TRW W6TRW AMATEUR RADIO CLUB

CROSSTALK

TRW SEA

A Publication of the TRW Amateur Radio Club

JULY 1994 CALENDAR

Every Monday: DCS Net on 145.32 Repeater at 7:30 PM

Every Wednesday: Emergency Communications Team Net on 145.32 Repeater at Noon

Every Thursday: Club Net on 145.32 Repeater at 7 PM, Club news, etc.

Every Friday: Club Breakfast in Bldg S cafeteria, 7-8 AM

Jul 5: Executive Board Meeting, E2/1200, 5:30 PM

Jul 12: Emergency Communications Team Meeting, R3/1413, Noon

July 12: Noon Picnic at Polliwog Park, Bring your QRP gear for the contest

July 15: Technical Chairman's Meeting, Bldg S Shack, Noon

July 30: Swap Meet, Parking lot, NW corner of Aviation & Marine, 7-11:30 AM, T-HUNT at Noon

---

EDITORS NOTES: The deadline for CROSSTALK submissions is the executive board meeting on the first Tuesday of each month. If you have something and will be later than that please call and I will try to accommodate you.

FIELD DAY: Final plans for Field Day are outlined by John Shepherd, WB6VYX in this issue.

JULY PICNIC: Bryan De Aro is coordinating an informal QRP contest during the club picnics this summer. Bring your QRP rig, antenna and battery and join in the fun.

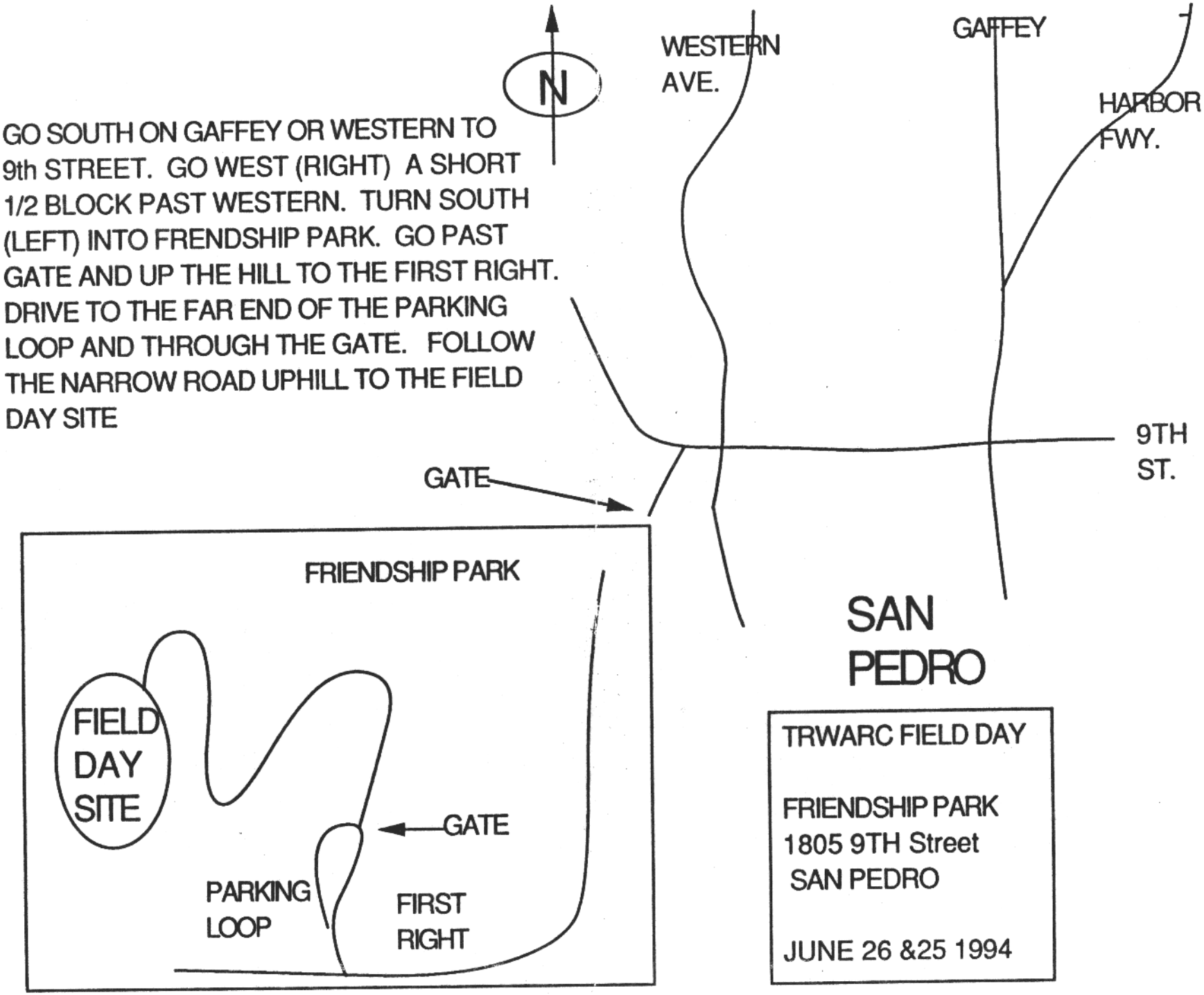
VE TESTING: An updated list of local VE test locations and dates can be found on KB6AXK-1, 145.690 packet. There are VE test locations in the L.A. area almost every weekend. If someone prints a clean copy for me I'll be happy to publish it in *CROSSTALK*.

