

Sierra Signals

Sierra Foothills Amateur Radio Club
Auburn, CA
An ARRL Special Service Club

<http://sf-arc.org>

October 2006

P.O. Box 1005, Newcastle, CA 95658

The Devil is in the Details

(Reported by Casey, W7IB)

Have you ever noticed how many neat things in ham radio are not quite as easy as they appear on the surface? Simple stuff like getting on the air – you go out and buy a radio, and a power supply, old or new, right? Then you just plug it in and the whole world opens wide for you to work, right?

Sounds simple enough doesn't it? But what mode will you operate? Will it be SSB, AM, FM, CW, or a more "modern" digital mode, or RTTY? Will you work satellites, moon bounce, or ATV (fast or slow)? And will a computer or other additional auxiliary equipment be necessary. How about a mic, or a key - ya know an input/output device? Well with all of that resolved you're

ready to fire it up and c-o-m-m-u-n-i-c-a-t-e, right!

Hmmmmmm, what about an antenna and feed line(s)? Jeez, that opens up a whole other can-of-worms. The world of bands and bandwidths and gain and rf interference and grounds, both station and radio frequency. And, Lord help you if you're

(continued on page 2)

At the Key of S.F.A.R.C.

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Satellites: Greg, KO6TH

History: Gary, KQ6RT

Digital/VE: Rob, WW6G

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RESOURCES

REPEATERS

145.430 (-0.6 MHz/PL 162.2)
440.575 (+5.0 MHz/PL 94.8)
223.860 (-1.6 MHz/PL 100.0)

CLUB NET

Thursdays, 7:30PM, K6ARR/R
145.430

CLUB MEETINGS

Second Friday of the month,
7:30PM at the Library, 350
Nevada St, Auburn CA

CLUB BREAKFAST

Last Sat of the month at Susie's
Café, Cirby at Riverside, Roseville
– 8:00 AM

NET CONTROL OPS

Dave Jenkins, WB6RBE
Gary Cunningham, KQ6RT
Joe Sylvia, KF6OQY
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2006 Calendar of Events

(Operating Events in Italics)

[Dates are local unless otherwise indicated]

Oct 7-8	<i>Calif. QSO Party</i>
Oct 13	Regular Meeting-White Elephant
Oct 14-15	<i>Oceania DX</i>
Oct 15	<i>No. Amer. Sprint (RTTY)</i>
Oct 28	Club Breakfast
Oct 28-29	<i>CQ WW DX (RTTY)</i>
Nov 10	Regular Meeting-Elections
Nov 25	Club Breakfast

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Forty Years Ago At The SFARC

(Reported by Gary, KQ6RT)

October 19, 1966

Five members were present. Had an eyeball QSO and then went home. Plan on having movie next time.

Dick

73,

Gary, KQ6RT

Devil in the Details

(Continued from front page)

going to put it in the old pickup truck!

Simple, huh? Buy the book, take the test(s) get some gear and get on the air, right? There's just a lot of minutia to consider, kind of like the rest of life. Ya just don't see the whole picture until you get mired down in the details!

I recently had the opportunity to join Bob Vallio, W6RGG for lunch. Bob is the ARRL Pacific Division Director, which means he's one of the key contributors to the direction process of the League. I talked to him about some stuff that they're doing in Newington that I question, like why are they spending so much time fiddling with BPL when it looks like Part 15 devices are such a threat? [While I am a Life Member of the ARRL I don't always, and sometimes don't often, agree with their approach. I believe that healthy disagreement strengthens an organization, not weakens it. – more about "healthy disagreement" later.]

Bob responded with what I thought was going to be the "League Line", but as I listened, and as I've thought about it since, it makes a good bit of sense. If you've really followed the BPL "wars", as I trust most (including yours truly) have not, you will see that the FCC has been less than straightforward in the execution of their duties in this regard. The current QST (October 2006) has some interesting commentary about this issue [see *It Seems to Us*, entitled "Pretending to Sleep"], but maybe I can summarize the answer 'RGG gave me... Throughout the process the ARRL labs, among others, government and private alike, have brought interference claims to the attention of the FCC. There have been many cases presented documenting interference to segments of not only ham radio, but air traffic, public safety, and commercial interests as well. True enough, a few have been acted upon, but many have been ignored, or put on the back burner!

