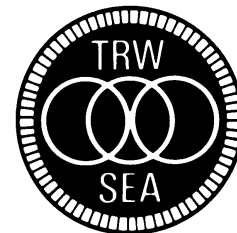




CROSSTALK

News Bulletin of the TRW Amateur Radio Club



Volume 99 Number 3

March 1999

Calling all Novices!

Novices and Tech Plus's, this is your chance to shine! You are desperately needed for the June 1999 W6TRW Field Day effort. The Field Day rules allow us a free Novice/Tech Plus station that does not add to our total transmitter count. This station operates with the call sign of the Novice or Tech Plus control operator so it can contact the same stations that W6TRW contacts for additional points. The station must operate on the Novice segments of the bands which includes a voice segment on the 10 meter band plus CW segments on 10, 15, 40, and 80 meters. This is a great opportunity for new hams to get their feet wet on HF. And if you're a no-code Tech, think about taking the 5 WPM code test before June to get your Tech Plus license, it's really not that hard. Perhaps your child is a Novice or Tech Plus, or maybe you have a friend who would be interested, they do not have to be a member of the club to participate in Field Day. **Contact Jim Harrison, K6OUE at TRW (310) 814-1937**, or any officer of the club.

Ham helps NAB Road-Rage Suspect via NEWSLINE #1118

A California ham was instrumental in helping police to nab an angry motorist who had seriously injured another motorist. This after being cut off on the freeway in mid-December. According to an account in The Orange County Register, the angry motorist followed the other driver for miles before confronting him on a busy city street. He then allegedly shoved his victim under an accelerating big rig tractor trailer and then kicked him even after he had been run over. The account says that the angry driver and his two co-workers drove off. They were caught later in the morning when Ed Greany, KB6DOL, of Corona, heard a broadcast description of the vehicle and then saw the men pass by. He notified police via ham radio. They arrested Richard Snyder and two others on suspicion of attempted murder. The newspaper said Snyder had a string of previous convictions, and his drivers license had been suspended. The injured motorist was reported improving in a Los Angeles area hospital.

(Orange County Register, Orange County News Channel, ARRL)

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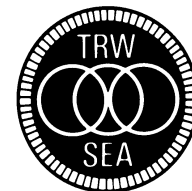
New Club Members

Let's give a warm Welcome to new members, Patrick Chin KF6UWU, Andy Rein KD6WXM, Michael Hamada KF6UCN, Anita Manriquez KF6UAB, and Ron Haky KF6UAD.

IMPORTANT MEMBERSHIP NOTE:

In case you didn't know, Club Memberships expire every January 31st. If you haven't already, please RENEW using the Membership form in this issue!!!!

TRW ARC Monthly Calendar of Events



First Tuesday of each month	5:30 pm	Executive Board Meeting, R4/2041 (All Club Members are invited)
Second Tuesday of each month	5:30pm	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

Weekly 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 All Amateurs Welcome
Every Thursday	7:00 pm	Space Hams Net on 2 meter Repeater with N6SHI and W6EKK
Every Mon, Wed, Fri	2:00 pm	TRWARC Retirees Net 7185 KHz
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 Hours: 10:00 to 17:00 (get a \$25.00 annual pass see: <http://www.lacomputerfair.com/annpass.html>)

POMONA \$6.00 admission

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

March 13 & 14, 1999 (Sat. & Sun.) bldg. 4

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 \$3.00 admission

March 6, 1999 (Sat.)

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 \$5.00 admission

March 7, 1999 (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. 7:00 to 11:30 AM @ A.B. Miller High School, Walnut & Oleander

in **Fontana** Talk-in 145.480 (-600 pl=77.0hz)

EI Cajon ARC - 1st Sat. ea. mo. 6:00 AM @ Santee Drive-in Theater, Woodside Ave. @ Hwy 67 in **Santee** Talk-in 146.52

NEW: CAL POLY swap meet – 3rd Sat. ea. mo. 7-11am in lots F8,F9 and F10 @ CAL Poly Pomona at 3801 West Temple.

Talk-in TBD (if you know, please email me... ed.)



