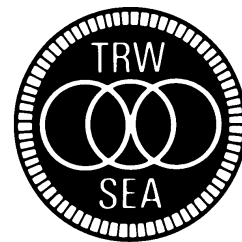




CROSSTALK

News Bulletin of the TRW Amateur Radio Club



Volume 97 Number 8

August 1997

Editor's Notes:

In this issue, I am publishing pictures given to me from Field Day '97. I am limited in the amount of pages that I may publish, therefore I have elected to leave out the application for the SW Division Convention in September. Please contact me if you need one, and I'll send one to you. As ECT Coordinator, I would like to thank all of you (you know who you are) who has helped out in ECT activities in the last few months, As I may not able to participate in every activity, I keep a running log on participation that others provide me with. We are still planning on having a drill session this summer, as time permits, I am currently working on this effort, stay tuned for more.

A Note from our Publicity Chairman Dave Nelson AB6DU

The ARC is using email to notify members of news items, meeting reminders, and other notifications. An email list for employees has been prepared but does not include home email addresses or email addresses of non-employees. If you would like to receive emails from the club at your home address, please send it to Dave Nelson, Publicity Chairperson, at davide.nelson@trw.com

Shuttle contact successful from Hamshack

07/10/97

This morning at about 0850, Bob Briggs, KD6WYQ, operating the W6TRW satellite station at bldg. S, successfully contacted the space shuttle, Columbia. According to Bob, signals were loud and clear, better than through a repeater. Congrats also to Wendy, KQ6CG who also contacted Columbia from the "S" Shack.



07/08/97 The first "noon time" Club meeting of the year at the Park

TRWARC Monthly Calendar of Events

| | | |
|------------------------------|------------|---|
| First Tuesday of each month | 5:30 pm | Executive Board Meeting (All Club Members are invited) |
| Second Tuesday of each month | 5:30 pm | Club Meeting Round Table Pizza, (Redondo Bch. & Hawthorne) |
| Second Tuesday of each month | 12:00 noon | Emergency Communications Team Meeting R3 Emergency Operations Center |
| Last Saturday of each month | 7:00 am | TRW/ARC Swap Meet Marine and Aviation (Northeast Corner) |
| After the Swapmeet | 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 Fair (previously The Computer Marketplace Computer Shows) **Hours: 10:00 to 17:00**

POMONA \$8 admission

Live Broadcasts: KFI-Jeff Levy "On Computers", KZLA, Y-107FM

August 9 & 10, 30 & 31 (Sat. & Sun.)

Fairplex Exposition Complex Exit Highway 10 at Fairplex Drive.

Go north to McKinley Avenue, turn right. Turn left on White Avenue to Gate 14.

RESEDA \$3 admission

August 23 & 24 (Sat. & Sun.)

Sherman Square Entertainment Center From the 101 Freeway take the Reseda offramp,

go north to Sherman Way and turn right. Go one block to Canby Street. 18430 Sherman Way.

BUENA PARK \$5 admission

September 14 (Sun.)

Sequoia Conference Center Take the Beach Blvd. exit off the 91 Freeway.

Go one block north to 7530 Orangethorpe.

All Shows Open to the Public 10:00 a.m. to 5:00 p.m.

Call for more information (408) 778-5200 or 800-800-5600 Fax# (408) 779-1374

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)

CMRA - 3rd Sat. ea. mo. @ DeVry Institute, 901 Corporate Center Dr. **Pomona** - Talk-in 146.175 (+600)

EI Cajon ARC - 1st Sat. ea. mo. @ Santee Drive-in Theater, Woodside Ave. @ Hwy 67 in **Santee**

Grounding on the "S" Roof

Dave Nelson, AB6DU

In the course of raising the tower and HF antennas on the roof of Building S at TRW, a ground system had to be included for safety reasons, to meet building codes, and for lightning protection. Since the roof was over 30 feet above ground level, you might be curious how we could establish a decent ground for a HF radio station. It was not difficult in the final implementation. Figure 1 shows the grounding plate used and the cable dress of the coax lines.

