80 will be local. A vertical has poor high angle performance so a dipole is a better first antenna. The addition of the vertical array will provide good DX performance on quiet winter nights.

Next month I'll discuss array feed techniques and design.

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[1] Devoldere, John, ON4UN, Antennas and Techniques for Low Band DXing, ARRL, 1994

Figure 1. 80 meter Elevated Vertical Array

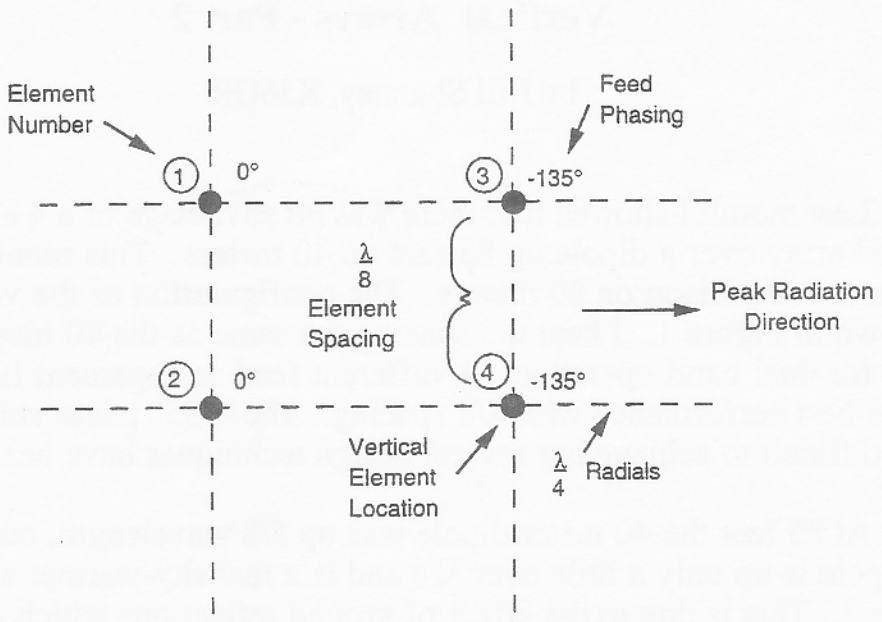


Figure 3. Performance of a 80 meter dipole up 85 feet

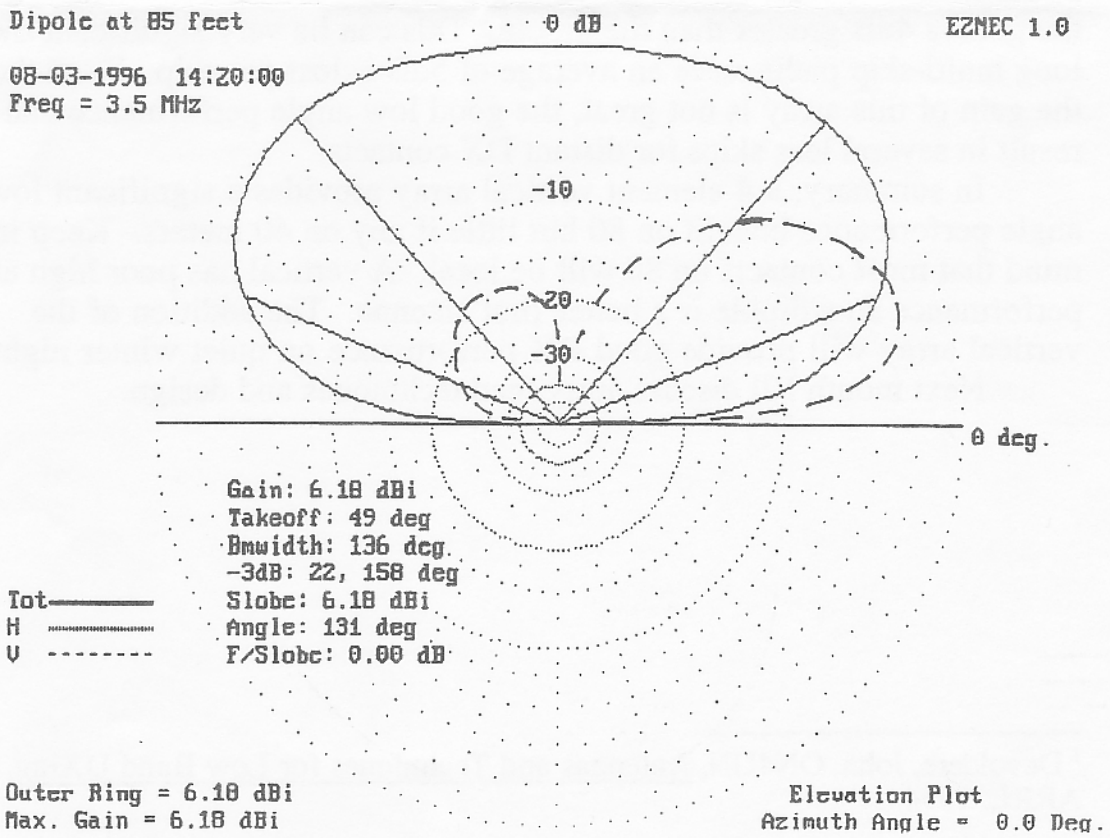
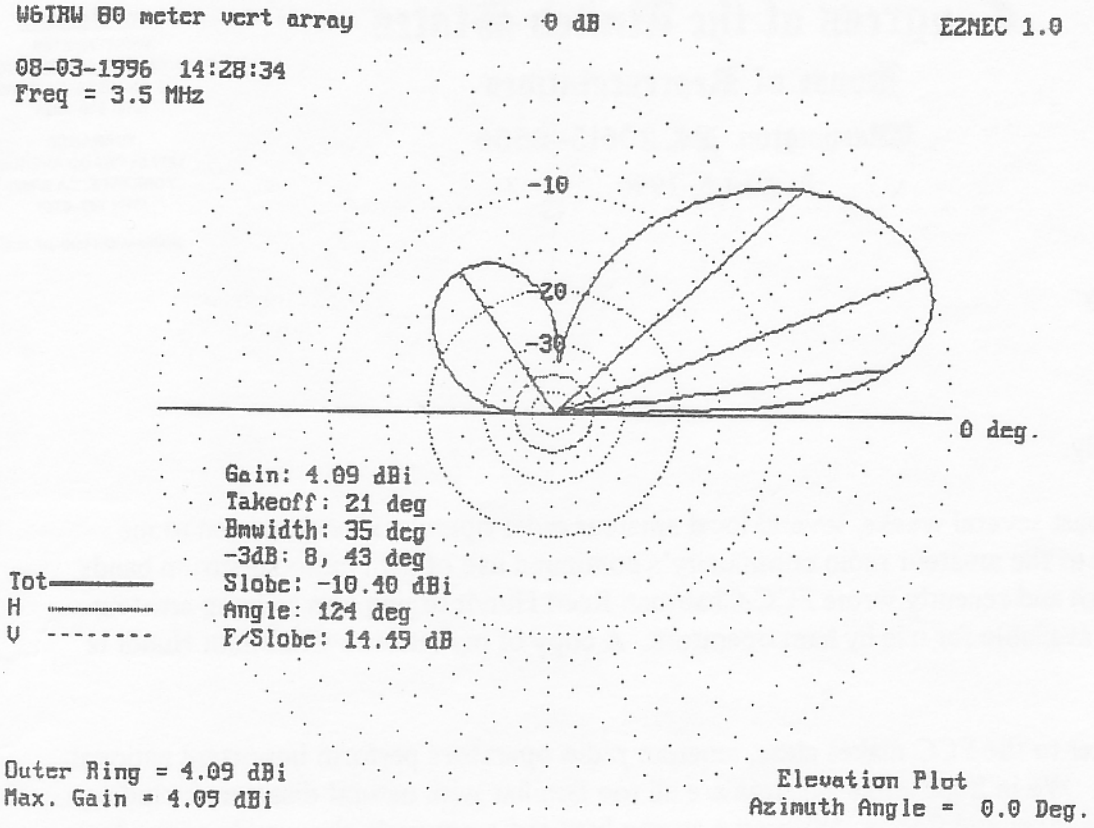
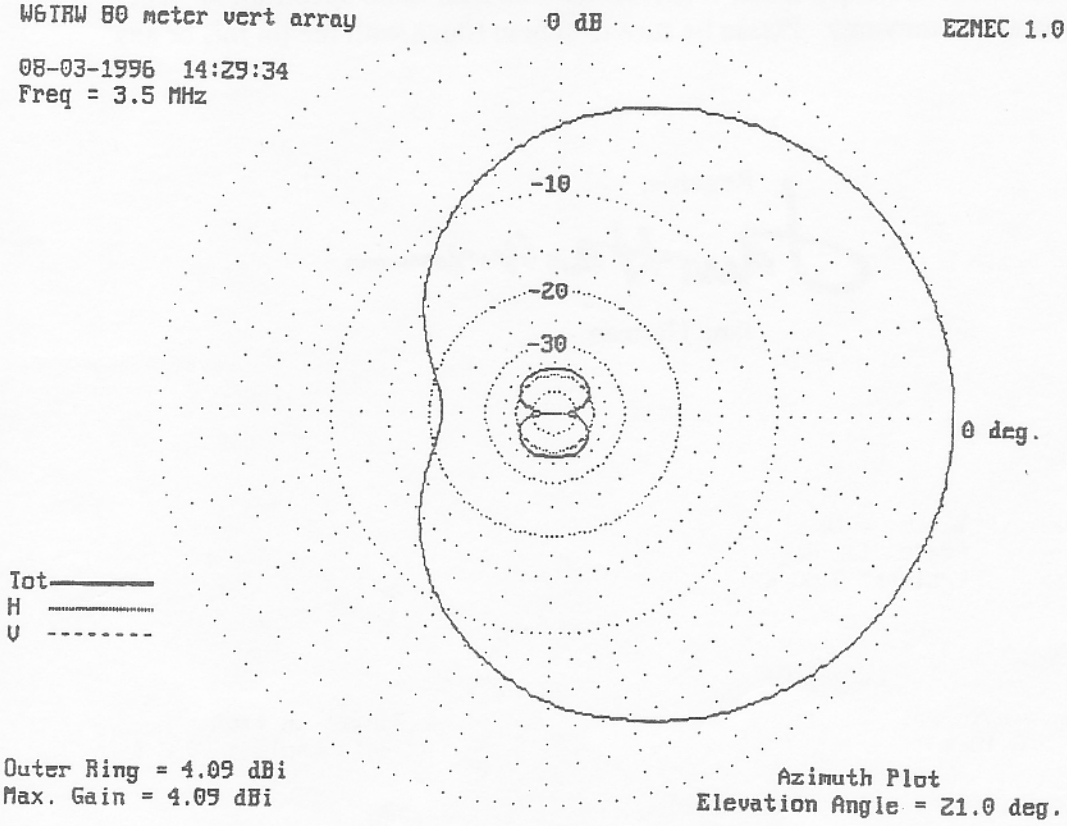