TRW AMATEUR RADIO CLUB MEMBERSHIP APPLICATION

COMPLETE BOTH SIDES!

ALL APPLICANTS (Please Print Clearly):

Name: _____ Date: _____

Amateur Call Sign: _____ License Class: _____

Student under age 18? _____ ARRL Member? _____

Home Address: _____

City: _____ State: _____ Zip: _____

Home Phone Number: (_____) _____--_____

E-Mail Address (if any): _____

CURRENT SPACE PARK EMPLOYEES ONLY:

Badge Number: _____ CCC: _____ Phone: _____

Mail Station: Building: _____ Room: _____

FAMILY MEMBERS OF TRW SPACE PARK EMPLOYEES AND RETIREES: *

Name: _____ Call: _____ Class: _____

* Family members of Non-Space Park Employees are *not* eligible for family memberships.
Submit a separate application.

=====

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DUES:

TRW Employee (\$5.00)	\$ _____
TRW Retiree (\$6.00) **	\$ _____
Non-Employee (\$10.00)	\$ _____
TRW Family Members (\$6.00)	\$ _____
ARC Club Badge (\$5.00)	\$ _____
TOTAL AMOUNT DUE:	\$ _____

** Retirees: Badge No. _____

TRW ARC CLUB BADGE ORDER:

CALL

FIRST NAME

CONTINUED ON BACK ----->

PLEASE INDICATE THE CLUB ACTIVITIES YOU WOULD LIKE TO PARTICIPATE IN DURING THE COMING YEAR:

- | | |
|---|--|
| <input type="checkbox"/> W6TRW Field Day | <input type="checkbox"/> Monthly Club Meetings |
| <input type="checkbox"/> Contest (HF and VHF) | <input type="checkbox"/> Club Breakfasts |
| <input type="checkbox"/> Emergency Communications | <input type="checkbox"/> Using the Club Shack |
| <input type="checkbox"/> Picnics | <input type="checkbox"/> Club Library |
| <input type="checkbox"/> ARC Swapmeet | <input type="checkbox"/> Antenna Parties |
| <input type="checkbox"/> Technical Challenges | <input type="checkbox"/> Repeaters |
| <input type="checkbox"/> Training | <input type="checkbox"/> Other: _____ |

PLEASE INDICATE YOUR INTERESTS IN AMATEUR RADIO:

- | | |
|------------------------------------|---|
| <input type="checkbox"/> HF | <input type="checkbox"/> SSTV |
| <input type="checkbox"/> VHF | <input type="checkbox"/> AMTOR |
| <input type="checkbox"/> UHF | <input type="checkbox"/> CW |
| <input type="checkbox"/> Microwave | <input type="checkbox"/> DX |
| <input type="checkbox"/> Packet | <input type="checkbox"/> Computers |
| <input type="checkbox"/> OSCAR | <input type="checkbox"/> DCS/RACES/ARES |
| <input type="checkbox"/> RTTY | <input type="checkbox"/> QRP |
| <input type="checkbox"/> ATV | <input type="checkbox"/> Other: _____ |

What do you like best about the TRW ARC?

=====

The membership year runs from February 1st to January 31st. Dues are payable in January and are prorated on a quarterly basis thereafter. Please make checks payable to:

TRW Amateur Radio Club and send to:

TRW AMATEUR RADIO CLUB
 Membership Chairman, S/1156
 One Space Park Drive
 Redondo Beach, CA 90278

=====

FULL RELEASE OF ALL CLAIMS

In consideration of my participation in the TRW/SEA Amateur Radio Club and any and all of its events, I, the undersigned, intending to be legally bound, for myself, my heirs, executors and administrators, do hereby fully and finally waive, release and hold harmless the TRW/SEA Amateur Radio Club, TRW Space Park Employees Association, TRW, Inc., an Ohio corporation, and their respective directors, officers, employees, members, agents and assignees from any and all responsibility, liability, claims, causes of action, injuries, judgments or other damages of any nature whatsoever, including, but not limited to, any personal injuries I might suffer, directly or indirectly resulting from my participation in, or travel to and from the aforesaid activity.