Actually, finding a decent ground on the roof of the building was not as difficult as you might imagine. Being an industrial purpose building, it was constructed with steel I beams, all tightly interconnected, and connected to the building ground point at the basement of the building. The roof included many air conditioning equipment of large size and because of their unsightly appearance, were surrounded by a 12 foot high windscreen to present a more pleasing appearance of the building. These features are common in industrial buildings and were used to our advantage for the antenna systems at W6TRW. I beams notwithstanding, readers may find some features of this system useful for their own shacks.



The windscreen is constructed using a steel I beam structure for the skeleton. Corrugated fiberglass sheeting is attached to this structure to complete the windscreen. The windscreen structure provides vertical I beams 12 feet apart with smaller reinforcing vertical I beam every 6 feet to attach the fiberglass. Several of these vertical beams were used to attach masts for the VHF, UHF, and OSCAR antennas, which also grounds the masts.

The tower was installed about 10 feet from the windscreen so a 0000 gauge cable was connected between the tower and a low point on an I beam for a tower ground, using a $\frac{3}{4}$ " diameter stainless steel bolt through the terminating crimp connection. It is the largest black wire visible in the figure and runs approximately the same routing as the (white, in the figure) conduit run.

Coax from the tower antennas were dressed overhead from the tower to the windscreen and dressed down an I beam to the location of the grounding plate shown in the figure. A $\frac{1}{4}$ " copper plate was used for the ground plate. Lightning protective discharge devices were installed on this plate, which also serves as a disconnect bulkhead near the tower base for maintenance purposes. The plate was cleaned before attaching, and the mating I beam also cleaned and filed as flat as practical. To mitigate dissimilar metal corrosion, a stainless steel sheet was used between them, and six large stainless steel bolts used to compress the joint. A sealing bead was applied at the edge to prevent any water intrusion at the bonding interface, and a coat of Rustoleum metal primer was applied over the remaining bare steel.

The copper plate was also bolted to the horizontal I beam at the windscreen base. The bare area on its right is populated by lightning protection devices for non-coax wire, such as the rotator cables, which are installed behind the panel to be out of the way and protected.

Grounding on the "S" Roof (cont.)

The figure shows the intended cable dress for the coax cables, with a couple cables waiting for final trimming and dressing once their antenna is pulled into final position. We are still completing the installation details of the R7 vertical, and some VHF/UHF antennas, and the final cable dress will follow this.

Is it effective? Well, pending a lightning strike for final verification, we did make resistance measurements between the coax shields and the power ground bus bar inside the shack. The ohm meter showed less than one ohm, but since it was at the limit of its capability, the actual resistance could be much less. In any case, the tower is effectively grounded well beyond the code requirements, and no static discharge problems are expected. As you see, the roof top ground opportunity in an industrial building is quite good. I wish I could be as confident about the copper sprinkler pipes I use at home.

We gratefully acknowledge Paul Lukas, N6DMV, who found time in his busy schedule to design this system.

A Note from the President by Bob Briggs

In the past couple of months we have had some interesting things take place which may define or at least influence what we do as a Club in the future. First we have raised our rates at the Club's Swapmeet which will allow us to do a little more in providing Club members better amateur radio facilities. Also we have "completed" the installation of the HF tower on the roof of building S, if any radio installation can be called complete. We are getting near completing the new Emergency Communications Van, it is looking real good. The Oscar Station is up and running and we are running Shuttle contact sessions for hams that would like the change to talk to an astronaut as he or she flies by. Our packet facility in building S is running when we can keep Chris from playing with it. The Internet gateway was a great idea and shows what can be done if the desire is there. So the projects that we set up for the Club are going well.

The big question is what is next, and what can we interest other Club members in getting involved in, what part of the amateur radio adventure? We have some opportunities that have surfaced and more will surface in the future.

