

May 2007

Volume 39, Issue 3

Come one, Come All to W6TRW's Field Day 2007

by W6TRW Field Day Chairman, Denis Santiago NB6I



June is rapidly approaching and we continue to plan for another great Field Day at Polliwog Park. We are beginning to make progress on the infrastructure part of the plan. Now I need to start hearing from you operators. Yes I know everyone is busy but it's time to start checking in so I can get an idea of which antenna's we need to plan to set up and where additional band captain recruiting needs to get done.

Most important I really need the operator teams for the following stations to check in, the 40 meter SSB, 20 meter SSB and HF Digital (PSK31) stations. If you ran the station last year the favor of letting us know if you'll be coming again or not as soon as possible would be most appreciated.

There is plenty of additional opportunity to run more radio stations. I'm looking to start a list of amateurs willing to operate and help increase the number of stations we will run. This is one of the few years when Field Day does not conflict with the Swap Meet so take advantage of the opportunity to come out. We'll set up as many antennas and radios as there are people to run them.

So what's operating a Field Day station like? It's really simple actually. The transmissions are short and the point and the game is to make as many of them as possible. This is the typical exchange.

Station 1: "CQ Field Day this is W6TRW ... Whiskey Six Tango Radio Whiskey ... W6TRW."

Station 2: "W6TRW from NB6I"

Station 1: "NB6I please copy 4 Alpha LAX repeat 4ALAX QSL? from W6TRW."

Station 2: "W6TRW Copy your 4 Alpha LAX please copy in return One Delta LAX QSL? from NB6I"

Station 1: "NB6I Confirm your One Delta LAX thank you and good luck ... QR Zed this is W6TRW Field Day."

That's it. Your operating partner logs the contact and you're off to the next one. Digital contacts are pretty much the same and you have the added benefit of preprogrammed F-Keys that store most of the text ready to go. It's fast paced and fun radio and everyone should have a go at it sometime. I guarantee that it will inspire you to get or in some your cases finally use that General Class license. We will have some of the best HF antennas on the West Coast at our site. It literally does not get much better. And that's before you feast on the snacks we plan to have in abundance.

You can contact me about Field Day at dsantiago@earlymaturity.com or by calling me at my office (310)676-3300 or at my cell (310)918-6021. I'll be keeping a 2 meter handy between now and Field Day so you can also try for me on the W6TRW repeater if you have questions. And for you PSK31 aficionados I do plan on playing around on 14.070 Mhz in the evenings.



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Special points of interest:

- Swapmeet — Saturday May 26th, 7:30 to 11:30 AM
- Club Meeting — Tuesday, May 8th. Round Table Pizza 5:30 PM
- Photos - Submit your favorite Ham Radio Related photos for all to see...

SPSC ARC Monthly Calendar of Events

Second Tuesday of each month	6:00 pm	Club Meeting Round Table Pizza, SE Corner Hawthorne/RB Blvds.
Third Tuesday of each month	12:00 noon	Emergency Communications Team Meeting R3 Emergency Operations Center
Third Monday of each month	5:30 pm	Executive Board Meeting, E2/9043h (All Club Members are invited)
Last Saturday of each month (Rain or Shine & Holidays)	7:00 am	SPSC ARC W6TRW Swap Meet Marine and Aviation (Southeast Corner)
During the Swapmeet	10:00 am	VE Exam Sessions in Cafeteria

Weekly Events

Every Monday Night (Except the 1st & Holidays)	7:30 pm	Disaster Communication Systems (DCS) Net DCS Members: Check in on 2m Rptr
Every Wednesday	12:00 noon	ECT Net on 2 meter Repeater All Amateurs Welcome
Every Wednesday	12:00 noon	NG Family Net 14.270 MHz
Every Thursday	6:00 pm	W6TRW Net on 2m Repeater All Amateurs Welcome
Every Thursday	7:00 pm	Space Hams Net on 2 meter Repeater with N6SHI and W6EKK
Every Mon, Wed, Fri	2200Z	W6TRW Retirees Net 7185 KHz
Every Friday Morning Talk-in on 2 meters	7:00 am	SPSC Amateur Radio Club Breakfast Building S Cafeteria - Everyone is invited