Figure 2. Performance of 80 meter 4 element vertical array up 35 feet





JANE HARMAN
36TH DISTRICT, CALIFORNIA

COMMITTEES:
NATIONAL SECURITY
MERCHANT MARINE
PERSONNEL
RESEARCH AND DEVELOPMENT
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Congress of the United States
House of Representatives
Washington, DC 20515–0536

August 5, 1996

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JHARMAN@HR.HOUSE.GOV

The Parker Family:

Dear Parker Family:

Over the past several weeks, several local amateur radio operators have written to me regarding a threat to the amateur radio community's continued use of ham radio spectrum bands. I share this concern and recently wrote FCC Chairman Reed Hundt urging him to keep amateur radio frequencies available for use by ham operators. A copy of my letter to Chairman Hundt is attached.

As my letter to the FCC makes clear, amateur radio operators perform important national and local services. We in Southern California are all too familiar with natural disasters including recent earthquakes, fires and floods. Without a strong ham radio network, thousands of residents in a disaster area could be cut off from the outside world when traditional communication lines break down.

Because of amateur radio's importance, it is essential that ham radio spectrum be kept open for use by the amateur community. Please be sure to stay in touch with me on this or any other important issue.

Regards,

Jane Harman

Jane Harman

JH:rms

JANE HARMAN
36TH DISTRICT, CALIFORNIA

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SITE: www.house.gov/harman/

July 30, 1996

The Honorable Reed Hundt
Chairman, Federal Communications Commission
1919 M Street NW
Washington, DC 20554

Dear Reed:

I am writing to express my concern over proposals to reallocate key amateur radio frequency bands. I urge you to take appropriate action to preserve the ability of ham radio operators to continue their many important functions.

I know you share my view that amateur radio operators perform great national and local service. During times of disaster, when traditional lines of communication break down, ham radio communications are often the only way to reach residents in a particular disaster area. For example, immediately following the 1994 Northridge Earthquake, ham radio operators backed up local police and fire communications and gave local residents a link to friends and family outside Southern California.

As the FCC considers the many potential uses of our radio spectrum, I request that you do everything possible to keep ham radio frequencies available for use by the amateur radio community.

My thanks for your support for our country's amateur radio operators.

Regards,

Jane

Jane Harman