



# CROSSTALK

News Bulletin of the TRW Amateur Radio Club



Volume 96 Number 1

November/December, 1995 / January, 1996

## New Officers Elected for 1996

### KD6WYQ Elected President by One Vote

In one of the closest elections in the history of the TRW Amateur Radio Club, Bob Briggs, KD6WYQ, edged out Ray Enriquez, KD6IGI, for the Presidency of the club. The margin of victory was one slim vote.

Also elected were Pat Anderson, KB6YPI, Vice President, Jan Parker, KD6AKD, Treasurer, and Nina Whiddon, KN6FL, Secretary.

While Vice President, Secretary and Treasurer candidates ran unopposed, the race for club President involved three contenders. In addition to Briggs and Enriquez, Bryan DeAro, KN6OW, was a close third in the voting for President.

Throughout the weeks that voting took place, everyone was kept up to date on the vote count through the good-natured bantering of two of the candidates on the club's weekly net, "The Bob and Ray Show." But the outcome was in doubt until the last day of voting. That's when the final ballot put WYQ over the top, according to sources at W6TRW Election Central where ballots were counted.

At the December club meeting where the results were announced, Bob seemed stunned by the news. "One vote?" he said. "I'm glad I voted for myself!" he joshed.

Bob took the floor and thanked the previous administration, President Frank Cartier, WA6RAY, Vice President Ray Enriquez, KD6IGI, Treasurer Young Ryu, AB6UP, and Secretary Bill Shanney, KJ6GR, for the hard work and great job they did over the past year. "I've got some big shoes to fill," said Bob.

Thanks to the officers, old and new, and thanks to everyone who took the time out to vote. You made the 1996 election a memorable one!

## Crosstalk is Published!

### Club Members are Stunned to Receive a Newsletter

You are holding the long-awaited "next edition" of *Crosstalk* in your hot little hands. This edition is VERY late in being published. Due to a high workload, your humble editor has been unable to write, type, edit, print and deliver the newsletter for several months. I'd like to take this opportunity to apologize to the membership who have been very patient. Hopefully, we'll get this sucker out a BIT more often! (de N6CIZ)

**Renew your club membership NOW**  
**Use the Form in this Newsletter!!!**

**Calendar of Events:**  
**See Page 2**

# W6TRW Calendar

## JANUARY, 1996:

Tuesday, January 9	5:30 PM	<b>Executive Board Meeting</b> E2/1200 (All Club Members are Invited)
Tuesday, January 9	12:00 Noon	<b>Emergency Communications Team Meeting</b> R3 Emergency Operations Center
Tuesday, January 16	5:30 PM	<b>Club Meeting</b> Petrelli's. Aviation Blvd. and 2nd St. (NorthEast Corner)
Friday, January 19	12:00 Noon	<b>Technical Chairman's Meeting</b> Building S Hamshack
Sat & Sun, January 20-21	11:00 AM until 8:00 PM	<b>ARRL VHF Sweepstakes</b> Club Competition - Send Your Logs to Dave Lee, 75/1000
Tuesday, January 23	12:00 Noon	<b>Emergency Communications Team Meeting</b> R3 Emergency Operations Center
Saturday, January 27	7:00 AM	<b>TRW/ARC Swap Meet</b> Marine and Aviation (NorthEast Corner)
Saturday, January 27	12:00 Noon	<b>T-Hunt</b> Swap Meet Parking Lot - 144.72 MHz

## FEBRUARY, 1996:

Tuesday, February 6	5:30 PM	<b>Executive Board Meeting</b> E2/1200 (All Club Members are Invited)
Tuesday, February 13	12:00 Noon	<b>Emergency Communications Team Meeting</b> R3 Emergency Operations Center
Tuesday, February 13	5:30 PM	<b>Club Meeting</b> Petrelli's. Aviation Blvd. and 2nd St. (NorthEast Corner)
Friday, February 16	12:00 Noon	<b>Technical Chairman's Meeting</b> Building S Hamshack
Saturday, February 24	7:00 AM	<b>TRW/ARC Swapmeet</b> Marine and Aviation (NorthEast Corner)
Saturday, February 24	12:00 Noon	<b>T-Hunt</b> Swap Meet Parking Lot - 144.72 MHz
Tuesday, February 27	12:00 Noon	<b>Emergency Communications Team Meeting</b> R3 Emergency Operations Center