CQ DX on PSK31

by Dennis Santiago, NB6I

PSK31 is a fun digital mode for the technical minded HF ham. Evenings and weekends are filled with rag chewing signals on 20 meters at 14.070 Mhz and 40 meter at 7.070 Mhz. These chats are easily participated in by the most basic HF stations running an average of 30 to 40 watts of power to talk around the United States. There are many 5 watt QRP stations to chat with as well. PSK31 is particularly enjoyable in that you get to do a lot of conversational typing. This is not the ham shorthand Q codes used in CW, the full flower of one's ability to use the English language reigns on this mode. The topics may start with the perfunctory exchange of name, location, signal report and equipment used it quickly shifts to all manner of subjects. This is an ideal way for new General Class hams to start to use the HF bands. The software to run PSK31 for domestic rag chewing is pretty much point an click. There's a waterfall display on your computer screen with each signal shown as a track. Use your mouse to click on a track and presto, you are copying the mail. Any PC pulling in audio from an HF transceiver into it's sound card can be set up to copy the mail in less than half an hour including finding and downloading a copy of a freeware program like Digipan. Setting up to transmit takes a few more steps but you can pretty much but the parts on the internet now, use PayPal to send in the money and get the pieces for your station in the mail in a few days. In the early days we homebrewed the interface and it took about \$10.00 in parts to get it all done plus another \$5.00 if you bothered to put it in a box. You can do that too. The circuit diagrams are in the documentation for the software but then again the commercial stuff does looks nicer.

There's a particularly interesting aspect to PSK31 that people don't normally see. That's DX traffic on PSK31 particularly on 20 meters. In the evening when propagation for US domestic traffic dies down and the band seems to go dead it isn't. Hidden inside the seemingly monotonous white noise of the waterfall display on the PSK31 computer screen is a world of DX signals just waiting for the ham willing to do a little more work. PSK31 DX takes you out of the world of convenient point and shoot PSK31 operating. You'll need to get to know more of the controls of your radio. In particular, how to manipulate the filter width, preamp and attenuation controls of the radio. DX PSK31 stations are pushing about 40 watts into the air and to pull them out of the weeds you will need to narrow down the bandwidth of your to cut out extra noise and then adjust the incoming signal strength using the preamp/attenuation combination to get it into the sweet spot of your receiver's dynamic range. Modern amateur radio receivers are transistor systems and they work best within a narrower linear operating range than older analog tube radios. So the trick here is to use the radios controls to condition the source so it's where the radio works best. Not to worry, you won't need to dig into the guts of the transceiver's service manual to figure this out, you have the perfect test monitor. You will see it plain as day on your PSK31 software screen. Narrow the filter and the waterfall narrows. Punch on the preamp and the waterfall changes to a hotter color. Turn on attenuation and the waterfall color cools. It is great having the communications software also be the perfect piece of test equipment. The last thing you'll need to do for PSK31 DX is to use the VFO dial. When hunting for weak DX signals you'll have narrowed the receiver down to maybe 500 hz bandwidth as opposed to the 2.8 Khz width for domestic PSK31 work. So you need to move the track into the waterfall area where your receiver is listening.

So what's out there? Russia and Japan are big sources of evening 20 meter PSK31. On 40 meters, look for Australia, New Zealand and the Pacific Islands. There's a good chance they can hear your signals loud and clear even if you are working every button on your radio to hear them. Most DX stations are blessed with a lot less RFI/EMI noise than we have here in metropolitan Southern California. It's a new morning in that part of the world as the bands settle down for the night, a world of operators coming online hoping to catch a chat with their favorite DX target, CQ DX USA. It's just the thing to do while eating that dish of ice cream after dinner.

Did this whet your appetite? Come learn more about PSK31 at this year's W6TRW Field Day at Polliwog Park! It's on June 23-24, 2007 and we are hoping to make it a year when we get a lot more people coming out to explore what new and interesting things we can do with amateur radio.