I acknowledge that I am engaging in the aforesaid activity, and knowingly executing this Release, at my insistence and request and that I voluntarily do so without any coercion whatsoever.

Signature: _____ **Date:** _____

011999

W6TRW Competes in the 1999 January UHF/VHF Sweepstakes

by Steve Lambert - KQ6ZC

In the wake of several club members doing pretty well in some of the most recent UHF/VHF contests, the interest seemed to be peaking for a club foray into the contest scene. The January UHF/VHF Sweepstakes was held the weekend of January 23rd and 24th. W6TRW operated remotely from the scene of past contests in Signal Hill.



The contest began with the early Saturday morning arrival of Irv Zipper - W3GRA, Steve Lambert - KQ6ZC and Calvin Hashi - KH7W at TRW to finish up our packing and get on the road. We finished packing later than expected and missed our 9am meeting time at Signal Hill. Meeting us at the Signal Hill site were Richard Witte - K6KMA and Jim Harrison - K6OUE. We hurriedly began to unpack and erect the masts and antennas. Jim and Richard began to assemble the 6m beam while Craig Gullickson - N6ED, Calvin and Irv began setting up the guys and push-up masts. Steve got busy in the van getting all the radios and computers set up.

We ran pretty close, but at eleven o'clock the contest was starting and W6TRW was ready. Our final station was pretty impressive.

We had the 2m beam on a 30 foot mast with a rotator base and an M2 stacked sqloop antenna for omni-directional use. On another mast was the 6m meter beam, which we secured to a convenient "No Parking" sign. The third mast held the 70cm beam and two 23cm beams. Each of the four stations had its Icom all-mode radio and its own laptop computer for logging.

The contest started off fast and furious with everyone hitting the air right at eleven. W6TRW started off strong with Richard on 6m, Craig on 2m, Jim on 23cm and Robert Manriquez - KF6EXC on 70cm. Operation went strong on all bands through-out the day. We made contacts on SSB and FM modes. We even made two 2m CW contacts when Craig heard a strong signal from up north. Luckily, Jim had a straight key, and Craig pounded out the call for yet more parts. Jim also did a great job getting the four local grids on 1296 MHz.



Not to say we didn't have our problems. We were frustrated by our lack of luck on 220 MHz at the beginning of the contest. We only had the FM rig and a vertical, but nobody would answer us. A little trouble-shooting and Cal discovered a bad microphone. I was also eating a late dinner (Two big pizzas thoughtfully delivered by Robert - KF6EXC and Anita - KF6UAB Manriquez) when I looked back towards the van and saw total darkness except for the lap top computer screens. It seems with all the extra lights we turned on we finally exceeded the current limit and blew a fuse. However, quickly switching over to the battery system, we got back on the air. The fuse was changed, and the contest continued, but with a few less lights.

Thanks to the good graces of the Signal Hill Police Department, we were allowed to remain through the night at Signal Hill. Cal and Steve volunteered to camp out in their sleeping bags and keep an eye on the equipment through the night. They finally talked Greg Shreve - KE6YEX into going home at 11:30pm and letting them get a little sleep.

Sunday morning came overcast and threatening rain. It was decided among those present (Cal, Steve and Irv) to go ahead and begin packing before the rain. Still, it was a memorable event and a good effort as well as a learning experience.

A big congratulations to all the operators and those who helped with all the work:

Craig Gullickson - N6ED

Jim Harrison - K6OUE

Calvin Hashi - KH7W

Ed Koran - WA6JOK

Steve Lambert - KQ6ZC

Robert Manriquez - KF6EXC

Anita Manriquez - KF6UAB

Greg Shreve - KE6YEX

Richard Witte - K6KMA

Irv Zipper - W3GRA

W6TRW Competes in the 1999 January UHF/VHF Sweepstakes (cont.)