First we have the opportunity to make this a more HF Club and go against the tide, that most hams are no-code-techs. We have the facilities and if we have HFers that would like to help show that a upper level license is a desirable thing to have, we could build up the number of Club members that are involved with HF communications. The Club could get more involved in HF events and show we do care in long haul communications. On the reverse side of the coin, we have the opportunity to pick up another repeater on 440 band and break into the 1.2 GHz band with a repeater in that band. True this would further the cause of the no-code-tech type of license. But in doing so we could contribute another open repeater to the area, this repeater is close at this time. As W6TRW we could provide another 440 repeater and a 1.2 GHz repeater for the general use of hams in the LA area. This could be a good thing for the area and not just for the Club. There is also talk of putting more antennas around Space Park to increase our communications capability and that is an other opportunity.

The question still stands for the members of the TRW Amateur Radio Club, we have the capability to get things done, but what are the things that the Club as a whole what to do and are they worth doing? Please take a minute to think what you would like your Club to be noted for and what is important for your Club to get accomplished.

Have a real good summer, Bob, KD6WYQ

Pictures from Field Day '97



Pictures from Field Day '97 (cont.)



Pictures from Field Day '97 (cont.)



TRW AMATEUR RADIO CLUB

ELECTED OFFICERS

| | | | | |
|----------------|--------------|--------|-----------|----------------|
| President | Bob Briggs | KD6WYQ | R8 / 2188 | (310) 813-2622 |
| Vice President | Pat Anderson | KB6YPI | R7A /1265 | (310) 813-6874 |
| Secretary | Nina Whiddon | KN6FL | O1 / 2070 | (310) 813-9351 |
| Treasurer | Jan Parker | KD6AKD | R4 / 2058 | (310) 812-1081 |

APPOINTED STAFF

| | | | | |
|----------------------------|------------------|--------|-------------|----------------|
| 447 Repeater Autopatch | Pat Anderson | KB6YPI | R7A /1265 | (310) 813-6874 |
| Activities Chairperson | Greg Martens | N6RRY | M1 / 1275 | (310) 813-4049 |
| Crosstalk Editor | Duane Park | WA6EIK | M2N / 1368B | (310) 813-4219 |
| Emer. Comm. Coordinator | Duane Park | WA6EIK | M2N / 1368B | (310) 813-4219 |
| Librarian/Asst. Postmaster | Steve Papa | KO6VF | M5 / 1263 | (310) 812-5305 |
| Membership Chairperson | Jerry Dean | WA6GVO | R2 / 1036 | (310) 812-0770 |
| Past President | Frank Cartier | W6FC | | |
| Publicity Chairperson | Dave Nelson | AB6DU | R2 / 1054 | (310) 813-9775 |
| QSL Manager | Bryan DeAro | KN6OW | 120 / 1020B | (310) 812-4789 |
| S.P. Packet/Internet Sysop | Chris Wachs | WA2KDL | R7A / 2100 | (310) 813-1506 |
| SEA Representative | Elizabeth Kunkee | KS4IS | D1 / 1024 | (310) 813-0524 |
| Swap Meet Manager | Rich Sauer | N6CIZ | R9 / 2849 | (310) 813-5869 |
| SYSOP (Telephone BBS) | Ron Hoffman | KE6OJD | M4 / 2031C | (310) 814-9126 |
| Technical Chairperson | John Cheatham | KE6OJM | R9 / 2838 | (310) 813-5903 |
| Training Chairperson | Bryan DeAro | KN6OW | 120 / 1020B | (310) 812-4789 |
| Trustee of W6TRW License | Elizabeth Kunkee | KS4IS | D1 / 1024 | (310) 813-0524 |

TRW/ARC Telephone Computer BBS (24 hrs, 300-14,400 Baud, 8-N-1) (310) 768-3399
TRW/ARC Hotline (Club Answering Machine) (310) 813-8569
W6TRW 2 Meter Repeater (Open Repeater) 145.32 (-600) PL 114.8Hz
W6TRW UHF Repeater (Open Repeater / Closed Autopatch) 447.00 (-5 MHz) PL 100 Hz
W6TRW-3 Packet Radio Internet Gateway and BBS (1200 Baud Port) 146.745 (-600)
W6TRW Internet Home Page <http://w6trw.sp.trw.com/w6trw/>

TRW Amateur Radio Club
One Space Park
S/1156
Redondo Beach, CA 90278

FIRST CLASS

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