73,

Dennis Santiago, NB6I

W6TRW Field Day Chairman



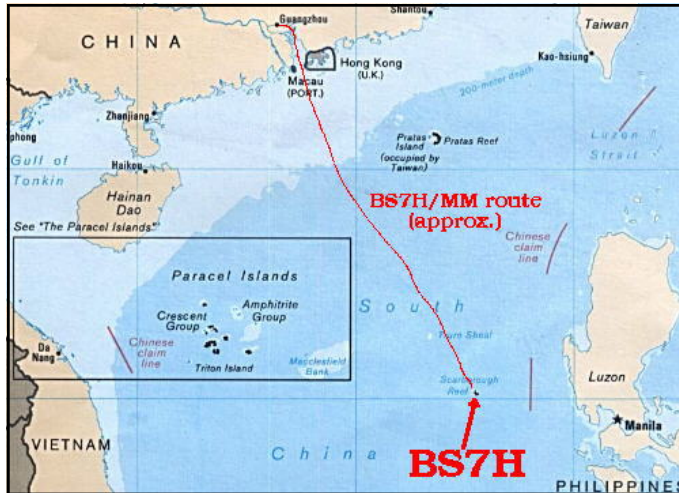
W6TRW Works The Rarest DXstation

April 29th, 2007

-----NEWS ITEM-----

W6TRW and two of its members Craig Gullickson N6ED and Pete Livingston W3CRI worked the world's rarest DX station!

Scarborough reef, a very small treeless coral atoll in the China Sea off the coast of the Philippines, was the site for a 10 day DX-pedition, starting on April 29th, and operating under the call BS7H.



'Man, he was booming on 40 meters—five nine plus,' Craig, N6ED reports. In fact, I (W3CRI) also worked him on two bands (40 and 20), but Craig worked him (and logged W6TRW's call as well) on 40, 30 20 and 17 meters. And indeed, last Friday morning at about 0630, he was coming in 599 on 40 meters. The pileups were the fiercest I have encountered in a long time, but the 40 meter beam certainly did its job—lobbing our signal into the China Sea with telling effect. Neither Craig nor I had to call long—we got through the immense pileup only after a few minutes.

The last time this godforsaken piece of coral was radiating was in 1997 and then, I've been told, the DXpedition ended under the guns of the Philippine navy in some sort of dispute. This time, however, alls ended peacefully.

Daytime temperatures were in the 100's; the island is no more than four or five feet above sealevel, and the rigs and operators received doses of salt spray along with plenty of solar photons. No natural cover. In short, it seems a hellish place.

But those are not the only hazards—. "There's rain, there's wind, there's lightning, there's piracy," as one member reports.

Antennas include a STEPPIR beam and verticals, although the 80 meter balloon-borne antenna didn't work because of high winds (An idea solution would be our phased array and the aerostat balloon which 'likes' wind because it provides lift and stabilizes the balloon). A reported 80 meter BS7H was a pirate.



The Shack Master!
Pete Livingston W3CRI



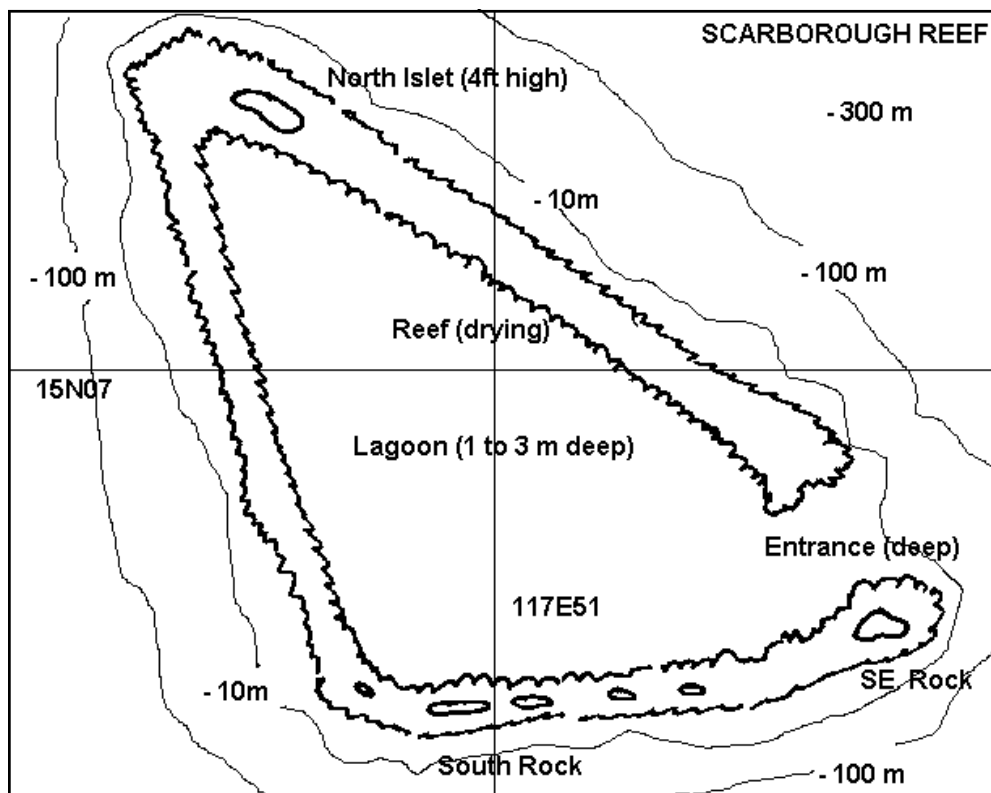
Craig Gullickson N6ED

W6TRW Works The Rarest DXstation

April 29th, 2007

Scarborough Reef

Latitude: 15° 07' N.
Longitude: 117° 45' E.