## REOCCURRING EVENTS:

Every Monday Night (Except the 1st & Holidays)	7:30 PM	<b>Disaster Communication System (DCS) Net</b> DCS Members: Check in on 2 Meter Repeater
Every Thursday Night	6:30 PM	<b>TRW Amateur Radio Club Net</b> The Bob and ? Show - Check in on 2 Meter Repeater
Every Friday Morning	7:30 AM	<b>TRW Amateur Radio Club Breakfast</b> Building S Cafeteria - Everyone is Invited - Talk-in on 2 Meters

## **JOHN BROWNING, W6SP, SK. WAS AMSAT BOARD CHAIRMAN**

### *From AMSAT and the ARRL Letter*

Former AMSAT chairman of the board John W. Browning, W6SP, of Rancho Palos Verdes, California, succumbed to kidney cancer January 3, 1996. He was 71. W6SP was elected Chairman of the Board of AMSAT in 1982 and led the organization during early Phase 3 satellite development. He was an ARRL life member, prominent in many California DX associations and an avid HF operator from Palo Alto and later Los Angeles.

Following his retirement from the Air Force in 1982, John worked as a consultant to aerospace firms such as COMSAT and Sundstrand under his own company, Altaspace. He was also active in the Armed Forces Communications Electronics Association (AFCEA), a trade group, where he was regional vice president and was a member of SCAPR, the Southern California Association of Professional Representatives.

A highly decorated veteran (Legion of Merit with one oak leaf cluster, Distinguished Flying Cross, Meritorious Service Medal, Air Medal with two oak leaf clusters, Air Force Commendation Medal with one oak leaf cluster and Purple Heart), John received the Distinguished Service Medal, the highest peacetime medal awarded in the US, when he retired as a Colonel in 1982.

Burial will be in Arlington National Cemetery January 16. The family invited donations in John's memory to the Torrance (California) Memorial Medical Center. John is survived by his wife, Myrnie, a daughter and a brother.

## **FCC PLAYING CATCH-UP BALL**

### *From the ARRL Letter*

The budget impasse is over for now, but FCC issuance of new ham radio licenses was further delayed this month by bad weather and a Monday holiday.

The FCC reopened Thursday, January 11, but closed Friday, January 12, as more snow hit Washington, DC. Monday, January 15, was a Federal holiday, Martin Luther King Day. While open on January 11, the FCC accepted electronic amateur license application files for processing from VECs, including more than 1800 records from ARRL/VEC.

The FCC was planning to expedite the application backlog, but needed to make some temporary software adjustments before granting licenses. It was expected to take several days after the January 15th holiday for the FCC to get back up to speed.

Applicants wanting to check on license application status may call ARRL at 860-594-0300, 8 AM to 5 PM EST. Call sign and license upgrade information also is available on Internet sites, including the University of Arkansas, Little Rock, WEB site at <http://www.uarl.edu/doc/hamualr/callsign.html>.

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### **FOR SALE:**

Tower: 51 foot crank-up Triasto. With rasing fixture, Ham-M Rotor, New J-bolts. In Lomita.  
On the ground and ready to be picked up. \$500.

Neal Hudson, N6NW (310)812-4660 - Work (310) 326-5735 - Home

# Loop Antennas - Part III: Beams

By Bill Shanney, KJ6GR

Loops are often used as elements of Yagi type beam antennas. The most popular are the two element quad at HF, multi-element quad or quagi at VHF/low and UHF, and the loop yagi at the higher UHF range.

## HF Quads

A two element quad has nearly as much gain as a conventional three element Yagi antenna. One might argue that if trap losses are considered, a two element quad has at least the same gain as a three element tri-bander. I'm being very careful here to avoid exact gain numbers since they are very design dependent. Quads have two features that make them very attractive: the bandwidth is wider than most conventional yagis and the turning radius is roughly half that of a yagi design.

It is helpful to understand a few design tradeoffs. The peak gain and maximum front-to-back ratio occur at different frequencies. The big advantage of a yagi design is interference rejection in an area like Southern California with its large population of hams. I always tune my quad for best front-to-back ratio (i.e. minimum gain to the rear). The gain loss is less than 0.6 dB which is not worth worrying about in my opinion. This is illustrated in Figure 1 for a 15 meter quad up 50 feet.