I guess Bob's answer and the ensuing thought comes down to this: *is a government agency that is chartered with obligations under international Radio Regulations and the Communications Act able to change its commitments and obligations simply by issuing a Memorandum Opinion & Order (MO&O)?* I would add the observation that a government

agency is funded by *our* tax dollars, which means that they work for us!

If you've been watching the folks in Gettysburg, and you should be, they have become something of a profit center under the current administration, and perhaps the last one as well (can't be sure). They are very busy finding "little bits" of spectrum and auctioning them off to the highest bidder as a way to produce revenue... and when you look at the total spectrum, we have a lot of it! Is this *their* job?

So, we learn that details may well be the Devil's domain in many areas of our day-to-day lives! I mentioned "healthy disagreement" earlier. In my thinking, the ability to enter into heated discussion, in order to arrive at a better solution is at the core of the democratic process. The voters can completely change the direction of government by voicing their opinions and then showing they're serious by voting! I feel that this basic truth has been forgotten by many of us, and that the fire needs rekindling in many segments of our daily lives.

"Where is he going?" you might ask.

"To the conclusion and the heart of this article!" I respond.

We, as duly licensed ham radio operators, have an obligation to protect ourselves from "encroachment" by those who would render us trivial, and this requires attention to the demonic details. The government is clearly not looking out for our best interests - we cost "them" time and money (but aren't we really them?) Many groups of amateur operators pop up, some even "incorporated non-profits", and are openly and aggressively critical of the ARRL, from the outside! But, what are they actively doing at the highest levels to address and try to resolve the issues that affect us? What is their lobby structure and their action plan? Some, perhaps many, are even Life Members, but what are they doing to change the "institution" that the League is from the inside, for the greater good?

My premise is really simple... study, take the test(s), get the license, obtain a radio, figure out your mode, put up an antenna, and if you're not an ARRL member, join now! If you are a member, get into the details and make your thoughts known, now and continuously. Join, be, do, or the Devil, and maybe the government, will!

Contesting News

(Reported by Fred, K6DGW)

Selected Contests for October 2006

Calif. QSO Party: (7 Oct 1800Z – 8 Oct 2159Z) www.cqp.org

Oceania DX: (14 Oct 0800Z – 15 Oct 0500Z) www.oceaniadxcontest.com

North American Sprint (RTTY): (15 Oct 0000Z – 04000Z) www.ncjweb.com/sprinrules.pdf

CQ WW DX (RTTY): (28 Oct 0000Z – 29 Oct 2400Z) www.cqww.com

10-10 Fall CW: www.ten-ten.org

Contest Comments

The "Big One" this month is the Cal QSO Party (CQP), sponsored by our own No. Cal. Contest Club (NCCC)! For those of us California stations (or anyone who can become a California station for the weekend), this may be the most fun you can have on the radio. Phone and CW, all bands (160 – 6) except 30m, 17m, and 12m. You can work a station on each band and mode. Multipliers for us are the States and Canadian Provinces. Single ops can operate 24 of the 30 hours (you'll want to take your horizontal break in the very early hours on Sun AM PDT). Everyone wants to work you! They want your QSO on as many bands/modes as possible, so your job is to be there and call CQ. Mults for non-CA stations are the 58 CA Counties (see the web site for abbreviations). You can also work CA stations for QSO credit, and you get a CA mult for the first one you work. The rules require that you copy and report the county in the log, however.

Placer County may be rarer than you think. There have been years when the only Placer stations on the air were Jettie, W6RFF; Jack, KF6T (then W1FEA); and me. Cool T-shirts, lots of awards, and a barrel of fun!