This is a map of the Reef showing the rocks on the bottom that are suitable for radio operations.

The B-17 Aluminum Overcast Visits Torrance Airport

April 13th - 15th, 2007

The Experimental Aircraft Association's B-17G-VE, serial number 44-85740 - nicknamed, *Aluminum Overcast*, was delivered to the U.S. Army Air Corps on May 18, 1945. Although delivered too late to see action in World War II, the airplane has an interesting history.

First Owner

Purchased as surplus from the military inventory for a mere \$750 in 1946, the airplane has flown more than 1 million miles. It has served as a cargo hauler, an aerial mapping platform and in pest control and forest dusting applications.

Return to Military Roots

The airplane's return to its military roots began in 1978, when it was purchased by a group of investors who wished to preserve the heritage of the magnificent B-17. The group, "B-17s Around the World," was headed by Dr. Bill Harrison. Their goal was to return the B-17 to its former glory.

Donation to EAA

The economic reality of simply maintaining a vintage bomber, let alone the cost of restoration, prompted the group to donate the B-17 to the Experimental Aircraft Association in 1983. Since that time, an extensive program of restoration and preservation was undertaken to insure *Aluminum Overcast* would be a living reminder of World War II aviation for many years to come. The restoration has taken more than 10 years and thousands of hours by dedicated staff and volunteers at EAA Oshkosh, Wisconsin, headquarters.

Aluminum Overcast proudly carries the colors of the 398th Bomb Group of World War II, which flew hundreds of missions over Nazi-held territory during the war. *Aluminum Overcast* commemorates B-17G #42-102515 which was shot down on its 34th combat mission over Le Manior, France, on August 13, 1944. Veterans of the 398th helped finance the bomber's restoration.

The Plane

When the airplane was sold in 1946, most of the original military equipment had been removed. Over the years, these items have been located, restored and returned to *Aluminum Overcast*. These include:

- The Norden bombsight located in the nose of the airplane
- Restoration of the navigator's position also located in the nose of the airplane
- Installation of the waist guns located on each side of the bomber
- Rebuilding the radio compartment, including original communications equipment
- Returning the airplane's floor to its original specifications
- Installation of a complete tail turret assembly
- Installation of a replica top turret just behind the pilot and co-pilot seats

The airplane was on display at the EAA AirVenture Museum in Oshkosh, Wis., until October, 1993 when it was moved to EAA's Kermit Weeks Flight Research Center for maintenance and restoration in preparation for its first national tour in 1994. The B-17 will eventually be housed in the EAA AirVenture Museum's "Eagle Hangar," which features numerous World War II aircraft and exhibits.

When *Aluminum Overcast* is on tour, aviation enthusiasts can actually walk through the airplane. If they wish, they can take a trip back in time and feel the might of this magnificent flying machine through the flight experience program. Half hour flights are available at all [Tour stops](#). Proceeds from the tour help keep *Aluminum Overcast* flying and will assist the continuing restoration, maintenance and preservation efforts of EAA.

Even those too young to have lived through World War II can appreciate the history associated with this airplane. The "Flying Fortress" was one of the airplanes that helped the Allies achieve victory in World War II.

The B-17 is an important part of both U.S. and aviation history. It can help us understand the technology of the times, the era in which the aircraft was developed and the human sacrifices which make today's freedoms possible.

The B-17 Aluminum Overcast Visits Torrance Airport

Photos by Stuart Gorsky K9STU



Winter Vacation 2006 – 2007 Nevada Road Trip



Somewhere in the high desert area of west-central Nevada

Yep, that's me your new Crosstalk editor Stuart Gorsky - K9STU. This photo of me was taken by W6TRW club member Wendy Khoo (W6NDY) during our last winter vacation.