The reward of all their effort is in the points:

<u>BAND</u>	<u>QSO</u>	<u>QSO PTS</u>	<u>GRIDS</u>
50	72	72	8
144	111	111	12
222	19	38	4
432	66	132	4
903	0	0	0
1.2	15	60	4
2.3	0	0	0
3.4	0	0	0
5.7	0	0	0
10G	0	0	0
24G	0	0	0
LHT	0	0	0
Totals	283	413	32 = 13,216



The longest contacts belong to the 2m station which racked up these highlights:

CM87 Santa Cruz (About 268 miles)

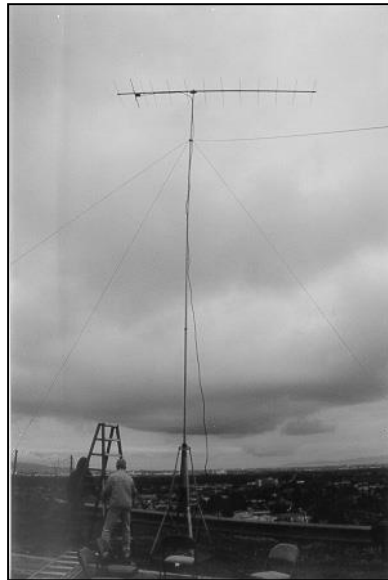
CM98 Shingle Springs (About 321 miles)

Thanks to all those who gave us a call and some points: Mike Worshum - WB6K, Brian De Aro - KN6OW, Frank Bartel - KC6ABS, Stan Johnson - W6EKK, and Dave Nelson - AB6DU.

A few more pictures from the gallery:



6m beam "parked" on the curb.



2m beam up on the tall mast.



70cm and 23cm ready to go.

Club Member scores high in IARU HF World Championship Contest

Congratulations to our own Craig Gullickson, N6ED for his outstanding results in the IARU HF Championship. Craig scored 822,950 points in the ITU Zone 6 from the W6TRW club station. He in fact finished 9th in all US and Canada, and was the highest point achiever in the west coast. Good Job Craig, Well Done.

A Note From Dave Nelson, AB6DU

Hams interested in emergency communications should take note of this one. Besides the reference to Gulf area states, this could also enhance local communications. VHF is not adequate for covering all sides of the PV peninsula, for example. But PV hams tell me that 75 meters covers the hill nicely, and doesn't require any repeaters. There are bound to be other hilly or long range instances (as below) where 5 MHz would nicely provide the needed coverage. Since the experimental license has already been issued, there is clear expectation it will be a successful venture. I'm looking forward to the day when I have to modify my Yaesu for this band. Anyone want to upgrade now and beat the rush?

SB QST @ ARL \$ARLB007
ARLB007 FCC issues 5-MHz Experimental License to ARRL

ZCZC AG07
QST de W1AW
ARRL Bulletin 7 ARLB007
From ARRL Headquarters
Newington CT January 23, 1999
To all radio amateurs

SB QST ARL ARLB007
ARLB007 FCC issues 5-MHz Experimental License to ARRL

The FCC has issued an Experimental Radio Service license to the ARRL to permit two-way tests in the vicinity of 5 MHz, the most likely site of the next amateur HF band. The license, bearing the call sign WA2XSY, was issued January 8. A group of 15 current amateurs in various parts of the US and the Caribbean will conduct experimental, two-way RTTY and SSB transmissions within the band 5.100 to 5.450 MHz. To avoid interfering with existing services, the participants will confine their operations to the least-populated 50-kHz segment.

'The idea is to show that an amateur allocation there will improve our emergency communication capabilities by filling the gap between the 3.5 and 7.0 MHz bands,' said ARRL Executive Vice President David Sumner, K1ZZ. Sumner pointed out that several of the participants are phone net members in the Caribbean and Gulf area who frequently handle hurricane-related traffic and now must alternate between 75 meters and 40 meters. Other participants are members of a nationwide digital data-forwarding network.

The Experimental license is good for two years. Two studies by the National Telecommunications and Information Administration (NTIA) include an allocation at 5 MHz among the future spectrum needs for the Amateur Service. The subject is not likely to show up on the agenda of a World Radiocommunication Conference for several years, however.

Participants in the WA2XSY experiment may run up to 200 W effective radiated power. Similar multiband trap dipoles capable of operation on 80 and 40 meters as well as at 5 MHz will be employed at each station location. Operation by participants will consist of short transmissions to determine propagation characteristics.