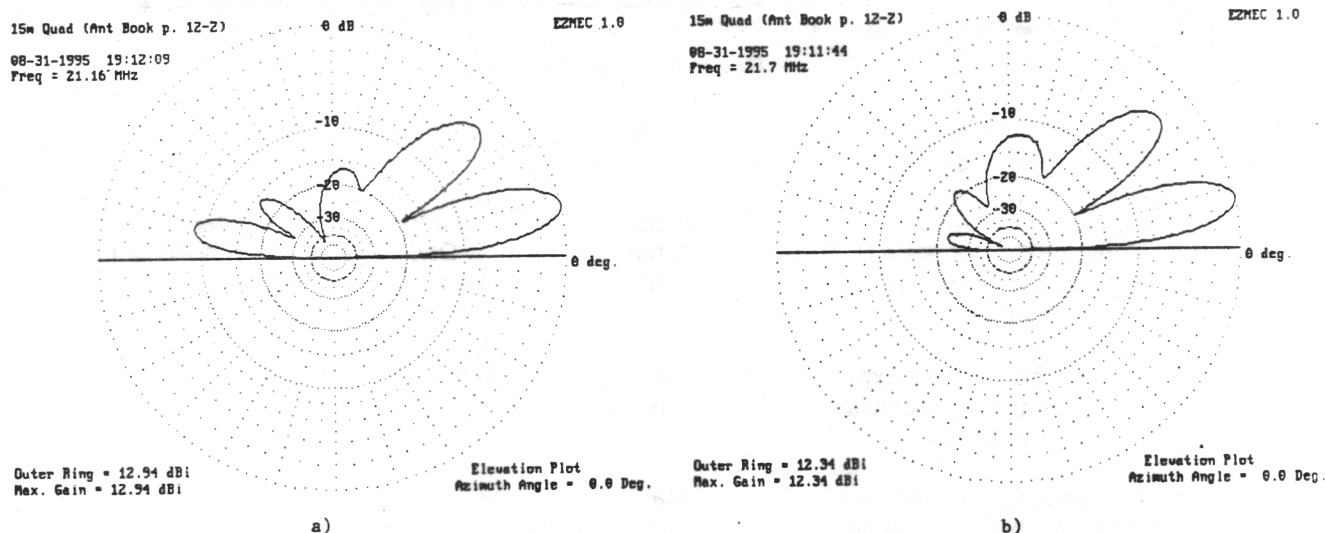


Figure 1: The gain of a quad at resonance is higher as shown in a) but the Front-to-Back ratio is greater at a higher frequency as shown in b).

(Continued on Next Page)

## Loop Antennas (...Continued from Previous Page)

The radiation resistance of a quad loop is in the 100 to 120 ohm range. A 2:1 matching transformer, such as the one described in Jerry Sevick's Transmission Line Transformers (ARRL) or Building and Using Baluns and Ununs (CQ) books (and sold commercially by Amidon Associates) or a quarter wave 75 ohm coax transformer, will provide a good match to 50 ohms.

Multiple quad loops are often put on a common frame. Several feed options are available for these multi-band antennas. First, each loop can be independently fed as described above. Or the loops can all be fed in parallel. A broadband 2:1 transformer must be used for this configuration since a quarter wave transformer has a narrow bandwidth.

Feed method one, when used with an external antenna switch, requires only one coax run to the shack. This minimizes the interaction between loops.

The interaction between loops in the second method is generally very small unless the resonant frequencies are multiples of one another. A common case is a tri-band quad for 14/21/28 MHz. The 14 MHz loop exhibits a second harmonic resonance when driven at 28 MHz. This causes the radiation pattern to broaden and the gain to be reduced slightly. The performance degradation is small, but the mechanical advantages are significant for this configuration.

HF quads are mechanically more complex than conventional yagis. I would suggest buying one of the fine commercial products from Cubex, Lighting Bolt, or Gem Quad if you are not mechanically inclined. It's hard to find the materials for the cost of one of these antennas. You neighbors will also appreciate their excellent structural design that does not wind up littering their yards every time the wind picks up.


### VHF Quads

These small antennas are much more forgiving as far as structural design is concerned. Commonly available materials such as PVC pipe are often used in their construction. Make sure the PVC you use is not lossy at RF frequencies by placing a piece in your microwave oven for a few minutes on medium power. If it heats up, it's lossy, if not, use it. I've successfully built many VHF antennas using PVC obtained at local building supply houses.

The performance advantages of a quad versus a yagi are less important at VHF since adding an extra element does not add that much boom length to the antenna. One advantage the quad has is its superior rejection of signals off the side of the antenna when compared to a yagi. This can be important in a densely populated area like Southern California. A second advantage is the width is one half of a comparable yagi. This will appeal to "T" hunters since vehicle overhang is an issue for side mounted antennas. Remember to feed the quad on one of the vertical sides for FM repeater or simplex and on the horizontal sides for weak signal CW or SSB operation.