A good portion of our “Nevada Road Trip” was spent driving on deserted two lane highways in the middle of “nowhere”. As expected cell phones worked very infrequently but my Yaesu 8800r, UHF/VHF mobile rig was as reliable as ever!



Before we left on our road trip I pre-programmed my Yaesu 8800r with a good number of west-central Nevada repeaters that were listed in my copy of the 2007 Repeater Location Guide purchase from HRO. I then added some repeaters along California's highway 395 and we were ready to go. Entering the repeater frequencies and PL tones was a breeze for me as some time ago I had purchased the Yaesu computer programming software and hardware serial cable for my radio. (I will talk about that in another Crosstalk article later) Having all those repeaters pre-programmed made Wendy and I feel just a little bit safer while driving on a lonely highway with the sun coming down and the temperature starting to drop. On more than one occasion we received good

advice from fellow hams on what town and/or hotel to stay in. Having a ham radio in the truck was most useful as local hams were very friendly and could be counted on to steer us to the best restaurants in town where the “locals” would be found eating. Along the way these same ham radio operators put us on to several interesting “sites to see” that were not to be found in the “AAA” or other guidebook's.



Nevada had it's share of interesting hotels!

Late one chilly afternoon Wendy and I were cruising along a deserted highway when the wind picked up and my usually very stable AWD Honda Element started to get blown around from side to side. I was monitoring my mobile radio when a ham came up on the local repeater and reported that local authorities were warning the general public of potential wind gusts expected to reach up to 70mph. Furthermore, the ham went on to report that authorities were recommending travelers find lodging for the night as quickly as possible as roads were expected to be shut down and cars and trucks could easily find themselves stranded on the side of the road.



Later that night winds were gusting up to 75mph

Winter Vacation 2006 – 2007 Nevada Road Trip

Wendy and I took heed of the warnings and with the guidance of our friendly ham we located a hotel/casino and rode out the storm in comfort. We were very fortunate to arrive when we did as shortly after we checked into the hotel it was filled up! It couldn't have been more than a half hour later when I looked out of my hotel window and saw that the two lane highway we just arrived on was now jammed with cars and semi-tractor trailers parked on the shoulder for the night. Thank you Mr. Ham Radio...



Remote Control Technology Today

by Neal Yamamoto



With advancements in battery chemistry, and surface mount component technology from the cell phone market, to electric motor and wireless video development in the surveillance arena, the radio controlled hobby is going through an exciting evolution. All of these developments along with the power of internet shopping create an economical hobby that all ages can enjoy.

Tighter restrictions on approved model aviation flying sites, and the increased need for real estate development have reduced the number of flying sites hobbyist can fly “wet” fueled model airplanes. This reduction started the desire for cleaner, and quieter methods of model aviation, and hence a revolution in the industry. All these events have snowballed into changes that can be seen throughout the R/C modeling community.

The primary focus has been in the power system for the model itself. The introduction of the brushless motor allowed for higher power and higher efficiency while reducing overall motor weight. These AC motors did not suffer the same heating issues that brushed motors had when dealing with high voltage power supplies. This in-turn made head way for the introduction of Li-ion power cells that would be substitutes for the ever present Ni-Cad, and Ni-mh battery chemistry. What started out as “hacking” old cell phone battery packs to provide lighter weight power supplies, has led to a revolution in the R/C market as a whole.



Today you can find li-ion battery technology in your child's free flight foam airplane that can be purchased at your local toy store, to R/C race cars, boats, and airplanes that can compete with “wet” powered vehicles.

While there are safety concerns with this new battery technology in how they are charged and discharged, the model suppliers, and battery manufacturers have provided consumers with safe battery charging equipment to mitigate this risk, and in most cases, incidences involving these batteries have been due to user error. It cannot be stressed enough that any interested individual read up on the proper methods and techniques for charging and discharging these types of batteries. With that said, these batteries provide such high power densities their capabilities out weigh their potential risks, such that they are being used in satellite power supplies, to children's toys. The typical voltage of a li-polymer cell is 3.6V per cell, and has the current