Participating stations are located in New Hampshire, Tennessee, Ohio, Florida, Mississippi, Wisconsin, Indiana, California, Utah, New York, Texas, the US Virgin Islands, and Maryland.
NNNN

/EX

President's Corner Greg Shreve KE6YEX

From: AOLNews@aol.com
Sent: Sunday, January 31, 1999 2:54 PM
Subject: Morse Code Use Ends for Most Ships

Morse Code Use Ends for Most Ships

The Associated Press

LONDON (AP) -- SOS. Morse code officially goes out of use Monday for most ships in distress at sea.

The International Maritime Organization set Feb. 1 as its target date to replace dots and dashes with a satellite system -- the Global Maritime Distress and Safety System -- that can pinpoint the location of a ship signaling for help. The new system is mandatory for all international freighters over 300 gross tons, all passenger vessels and self-propelled oil drilling units. Coastal freighters, most fishing boats and pleasure craft are exempt. However, Lloyd's List, a maritime industry newspaper published in London, estimated in December that a quarter or more of the world's ships still had not been fitted with the necessary equipment, which costs a minimum of \$30,000. Panama, which has the world's largest registry of ships, has announced fines of up to \$10,000 for ships which fail to comply, Lloyd's List reported. The Global Maritime Distress and Safety System has been phased in beginning in 1992. Distress signals are beamed from a ship to an Inmarsat satellite, which relays the alert to a rescue-coordinating center station on the ground. The ground facilities are at Raisting, Germany; Goonhilly Downs, England; Perth, Australia and Niles Canyon, Calif.

The locating system is accurate within 200 yards, the IMO says.

It was 100 years ago that a radio message first set off a rescue mission at sea. A lightship called for assistance when it saw the steamship Elbe run aground off Dover, England, the IMO said.

The SOS signal was adopted at an international conference convened three months after the Titanic sank in 1912.

According to the IMO, the signal was adopted because it was easily recognizable -- three dots, three dashes and three dots -- and not because SOS stood for anything such as ``save our souls."

AP-NY-01-31-99 1753EST

SAREX FLIGHT DELAYED AGAIN *(via the ARRL Letter Volume 18, Number 6)*

The only [Space Amateur Radio Experiment \(SAREX\)](#) flight scheduled for 1999 has been delayed yet again. NASA sources say the STS-93 shuttle Discovery mission--originally set for January and subsequently delayed until March, then April, then May--now has been bumped until July 9. An official announcement was pending. Schools on the schedule to have their students talk to the astronauts via Amateur Radio will be contacted. The postponement will allow **TRW Space and Electronics Group** to evaluate and correct a potential problem with several printed circuit boards in the **Chandra** X-ray observatory, a Discovery payload. The problem has been traced to poor conductivity between different layers of the boards (ie, through-plating), according to NASA, which has directed TRW to remove and replace the boards in the main unit. The boards are made by B.F. Goodrich Aerospace. Reportedly, some 100 boards are involved. -- *NASA and other sources*

(Editor's Note: NASA changed the STS-93 payloads name recently, it used to be called AXAF)

Article Submitted by Jim Harrison K6OUE

Club Meeting Notes

The February club meeting was held on Feb. 9, 1999 at the Round Table Pizza Parlor, from about 5:30 to 7:30. The new club President, Greg Shreve KE6YEX, outlined his vision for the club for the coming year. Greg has lots of ideas for fun projects that the club could get involved in. Contact Greg if you would like a copy of his presentation. Pete Livingston, W3CRI, gave a very interesting presentation which included the story of his first project out of school (measuring the electromagnetic impulses from atomic bomb explosions!), and then a presentation of his design for an 80 meter delta loop beam which could be put on building S to improve our 80m capability.

We also welcomed four new faces at the meeting:

Patrick Chin, who was still waiting for his new license to arrive (*KF6UWU –New Member*) ed.