### UHF Loop Yagis

Loop yagis are popular antennas in the high UHF bands (i.e. 1296 and 2300 MHz). They can be home built from ARRL Antenna Book designs or purchased from companies like Down East Microwave. I'd opt for the latter route since tolerances are tight at these high frequencies. These are a good choice for OSCAR Mode-L or -S operating.



Remember! Membership Dues are Due NOW for 1996  
Send in Your Membership Application Today!

## EBM NOTES

*The TRW Amateur Radio Club conducts its business at the monthly Executive Board Meeting. All club members are invited to attend the EBM on the first Tuesday of the month at 5:30 PM in E2/1200. Remember...your inputs to the Board determine the direction of the club.*

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## TRW ARC Executive Board Meeting Minutes - October, 1995

- The meeting was called to order by President Frank Cartier.
- Frank reported that the swap meet went well.
- Rich Sauer reported that the Crosstalk went to the printer and contains the Banquet reservation and 447 autopatch sign-up forms.
- Chris Wachs will speak at the 10/10/95 club meeting at Petrelli's on the 2 meter Internet connection.
- Bob Briggs said the ECT meeting turnout has improved. They have had good meetings to plan the new van. On Saturday, 9/30 the old van battery wiring was changed to correct some charging problems. A new van work party is being organized for Saturday, 10/14. An ECT training meeting is scheduled for this Friday in the Building S Shack.
- Pat Anderson reported that three CTCSS tone squelch boards for various radios will cost about \$150. This will help eliminate the QRM from the San Diego repeater.
- Rich and Frank have recruited nominees for next year's officers.

## TRW ARC Executive Board Meeting Minutes - November, 1995

- Rich Sauer reported that the swap meet went well and the banquet is all set. He passed around some photos of the new van work party.
- Bryan De Aro reported that the tower baseplate was drilled.
- Chris Wachs and Phil Bergeron inspected the beam, the clamps need to be replaced. Chris said that it would be moved to the building S roof shortly.
- Chris was approved to spend \$70 for Amsat Win Sat satellite tracking software. He wants to buy some other software but was not ready with a proposal so this will be discussed at the next EBM.
- Rich Sauer is very busy and is going to a every other month publication schedule for Crosstalk.
- Pat Anderson has been researching having a club "Home Page" on Internet, AOL, etc. for Swapmeet and other club news. He reported that the 447 autopatch will be reprogrammed soon.
- Bryan De Aro was approved to spend \$300 on ARRL instructional video tapes to use in his license classes.

**More Board Minutes on the Next Page...**



## TRW ARC Executive Board Meeting Minutes - December, 1995

- Young Ryu presented the Treasurers report. We will finish the year with a \$3K swap meet reserve and \$2K left in the treasury.
- Nina Whiddon is in the process of mailing out unclaimed club badges.
- Rich Sauer reported that the race for 1996 club president is too close to call.
- Crosstalk will be out soon with next year's membership application. Everyone should receive their copy before the holiday shutdown.
- The swap meet went well.
- The old ECT van needs a new starter battery.
- The new van has been painted. The springs need to be beefed up. One half of the plywood floor is installed, the walls will be done next. Greg Martens' father-in-law will do the carpentry for the cabinets.
- There will be an ECT exercise on 20 January at Space Park.
  - 1) Lost child
  - 2) Earthquake
- The banquet went well.
- \$200 was approved for door prizes for the December (Christmas) club meeting.
- Pat Anderson reported that the 447 autopatch has not been reset due to technical problems. He is still working on the club Internet home page and will consult with the new board before proceeding further.
- Chris Wachs reported that when the 2 meter repeater circuit breaker tripped last week, the backup battery didn't kick in. KE6QJM is helping him troubleshoot the system.
- Chris was approved to spend \$300 for software relating to our Internet gateway.
  - 4 copies of Telenet program for shack and 3 sys ops
  - Netscape
  - ProCom Internet Packet Driver
- Young Ryu was approved to spend \$300 for CD ROM/multimedia kit for shack computer. He will also purchase the previously approved printer.
- It was an interesting three years as secretary. I'm looking forward to the opportunity to step back for a while and help the club in some other capacity.

## TRW/ARC Autopatch Report

By Pat Anderson, KB6YPI

The TRW 447 repeater has been reset (thanks to a surge sent by So Cal Edison) and all of the requested autopatch numbers should have been entered. If you have requested auto dial slots and not recieved your new access codes, please contact Pat Anderson at x36874

MAKE SURE YOU PAY YOUR CLUB DUES ASAP. IF YOU ARE NOT ON THE CLUB ROSTER YOUR AUTODIAL NUMBERS WILL BE DELETED TO ALLOW ROOM FOR OTHER CLUB MEMBERS.