W6TRW Field Day 1994

Field Day is just a couple of weeks away (June 25 and 26) and things are going well. The band captains are signed up, the location (Friendship Park) is confirmed, food is being planned, and a new 40 meter antenna is on order (a 2 element Yagi). There have been some changes to the FD rules this year. Unfortunately the WARC bands cannot be used. Another change is that the power limit for battery power is 5 watts. We will be operating Class 7A as we have in the last several years. Number 9 in the country for total points was not bad in '93 but we would probably have been third in the national ranking if the low power battery rule had been in effect last year.

We are planning on starting a little earlier this year than last. We will be loading the equipment and antennas about 10 AM Friday instead of waiting until noon. We need all the help we can get out at the Conex Box west of Building 03 come on out if you can. This should give us a little longer to get the antennas up and maybe Ray can get an extra few hours of sleep on Friday night! We will get on the air at 11AM on Saturday and operate until 11AM on Sunday. We need also help for tear down - please give Mike a call or just show up at noon on Sunday if you can help. We need some good CW ops and a "real novice" if we can find one. The list of band captains is attached as well as a map to the site. If you would like to operate, set up, tear down, or just enjoy Field Day with the club give a band captain a call and come on out.

GO SOUTH ON GAFFEY OR WESTERN TO 9th STREET. GO WEST (RIGHT) A SHORT 1/2 BLOCK PAST WESTERN. TURN SOUTH (LEFT) INTO FRENDSHIP PARK. GO PAST GATE AND UP THE HILL TO THE FIRST RIGHT. DRIVE TO THE FAR END OF THE PARKING LOOP AND THROUGH THE GATE. FOLLOW THE NARROW ROAD UPHILL TO THE FIELD DAY SITE



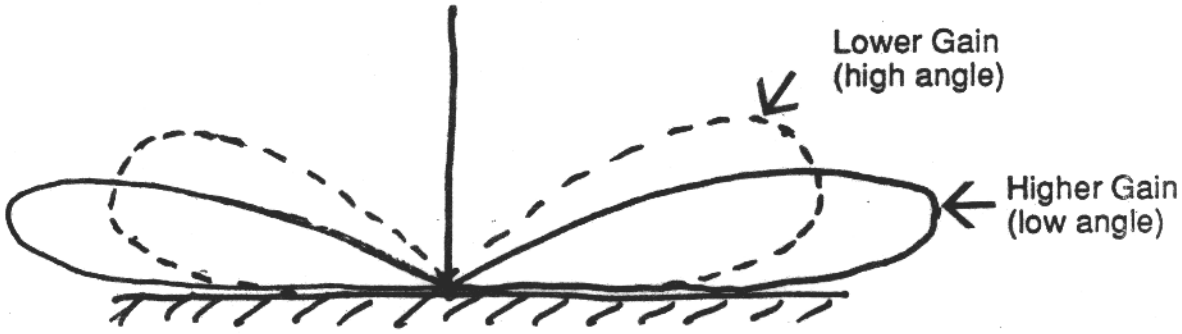
TRWARC FIELD DAY

FRIENDSHIP PARK
1805 9TH Street
SAN PEDRO

JUNE 26 &25 1994

Newcomers Equipment Guide: VHF/UHF Antennas

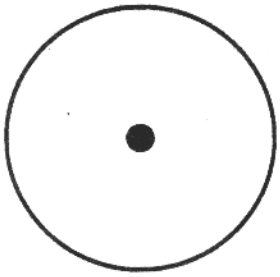
VHF/UHF antennas come in many shapes and sizes. There are many excellent designs on the market which are available for less than the cost of materials if you bought them at the local hardware store. The first and simplest is the vertical. FM voice and packet use vertically polarized antennas. In general, the longer the antenna the higher the gain. Higher gain means a narrow beamwidth as illustrated below. This antenna has a circular gain pattern, it transmits energy in all horizon directions.



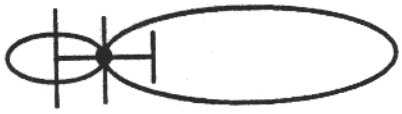
If you live in an area where the terrain is generally flat like the South Bay a high gain antenna will work fine and allow you to use less power to communicate (or communicate farther with the same power). For those who live in the foothills, or travel there frequently, where the angle required to see mountain top repeater locations is high, should consider purchasing a lower gain antenna. If you are unsure ask a few other hams in your neighborhood what antennas they use for base station and mobile operating. Also ask how much power they use, if its more than a few watts ask why. You don't want to need a 200 watt power amplifier to contact the local repeater or BBS because you bought the wrong antenna.

If you operate both 2 meters and 70 cm consider a dual band antenna. This is especially convenient for mobile operation. Don't be fooled by manufacturers gain claims. Most published claims are theoretical, not measured and a few take credit for higher than theoretical gain by comparing to a "Ducky" style HT antenna with 3 to 6 dB of loss. Full size vertical antennas of the same length and of similar design have similar gain (there's no free lunch).

Yagi or beam antennas are used for more distant communications, where it is desirable to reject strong local signals or to prevent interfering with others. They require a rotator to point them to the desired station due to their narrow beamwidth. The figure below illustrates this looking down at the top of the antenna.



Vertical



Yagi

In general, more elements mean more gain. They may also be stacked (operated in parallel) to increase the gain. For FM and packet orient the Yagi elements vertically or Quad elements so the feed point is on a vertical side. For SSB or CW work horizontal polarization is used so the Yagi is mounted with its elements parallel to ground and a Quad with its feedpoint on the lower horizontal side. There is a great variation in performance for Yagi antennas. More elements or a longer boom do not necessarily mean higher gain since the designer can trade gain, bandwidth and front-to-back ratio for various combinations of boom length, number of elements and element spacings. A few manufacturers publish measured gain figures for their Yagi antennas which is the only valid method of comparison in my mind. Remember that dBi gain is 2.1 dB higher than dBd gain when making comparisons. When manufacturers just say dB it is dBi which is the higher number. Front-to-back ratio refers to the ratio of the signal power transmitted off the back to the power transmitted from the front of the antenna. Higher front-to-back ratios mean improved rejection of high power local signals off the back of the antenna.

If you have a favorite BBS or repeater that you use most of the time a dedicated fixed mounted Yagi is an excellent choice since it minimizes energy radiated in other direction which reduces possible interference to and from others. Since a Yagi has significant gain it will also permit you to use less transmit power. Remember that the effective transmit power is the power output of your transmitter in dBw plus the gain of your antenna in dBi. Either increased transmit power or higher antenna gain improve your ability to communicate, antenna gain is usually cheaper. dBw is dB relative to one watt, one watt is 0 dBw and 10 watts is 10 dBw (dBw = 10 log (power in watts)).

The "ARRL Antenna Book" and various VHF/UHF handbooks contain design information for those who like to build their own antennas. There are several user friendly Antenna and Yagi analysis programs available for the PC. The next edition of the "ARRL Antenna Book" will have a companion Yagi design program available which I was fortunate to be able to Beta test and looks excellent. This book is scheduled to be released this summer.

73 de KJ6GR

For Sale:

- Ten Tec Argonaut II QRP Transceiver, 5 watts out on all bands 160-10 meters, general coverage receiver. $1000 firm. Excellent condition.
- Cushcraft D4 40/20/15/10 meter Rotary Dipole. Good Cond. $150.
-Kent Iambic Paddle Key. Excellent Cond. $50.

Call Bill Shanney, KJ6GR (310) 542-9899 evenings after 6 PM.

KERN COUNTY CENTRAL VALLEY AMATEUR RADIO CLUB, INC.

SINCE "1946"

(A Non-Profit California Corp.)

P.O. BOX 743, BAKERSFIELD, CA 93302

300 Members

For More Info Write Club Address

CLUB REPEATERS
146.910-
145.150-
224.060-
443.900+

TALK IN ON
147.540
223.500

1st NATIONAL HAMFEST

Oct. 6-9, 1994
"Costerisan Lake"
BAKERSFIELD, CALIFORNIA

MON.
145.150-
224.060- Linked
Club Call - W6LIE

GRAND PRIZES
#1 KENWOOD TS-50s
#2 YEASU FT-2400h

MAIN PRIZES
$3,000.00

SWAP TABLES
(N/C)

FOOD BOOTH

MANY DEALERS & MANUFACTURERS

THURSDAY, OCTOBER 6
NOON • Gate Opens for Dealer Setup & Camping

FRIDAY, OCTOBER 7
1:00 PM - 4:00 PM • Study Period for Ham Test
5:00 PM • V.E. Testing
7:00 PM • Entertainment

V.E. TESTING Friday Nite

SATURDAY, OCTOBER 8
11:00 AM • Q & A with F.C.C. Representative
2:00 PM • Tri-Tip Dinner
4:00 PM • Q & A with Manufacturers
7:00 PM • Entertainment

TROPHIES FOR
Oldest Ham (age)
Youngest Ham (age)

SUNDAY, OCTOBER 9
11:00 AM • ALL Prizes given away!!!

CAMPING FEE - $10
4 Days & 3 Nites
(no hookups)

A.T.V. DEMO ALL WEEKEND

"THE START OF SOMETHING BIG"

73's

Flyer Layout & Printing by:

CASTLE PRINTERS