capacity past 2200mAh. When constructed in a series and/ or parallel configuration, these cells can provide some demanding models more than 1 kW of power. These cells have been constantly increasing their ability to discharge high levels of current. Early versions of this technology only allowed for the cells to discharge at 5C (the current discharge rating was 5 times the mAh capacity). Presently, the latest cells are able to discharge at 20C, and provide better voltages under this high load. Technologist, not being the lazy sort, have been working on a more robust chemistry that still maintain high power density while trying to keep the cell weight low. While the early versions of these cells are still being evaluated by the modeling community, they are very promising. The vendor has made claims that the cell can be physically damaged without causing the volatile reaction that some li-polymers exhibit. These notes are not words to fear, but rather to be informed on this cell technology. R/C car manufacturers are even using this battery in their 1/10 and 1/16 on and off road vehicles. These cars, buggies, and trucks are achieving up to 60 mph (not scale) utilizing brushless motors and li-polymer cells. Since R/C cars typically take more physical abuse than a model airplane (crashes excepted) the manufacturers are incasing these packs in a hard case to provide impact protection. Anyone interested in this aspect of the hobby for their application can find endless amounts of information on the internet.



Besides all this power management technology, the radio controller manufacturers are blazing new paths in the industry as well. The introduction and marketing of “park flyers” has brought other concerns to the scene. More and more people are flying these smaller planes in local parks, and schools, so much so, that the AMA (governing body of model aviation), has started to sanction fields specifically for electric, and park flyer type vehicles. With this increase in active hobbyists, as well as more scattered electric only fields, the concern of transmitter interference is utmost on peoples minds. Receivers, utilizing DSP (digital signal processing) have been able to improve receiver fidelity as well as making them “smart”. Some manufacturers are able to initialize the receiver such that it will only process signals from your transmitter. The receiver recognizes your distinct signal, and in some cases recognizes the amount of channels you are transmitting to

Remote Control Technology Today

make this identification. In the case of some sort of RF swamp, or interference, the manufacturers have also provided the receiver as fail safe mode where it will revert to a pre-determined setting. To add even more nifty features, if the processor sees a bad frame of data, it will hold the last good frame until a new one can be verified. There are pros and cons to this new technology, but the fact that these features are being implemented in existing 75 MHz carrier controllers shows the leaps the hobby has made in the past few years.



Even with all these features, some still find the 75MHz band congested. Seeing a need for something better, manufacturers have gone to the 2.4 GHz band and utilized spread spectrum technology. These next generation transmitters and receivers are forging new ground in the R/C market, and creating a new revolution in transmitter technology. These spread spectrum transmitters are going thru their second iteration, and making their presence known in both the air and ground markets. While I cannot do this new technology justice in this overview, links are provided for anyone interested in further investigating this exciting development.

Along with all these new developments, the interest of aerial video and photography has hit a new high as well. Small 2.4 GHz TX/RX are being mounted on model airplanes for all sorts of applications. Some folks are using them to take pictures for their real estate efforts, other are using video goggles to fly the airplane in a first person view. Combine this video technology with GPS telemetry and you have a whole new aspect to model aviation. This is a brief snapshot of what is going on in the hobby scene today. So much is being done in this little community on a daily basis.

With all these innovations in the industry, the R/C hobby is at a new level. All this new technology can be yours at fairly economical prices. A RTF (ready-to-fly) model, which includes, a radio, airplane, battery, and charger (in most cases), can be had for as low as \$149. While there are some kits that can be had for cheaper, this nominal price range seems to have a few options to choose from. Note that, these packages are beginner sets and might not have the newest technology, but they are a sure way to get into the hobby to see if it matches your specific needs. The internet has provided the community with a means to learn, develop, and share ideas, achievements, and my favorite, bargains! With the power of the internet, discounts on

these products can be found nation wide, and be delivered on your doorstep within a week.

R/C is a fantastic activity for adults and children to participate in. It can provide relaxation, education, and just plain fun. With all the technology that has been adapted to this hobby, it has never been easier to get involved. My hope is that anyone interested take a look at what is going on to see all the possibilities. Below are some links to help you on your adventure into a new world of fun.

www.Rcgroups.com -good source for info

www.rcuniverse.com- another great discussion forum

www.blackwidowav.com -Provider of Video systems

www.rc-cam.com - Great contributor to AP (aerial photography) community

www.spektrumrc.com - Provider of 2.4GHz radio control systems

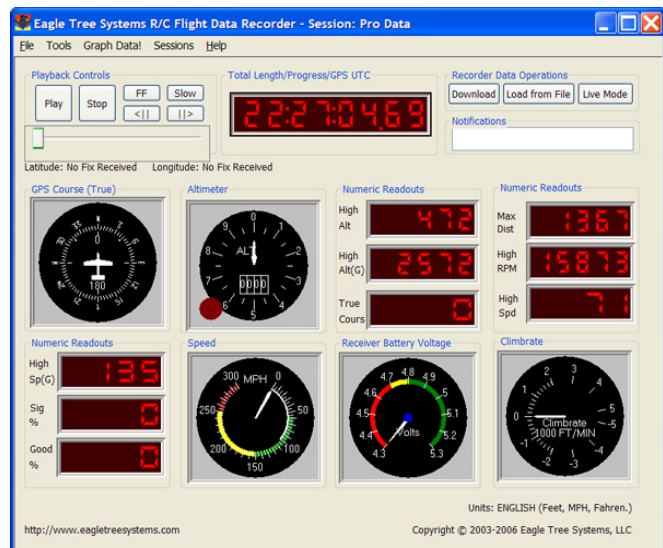
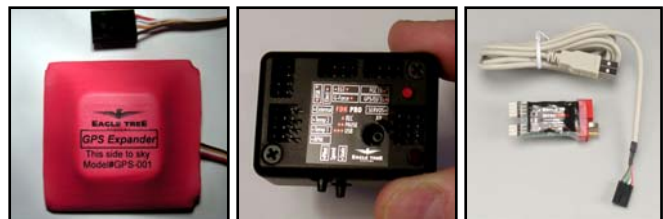
www.xtremepowersystems.net - Provider of 3rd party 2.4GHz radio modules

www.towerhobbies.com - Internet distributor/sales

www.hobbypeople.net - Local hobby store chain

www.mtahobbies.com -Local hobby shop specializing in helicopters

www.modelaircraft.org -Governing body of model aviation



Telemetry Systems



NGRC-SPSC Amateur Radio
Association

NGRC Amateur Radio Association
Bldg. S MS/1156
One Space Park Blvd.
Redondo Beach, CA 90278
Phone: 310-813-8569
E-mail: w6trw@amsat.org

www.w6trw.com

W6TRW 2-meter Repeater (Open Repeater)

145.320 (-600) PL 114.8 Hz

*W6TRW 70cm Repeater (Open Repeater /
Closed Autopatch)*

447.000 (-5 MHz) PL 100 Hz

W6TRW 23cm (1.2ghz) (Open Repeater)

Revised 1283.075 (-12mhz) PL 136.5 Hz

*W6TRW-3 Packet Radio Internet Gateway and
BBS (1200 Baud Port)*

146.745 (-600)

ELECTED OFFICERS

President	Bob Briggs	KD6WYQ	O1 / 1250	(310) 813-2622
Vice President	Greg Shreve	KE6YEX	R2 / 1120	(310) 812-9347
Commissioner	Mike Hamada	KF6UCN	M5 / 0560	(310) 814-2628
Secretary	Jim Winterroth	KF6IMA	R11 / 1053	(310) 812-2844
Treasurer	Wendell Young	KE6ASC	E2 / 9043	(310) 813-7691

APPOINTED STAFF

2m Repeater	John Cheatham	KE6OJM	R9 / 2896	(310) 813-5903
447 Repeater/Autopatch	Duane Park	N6DSP	M2 / 2200	(310) 813-2824
Activities Chairperson	Greg Shreve	KE6YEX	R2 / 1120	(310) 812-9347
Crosstalk Editor	Stuart Gorsky	K9STU	R5 / 1160	(310) 812-0255
Emer. Comm. Coordinator	Connie Warner	WA6JLD	M2 / 2500	(310) 812-5511
Librarian	Jim Harrison	K6OUE	R6 / 2541	(310) 814-1937
Membership Chairperson	Open			
Past President	Wendell Young	KE6ASC	R3 / 1086	(310) 813-7691
Publicity Chairperson	Rod Scott	KE6PI	R1 / 1044	(310) 813-1493
QSL Manager	Craig Gullickson	N6ED	R6 / 2529	(310) 812-5389
Shack Master	Pete Livingston	W3CRI	R1 / 1096	(310) 813-9550
Swap Meet Manager	Wendy Crawford	KQ6CG		
Technical Chairperson	John Cheatham	KE6OJM	R9 / 2896	(310) 813-5903
Training Chairperson	Bryan DeAro	KN6OW	120 / 1020	(310) 812-4789
Trustee of W6TRW License	Pete Livingston	W3CRI	R1 / 1096	(310) 813-9550
Webmaster w6trw.com	Duane Park	N6DSP	M2 / 2200	(310) 813-2824