Other Ramblings

9K2/KB9LLO: Last month, I mentioned one of our adopted



troops, Capt. Drew Neve who is in Kuwait. In his last email, Drew included a few pictures, and mentioned that he just passed the "1,000 hour mark." For those who have never experienced military remote and/or combat duty, time runs backward in such situations, and 1,000 hours means he has 1,000 hours to go. It's called "getting short," and there are hundreds of "short jokes" with which you can annoy the crap out of your comrades (e.g. "Just a half cup of coffee please, I'm too short for a full one"). A thousand hours is 41 days, so he'll be heading home in early November.

Drew has managed a few QSO's, mainly with eastern Europe and I think one VU. His KX1 with 6 AA dry cells will make about 2 watts. He started out trying dipoles and Inverted-Vee's, however he lives in a huge sandbox with essentially no electrical ground anywhere close. As a result, these antennas exhibited mainly their free-space patterns (the big donut), with much of the energy going straight up and straight down.

His base is very big and sprawling, and in one corner, he found what he thinks was a little race track for RC model cars, with a little "press box," apparently built by folks from some unit that

has gone home. He never saw it being used, and it had a very long 2x4 sticking straight up from the press box. Using that, he constructed a full-wave 20m loop as a diamond.. Fed so it produces a horizontally polarized wave front, it is pretty much insensitive to where the electrical ground is, and it worked much better. Full wave loops exhibit a feed impedance at the corner of about 120 ohms or so, so you can use a 2:1 balun and 50 ohm coax for a very good match. They make great field antennas, and radiate perpendicular to the plane of the loop.

73 for this month,

Fred K6DGW

September Meeting Minutes

(Reported by Leslie, K7NYE)

Minutes of the SFARC Board and General Meeting, September 8, 2006 at the Auburn, CA main library:

Board of Directors meeting began at 6:50 PM with quorum of officers in attendance. New business discussed included planning for the new SFARC board for 2007 and upcoming elections. Decision was made to share more detail about actual time involved in a board volunteer position. Planning for upcoming White Elephant sale and the Annual Christmas dinner. To attend Holiday party, consensus of the board was that it was for members with guests only. Decision to ask volunteers for set up and clean up committees. Did a review of the recent ARES event (re: Ralston fire in foothills and response to this request for support. Board meeting was adjourned at 7:31 PM.

SFARC General Meeting Minutes:

7:32 PM Meeting started by W7IB, President, Casey McPartland; Meeting started with Pledge of Allegiance, Introduction of SFARC Board Members and introductions made of all club members and guests, total of 32 in attendance; Officer reports were given by President, Treasurer, Secretary; VP absent. Committee reports were made. These included ARES, VE and Satellite reports by the designated representatives. Repeater report was not provided, as representative was not present. Announcement made that W7IB, Casey, was appointed Assistant Section Manager for Sacramento Valley ARRL Section. Jettie Hill, W6RFF, Sacramento Valley ARRL Section Manager has tendered his resignation effective Nov 30th. W7IB will be filling out Jettie's term from Dec 1 to Sept 2007 elections. Mention was made of upcoming Pacificon in San Ramon, October 13, 14 and 15th. The 2006 annual Christmas dinner was discussed and volunteers were requested for set up and clean up. Also, announcements were made about the upcoming Board elections in November, with vacancies for President, Vice President and two director positions. Members were also encouraged to join ARRL.

New Business:

No new business was introduced.

Presentation:

There was no formal presentation, but discussion among the members present centered around the benefits of volunteering with ARES and recent events with the Ralston fire near Mosquito Ridge. The club had several members actively participating in the response to support the county and ARES in coordination of communications during this emergency.

Gene, KG6NYH held the monthly Drawing. Meeting was adjourned approximately 9:30 PM.

Respectfully submitted:

Leslie, K7NYE

Secretary

New CubeSat Launched

(Reported by Greg, KO6TH)

The Hokkaido Institute of Technology has successfully launched their first satellite. Known as "HIT-SAT", the little 4-inch cube was launched on September 22nd from the Uchinoura Space Center in Japan. It was placed in a 250km by 600km sun synchronous orbit by the M-V-7 rocket.

The orbit of 250 by 600 means that the little satellite has a widely varying view of the planet below. At its perigee (low point) of the orbit, 250km is only 155 miles up (for those of us who can't relate to kms). That's lower than the space station, lower than the usual orbit of the Shuttle; in fact, it's lower than pretty much anything else that's been around a while. That means that you'd have a good chance of seeing it, if it weren't so small. The high point is 600km (372 miles), more than twice as far away.

Why this matters is that there are several competing forces at work, and your ability to work another station via a satellite is a result of your station's equipment and these laws of physics. The higher up a satellite is, the more of the planet below it can see. We've all seen the pictures of Earth, taken by astronauts on the Moon. They see basically an entire half of our world. Now compare that to the view you have from, say, an airplane. From that altitude you can see maybe a few dozen miles in any direction. The higher the airplane, the larger the view. The critical thing is that most satellites use VHF and higher frequencies to communicate, so they are limited to line-of-sight. If they can't see us, we can't work them! So, to work a station a long way away, you need to use a satellite that is farther away from the planet. When I worked a station in Perth, Australia, from here, the AO-40 satellite was about 36,000 miles up in space, and with a considerably longer "slant range" (the distance from me to the satellite – think of a triangle with you, the satellite, and the point on the Earth directly below the satellite).

But, the farther away the satellite is, the harder it is to hear. Especially with a satellite so small, power is at a premium. Everything needed to run the satellite's systems has to be powered from an about 16 square inches of solar cells. HIT-SAT's beacon transmitter operates at a power level of 100mw, about that of a typical HT on its low power setting. So, to hear the bird down here will take a little gain down on your receive end, and the farther out the satellite is, the more gain you will

need. Twice the distance requires 6db more gain for the same signal. A satellite of this type will typically require a small beam antenna for reception, preferably with a preamp installed at the antenna feed point. AO-40 required a small dish, with a preamp, and this was not armchair copy.

An elliptical orbit will typically put the satellite close to Earth in a different place each orbit. One orbit it may be at perigee over California, and the next orbit it will be over the ocean and somewhere higher up. So, using such a satellite to contact another station means waiting for the orbit to align where the bird is high enough and in the right place between the two stations that it can see both of them at the same time, and close enough that both stations are capable of working it. Oh, and also that both operators are awake and in their shacks at that time.

There are many different satellites currently in orbit, and the variety makes for interesting combinations of distance worked and station setup. All it takes is a little patience, a satellite tracking program, and perhaps a little luck to work the station of your choice.

HIT-SAT is currently being checked out by its design and launch team. It carries a CW telemetry beacon on 437.725 MHz, which broadcasts the satellite's health and status every 40 seconds. When enabled, the bird also carries a transponder with an uplink on 145.980 MHz and a downlink on 437.425 MHz. Take a listen!

Greg KO6TH

White Elephant

SFARC Annual White Elephant Sale, October 13, 2006, 7:30pm

The Sierra Foothills Amateur Radio Club will hold its White Elephant Sale at the Auburn Library, 350 Nevada Street in Auburn, CA. Come on out and enjoy a fun evening at our annual fund-raiser!

Bring your best unused and underused ham radio-related *stuff* to be sold at auction. All proceeds go to the club and are used to provide funding for the Annual Christmas Dinner in December. Please be aware that removal of unsold items at the end of the evening is the sole responsibility of the individual(s) that brought them.

We look forward to seeing everyone there – there are usually some real treasures at a great price, so come prepared to take home a good value!! Remember to bring the checkbook or some cash... See you there!

Unclaimed Badges

Our Treasurer, George, has several badges that have been ordered, but no one has picked them up. If you are one of these

folks, please see George at the next meeting and pick up your badge.

Tom KJ6MP
 Art K6KGY
 Eric KE6IKS
 Tim KF6BVU
 John KE6DK
 James WA0HYS

Amateur Radio Fills Communication Gap During Weekend Flooding

(Reprinted from ARRL Letter, Vol 25, No 39)

When telephone and Internet service in Kentucky fell victim to flooding over the September 22-24 weekend, Amateur Radio Emergency Service (ARES) teams took over to bridge the communication gap. Kentucky ARRL Section Emergency Coordinator Ron Dodson, KA4MAP, says the deluge, the product of up to nearly 10 inches of rain in Kentucky and Southern Indiana, resulted in states of emergency in 19 Kentucky counties and 12 cities, including Frankfort, the capital. Dodson says the high water, which evoked memories of severe flooding in March 1997, left at least 10 dead and many others homeless.

"All phone communications to the state emergency operations center (EOC) went down as early as 2 AM Saturday, returned and then went out a second time around 5 AM," Dodson reports. Emergency managers contacted Dodson to activate the Kentucky Emergency Net on 3.993.5 MHz to provide support communication between the EOC and Kentucky's 120 counties.

Dodson says telephone service in the EOC came back around mid-morning on September 23, although the Kentucky Emergency Net remained in operation as heavy rainfall began in western Kentucky.

"Within minutes, Shelby Ennis, W8WN, in Hardin County reported via the K4ULW 146.625 repeater that all telephone service, including the Hardin County E-911 facility, had gone down," Dodson said. "Cell phones soon overloaded and also shut down, basically stranding the whole county without outside contact except via Amateur Radio." He explained that conventional telephone systems failed in Hardin County because the provider had installed all its systems in a basement area that flooded.

For the next several hours, Dodson said, communication between the state EOC and Hardin County took place via the Bullitt Amateur Radio Society's KY4KY 146.700 repeater in Brooks. "The American Red Cross headquarters in Louisville also used this machine to communicate with their shelter and Hardin County emergency management," Dodson said. While the KY4KY repeater supported command-and-control communication, other operations took place via the W4BEJ 146.98 repeater in Elizabethtown and the neighboring K4ULW 146.625 repeater in Meade County.

Communications Supervisor Bob Stephens, WA4CMO, of the Kentucky Department of Military Affairs said the Kentucky Emergency Management command vehicle was positioned adjacent to the state EOC to provide communication on both Amateur Radio and MARS frequencies. Pat Compton, KF4FMZ, and Bull Uschan, K4MIS, staffed the Amateur Radio side, while Richard Howe, KB5WCH, represented the Civil Air Patrol during the Saturday operation, which continued for several hours.

"We operated all systems during the afternoon and provided critical communication between the EOC and Hardin and Meade counties," Stephens reported.

The American Red Cross summoned members of ARES District 6 -- the Louisville/Jefferson County Metro area -- to assist with damage assessments and to maintain communication with the Hardin County shelter operation. According to Jefferson County Emergency Coordinator John Hesse, KF4IZS, those operations continued on Sunday as additional damage assessment details deployed in Louisville and in Fisherville in Spencer County.

The Franklin County Chapter of the American Red Cross also contacted Woodford County EC Jerry Mueller, KC4WZO, Sunday morning seeking Amateur Radio volunteers to support communication in the flooded Millville area. "The Red Cross had three disaster relief teams in the Millville area, and cell phone communication was not reliable," Dodson said.

Paul Harrington, KB4ENQ, Rob Hutchinson, KI4ODT, and Mueller responded, joined by Compton from the Capitol Amateur Radio Society. Hutchinson and Compton went to Millville for several hours to provide communication for the Red Cross and to help deliver meals, drinks, ice and supplies. Harrington and Mueller remained at the Red Cross Chapter to handle net duties in case communication assistance was needed in another area.

Dodson said Stephens told him afterward that Kentucky Adjutant General Lt Gen Donald Storm and Kentucky Division of Emergency Management Director Maj Gen Maxwell Bailey "were pleased with the way Amateur Radio functioned in providing communication when all else failed. They extend their thanks to those amateurs who gave of themselves in this effort."



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