Andy Rein, KD6WXM, who just started at TRW a few weeks ago (*New Member*)

John Martinez, KE6YES

Mike Spinelli, KF6EXA who was a Guest of John Martinez

New VHF/UHF Contest

In the last issue I mentioned that the ARRL would no longer sponsor the VHF/UHF Spring Sprints due to lack of participation. The good news is that now there is something to take their place. CQ VHF Magazine is announcing their new “CQ VHF Activity Weekends.”

There are a couple of unique aspects to these new “activities” (they don’t even use the word “contest”, I guess that’s a dirty word in some quarters). First, each weekend is divided into nine 6 hour periods so you can participate in as many or as few periods as you want and you will only compete with stations that operate the same number of periods. This way you don’t have to sit at your radio for an entire weekend to be competitive (spouses and family members seem to take a dim view of that kind of thing). You can contact a station once per band each period. This should also ensure that there is activity all weekend long instead of mainly at the beginning of the contest.

Another unique aspect is that each weekend highlights a different operating mode. The first weekend, scheduled for **March 19 to 21**, is for FM only. This will give the people who only have FM capability their own contest. No repeater contacts are allowed, but satellite contacts are. The FM satellite, AO-27, is already a zoo on weekends, so this should make things interesting. Just think of the grid squares you could get by satellite!

The second weekend, **April 23 to 25**, is for SSB and CW only.

The third weekend, **May 21 to 23**, is for specialty modes. This one is really different. It is for video, RTTY, AMTOR, Packet and other digital equipment. For this one, repeaters, packet networks, or translators may be used. This will be great for ATV which has never found a place in contests because most ATV activity takes place on repeaters. I am anxious to see if this pulls all of the ATV operators out of the woodwork who rarely get on the air. It will also give the ATV repeaters a real workout, some of which are not very active.

Each “activity weekend” starts at 6:00 PM Friday local time, and ends at midnight Sunday local time. 6:00 to midnight Friday is Period 1, midnight to 6:00 AM Saturday is Period 2, and so on. The contest exchange is just call sign and grid square. Even though the contests start and stop on local time, the log should be kept in UTC. There are entry categories for single operator QRP (<10W), single operator, multi-operator QRP, multi-operator, and rover. For more information and how to enter your log, see <http://www.cq-vhf.com/spring.html>, or the March issue of CQ VHF Magazine.

TRW AMATEUR RADIO CLUB

ELECTED OFFICERS

President	Greg Shreve	KE6YEX	201A/3009	(310) 812-2079
Vice President	Elizabeth Kunkee	KS4IS	D1 / 1024	(310) 813-0524
Secretary	Craig Gullickson	N6ED	R6 / 2529F	(310) 812-5389
Treasurer	Steve Lambert	KQ6ZC	R6 / 2529	(310) 812-5019

APPOINTED STAFF

447 Repeater Autopatch	Duane Park	WA6EIK	R8 / 2778A	(310) 813-4219
Activities Chairman	Greg Martens	N6RRY	M1 / 1275	(310) 813-4049
Crosstalk Editor	Duane Park	WA6EIK	R8 / 2778A	(310) 813-4219
Emer. Comm. Coordinator	Wendell Young	KE6ASC	R5 / 1060B	(310) 813-7691
Librarian	Steve Papa	KO6VF	O2 / 1715	(310) 812-5305
Membership Chairperson	Dave Nelson	AB6DU	R8 / 2144	(310) 813-9775
Past President	Rich Sauer	N6CIZ		
Publicity Chairperson	Dave Nelson	AB6DU	R8 / 2144	(310) 813-9775
QSL Manager	Bryan DeAro	KN6OW	120 / 1020B	(310) 812-4789
S.P. Packet/Internet Sysop	Chris Wachs	WA2KDL	M4 /	(310) 813-1506
SEA Representative	Nina Whiddon	KN6FL	O1 / 2020	(310) 813-9351
Swap Meet Manager	Greg Martens	N6RRY	M1 / 1275	(310) 813-4049
Technical Chairperson	John Cheatham	KE6OJM	R9 / 2477	(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 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://gw.w6trw.ampr.org/w6trw>

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

FIRST CLASS

Deliver To:

