

Sierra Signals

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

<http://sf-arc.org>

August 2006

P.O. Box 1005, Newcastle, CA 95658

CubeSat Launch Fails

(Reported by Greg, KO6TH)

In the first failure of a Dnepr rocket since 1988, the July 26 launch of a dozen Ham radio-carrying "CubeSats" ended in disaster when the main engine shut down early. It appears, sifting through the scattered reports, that at the 73 second mark in the initial stage's burn, something wrong was detected in the main engine. An emergency shutdown was initiated at 86 seconds, just short of the engine's normal burn time. Failing to complete the first stage, the second stage did not start, and the rocket and satellites came crashing back to Earth. Ironically, the rocket that failed was a replacement for the originally planned launch vehicle. That replacement, done in June, was ordered when a problem was detected in the original rocket's flight control system.



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REPORTERS

Satellites: Greg, KO6TH

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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

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Joe Sylvia, KF6OQY

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Along with the university-led Ham satellites there were other payloads on board, for a total of 18 satellites lost.

The Dnepr rocket is a converted ICBM, with satellites instead of nuclear warheads mounted at the top. They are still launched from underground silos, this one from Area 109 of the Baikonur Cosmodrome in Khazakhstan.

(continued on page 2)

2006 Calendar of Events

(Operating Events in Italics)

[Dates are local unless otherwise indicated]

Aug 5-6	No. American QSO Party (CW)
Aug 11	Regular Meeting
Aug 12-13	Worked All Europe (CW)
Aug 19	Club Picnic
Aug 19-20	No. American QSO Party (SSB)
Aug 26	Club Breakfast
Sept 8	Regular Meeting
Sept 30	Club Breakfast

We encourage members to receive Sierra Signals via email to save the Club the cost of reproduction and mailing

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Forty Years Ago At The SFARC

(Reported by Gary, KQ6RT)

August 17, 1966

Les and Dick only ones who put in appearance.

May be Les' last chance to attend before starting at U.C. Berkeley.

73,

Gary, KQ6RT

Cubesat

(Continued from front page)

Reports conflict on the crash site, with some putting it 189.6 km from the launch site and "6 km northeast of Tagai winter pasture", and others only 25 km from launch, on land. A team of some 35 people with equipment has been sent to the crash site to investigate. Reports are that no one was hurt in the crash.

Another Ham-carrying CubeSat launch is scheduled for September. That launch is slated to carry 7 CubeSats; two from Cal Poly, one from the University of Louisiana, one from the University of Sergio Arboleda, and a large (triple-cube) satellite from Stanford. There is also a CubeSat built by Boeing, and one from the Aerospace Corporation. With the launch failure this month, it is unknown if the September schedule will be maintained. I'll keep you posted.

73s,

Greg KO6TH

Contesting News

(Reported by Fred, K6DGW)

Selected Contests for August 2006

North American QSO Party (CW): (5 Aug 1800Z – 6 Aug 0600Z)

Worked All Europe (CW): (12 Aug 0000Z – 13 Aug 2359Z)

North American QSO Party (SSB): (19 Aug 1800Z – 20 Aug 0600Z)

Contest Comments

Summer is a fairly slack time on the contesting calendar although a couple of really fun contests do brighten up the August scene:

North American QSO Parties: We've covered these before however they are a great deal of fun and don't take up the whole weekend. The exchange is "a name" and your state or province. Rules are at the National Contest Journal Website www.ncjweb.com/naqprules.php

Worked All Europe: Many contests follow a fairly simple recipe in their exchanges ... anything from just a signal report (always 5NN or 59!), to a serial number and some location identifier, and possibly a name. ARRL Sweepstakes probably has the longest exchange in the form similar to a radiogram header, and Field Day is your entry class and ARRL section. WAE has a different "wrinkle" in the form of QTC's. The object for us here in the colonies is to work as many EU stations as we can. The multipliers are a little complex (see the rules), but the real addition is the QTC. A QTC is a short message you send to an EU station that lists the time, callsign, and serial number of your past EU QSOs. You can include a QSO once, and you can't send it to any of the stations in the QTC. Rules are at www.waedc.de

This all sounds complex, and it used to be, however most of the common logging programs take care of it automatically for you now. As the contest moves on, EU stations will begin querying you, "QTC?" If you have any QSO's that haven't yet been reported to someone (your logger tells you this), you send them as indicated above (your logger does this for you when you tell it to). Lots has happened in Europe over the last decade or so with new DXCC entities arising from the breakup of Yugoslavia and Czechoslovakia, collapse of the Soviet Union, and other political changes. WAE is a great chance to pick up some new ones. Summer propagation has put EU, Middle East, and N. African stations louder than our east coast, and the nearly spotless sun seems to enhance this effect.

Other News:

WRTC Results: The World Radiosport Team Championships took place during the IARU contest on the weekend of 9 July from Florianapolis, Brazil. Conditions were weird, at best. Except for HC8N (Galapagos Is.) who is perennially camped under my antenna, everything south of the equator were whispers at best, and missing in action in most cases. The usual crush of LU's, CE's, and HK's just weren't there. On the other hand, Europeans, Middle East, and Asia were very strong. I decided to stick to CW in the hope that I might improve my meager IARU scores from previous years. It worked, sort of ... SSB is very hard having left most of my hearing on the other side of the planet ... but the gain wasn't enough to put me anywhere close to the Top Ten!

The WRTC-2006 Gold was won by the Canadian team of VE3EJ/VE7ZO. Americans took Silver (N6MJ/N2NL – both Californians) and Bronze (K1DG/N2NT), and the Ukrainians and Italians took fourth and fifth respectively. There were some interesting goings on during the contest, the complete story is at www.arrl.org/news/stories/2006/07/14/100/

ARRL Logbook of the World (LoTW): LoTW has been operational now for several years, and is beginning to really have an impact of achieving various awards such as WAS and DXCC. It started slowly, but more and more DX stations are navigating the set-up process (a bit brutal for them), and I'm finding my DXCC totals rising every time I upload a new set of QSO's (that's not automatic – you do still have to work them!). Probably the largest difference between LoTW and other on-line QSO/QSL databases (e.g. eQSL) is that great pains have been taken to assure integrity of the data. Of all the possible integrity issues, assuring that an uploaded log really came from the station that claims it is probably the largest.

LoTW approaches this issue with a digital signature (DS). A DS is really just a form of asymmetric cryptography, where so-called one-way mathematical functions are used to generate two related keys. You make one of them public, available to everyone, and you keep the other one secret. For secure communications with Casey, I would look up his public key in a directory (on-line key server), and use that key to encrypt the message. Once encrypted, the only way to decrypt it is with the secret key, and only Casey has that.

For digital signatures, I first create a short “message digest” (MD – usually 128 bits long) from my message (my Cabrillo log in the case of LoTW) using a public algorithm. I then encrypt that MD using my secret key, and send the message and the encrypted MD to Casey. He computes the MD from the received message (remember, the algorithm is public), and then decrypts the MD I sent along with the message using my public key and compares them. If the two MD's match, he is assured that I sent the message, and that it hasn't been tampered with enroute since the only way he can use my public key to successfully decrypt the MD I sent to him, is if it was originally encrypted using my secret key, and only I know that.

LoTW provides software called “TQSL” for Trusted QSL to do all of this for you. The cryptographic keys are contained in a “certificate” issued to you by LoTW after assuring that you really are who you claim to be and you are the person they're sending it to. For US hams, they do this via the FCC's ULS database and your address as shown in that database. They also provide software (“TQSL Cert”) to manage your certificates. Certificates expire periodically, however, you don't have to go through the set-up process to renew it. You just use the software to create a new certificate request and digitally sign it with your current (but not yet expired) certificate. Once set up, it is harder to describe it than to use it.

www.arrl.org/lotw is the place to start the process, download the software, obtain your certificate(s), and start uploading logs. I've currently got around 22K QSO's loaded, and about 15% of those are confirmed. I think it's worth the small effort if you are at all interested in chasing DX and other awards.

73 for this month,

Fred K6DGW

July Meeting Minutes

(Reported by Leslie, K7NYE)

Minutes of the SFARC Board and General Meeting, July 14, 2006 at the Auburn, CA main library:

Board of Directors meeting began at 7:10 PM with quorum of officers in attendance. No new business was discussed, but old business was brought up for review. Field Day was reviewed briefly and was deemed a success. Mention was made of upcoming club events, including the club breakfast on July 29th and the next club meeting on August 11th. Discussion also centered on preparations and additional supplies necessary for the upcoming Club Picnic on August 19th in Rec Park in Auburn. Joe, KF6OQY presented the board results of several inquiries he made recently regarding an “introduction to amateur radio” event for the public. The results of contacting several businesses in the Granite Bay area to be sponsors of a site were unproductive at this time. Board meeting was adjourned at 7:25 PM.

SFARC General Meeting Minutes:

7:38 PM Meeting started by W7IB, President, Casey McPartland; Meeting started with Pledge of Allegiance, Introduction of SFARC Board Members and introductions were made of all club members and guests, total of 36 in attendance; No officers reports were given, as the VP and Treasurer were not present and there was no new business to be reported by the Secretary. Committee reports were made. These included ARES, VE, Repeater and Satellite reports by the designated representatives. The primary topic of the meeting was to review the results of field day and those that attended the SFARC Field Day at Nyack presented the highlights. Mention was made of the upcoming dates for club events- the club breakfast, the next club meeting and the club picnic. Marianne, KE6EST gave the club feedback on a second test for the APRS for the SOS sweep riders for the Tevis and Western States run. The test results were generally positive, but it was determined that without an exterior antenna on the tiny trackers, the satellite was not able to pick up the signals in the deep canyons. Marianne suggested that further tests will need to be done in the future and additional money to purchase equipment before the APRS technology will work for the SOS sweep riders. An announcement was made that Gene Freeland, KG6NYH, will be taking over the duties as Raffle Chairman for the club starting in September. Many thanks to Gary, KQ6RT for his unselfish and dedicated efforts over the past several years for this important club service.

New Business:

No new business was introduced.

Presentation:

W7IB, Casey led a brief review of the recent SFARC Field Day festivities in Nyack. Although the total number of attendees was smaller than in previous years, the group made a large number of contacts relative to the number of participants. It

was agreed that it was a successful event and all that attended had a good time. Members who did Field Day from home shared additional comments.

Gary, KQ6RT, held monthly Drawing. Meeting was adjourned approximately 9:15 PM

Respectfully submitted:

Leslie, K7NYE

Secretary

Going to the Dogs?

*A channeling from the OM himself
(Reported by Casey, W7IB)*

Note: this is another in a series of messages from the OM. As usual, I take no responsibility for the content or opinions offered by himself – I am only a conduit.

I had a dream the other night, and darned if the “Ol’ Man” himself (Hiram Percy Maxin, or HPM) didn’t just pop right up and start talking to me. It’s been some time since I’ve channeled the old fella and I was struck by how much he hadn’t aged, and how much I had! What was even stranger was the fact that my very special dog, Oscar the 7 1/2 word a minute dachshund was also in my dream! [Now I know that some certain members of the SFARC have been known to call Oscar “grouchy” and “disagreeable”, but a dog with such a huge mission in life can’t be all things to all people, and some of us just have to be more flexible!]

I found through my past “visits” with HPM that he seemed to like having the “long dog” around, and that he felt that dogs were some of the first “code op’s”. “Just listen to them some night, or early morning,” he said, “they were the inspiration for the early traffic handlers - I don’t know if the message really ever gets through, but they are communicators!” [Whatever!?!]

The Ol’ Man’s concern this time was a little less whimsical than all of this “dog talk”, he wanted to tell me about the forthcoming new sun spot cycle. He really seemed concerned about the whether or not there would be any hams eligible to use the benefits of the predicted phenomenon. He was been musing about the goings on with the FCC and the large number of hams that are waiting for “something to happen” regarding the code and the licensing structure in the good ol’ US of A. Ever since the big doings of the last World Administrative Radio Conference, and the ITU dropping the hard and fast requirement for CW or Morse (not Morris) Code, many hams have assumed that the FCC, in all its wisdom, would just do away with the CW requirement, and magically upgrade almost everyone.

It doesn’t appear that the “federales” from Gettysburg are in such a big hurry to make such sweeping changes, and if one wants to reap the benefits of the new solar cycle (that would be a disturbing amount of available DX stations to work) they will need to have a license that allows use of the high frequency spectrum. Hear-say and comments from the recent

HamVention (venerated May gathering of much of what is “holy” in ham radio, sometimes referred to simply as Dayton) echoing “sources near the FCC” would indicate that there is absolutely no rush to change the current regulations governing the Amateur Service. This is of great concern to HPM and the assembled (and ever-growing) heavenly ham population – after all, who will make use of all those fabulous ions that are being cooked up for the coming cycle if a large percentage of the almost-eligible have passed the General exam (element 3) and are waiting for “the code to be dropped”? [I get the feeling that he thinks it’s something like a small chicken waiting for the sky to fall. HmMMM]

He went away right after he sent me the bit about the code being dropped and I was left awake with a funny feeling in the pit of my stomach, and a nasty headache. What was he trying to tell us?? That,

- we’ve got to work with the population of folks with limited expectations,
- it’s important that new licensees put in some effort to reach the next level,
- the FCC make snails seem fast and decisive,
- dogs are capable communicators and don’t need operators licenses, OR
- the whole danged thing is going to the dogs?

I’m confused. I think it’s your call...

Congressman, ARRL Appeal to FCC to Accommodate BPL Interference Concerns

(Reprinted from ARRL Letter, Vol 25, No 30)

US Rep Mike Ross, WD5DVR (D-AR), and the ARRL have appealed to the FCC to accommodate the Broadband Over Power Line interference concerns of Amateur Radio operators. Ross’s letter to FCC Chairman Kevin J. Martin and the League’s plea to individual commissioners and a face-to-face meeting with one FCC member come in advance of the Commission’s consideration of two significant BPL-related actions.

"As you reconsider the BPL rules, please accommodate the very reasonable interests of Amateur Radio operators in avoiding interference in residential and mobile deployment," Ross asked Martin. "It is in the best interest of our emergency preparedness efforts to do so."

The FCC will meet in open session Thursday, August 3, to consider the United Power Line Council’s Petition for Declaratory Ruling (WC Docket 06-10) regarding the classification of BPL Internet access service as an "information service." The FCC also will consider a Memorandum Opinion and Order in response to petitions for reconsideration -- 17 in all, one from the ARRL -- of the rules that apply to BPL systems (ET 04-37).

In letters to each FCC member on the League's behalf July 26, ARRL General Counsel Chris Imlay, W3KJD, spelled out what he called "a win-win solution" to the BPL interference issue. "Fortunately, as the result of extensive field studies and measurements conducted by ARRL, the Commission has an opportunity now to fix the rules before BPL deployment becomes widespread," Imlay said, "and before interference becomes an impossible enforcement burden and a substantial threat to the public service, emergency and disaster relief communications provided by the Amateur Service."

Imlay asserted the FCC does not have to choose between permitting BPL and protecting licensed radio services. The FCC only needs to do two things: Require that BPL providers only utilize frequencies above 30 MHz on overhead medium-voltage power lines, and make no use of Amateur Radio spectrum on underground lines and lines to customer premises. If the Commission does, Imlay said, any remaining interference issues "become manageable on a case-by-case basis."

Imlay explained that BPL systems using DS2 chipsets or Main.net architecture have caused untenable instances of harmful interference to Amateur Radio operators. "Unfortunately, the Commission's Enforcement Bureau has been unresponsive in addressing a substantial number of BPL interference cases," he said.

"By notable contrast," Imlay continued, BPL systems that don't make use of HF spectrum on overhead lines avoid interference problems. He pointed out that the Current Technologies BPL system, which uses spectrum above 30 MHz, "has proven relatively benign toward Amateur Radio." The Motorola BPL system makes no use of HF at all on medium voltage lines "and is completely benign toward Amateur Radio," Imlay said.

In his letter, Ross noted that Amateur Radio was "instrumental in providing interoperability communications in the aftermath of hurricanes Katrina, Rita and Wilma last year." Infrastructure-free long-distance communication is provided "on a volunteer basis and cannot be duplicated," the congressman told the FCC chairman.

In their respective communications, Ross and Imlay emphasized that Amateur Radio operators are not opposed to BPL per se. They are opposed to interference and to the rules the FCC adopted in 2004 that "did not do anything to prevent inevitable, harmful interference from BPL systems" that employ HF spectrum on unshielded, overhead medium-voltage lines, Imlay said.

"This is the crux of the problem, and it is a very substantial one," Imlay maintained.

Earlier this week, Imlay was able to meet with FCC commissioner Robert McDowell and members of his staff to express Amateur Radio's concerns about interference problems the current Part 15 rules governing BPL fail to adequately address.

"The Amateur Radio Service and ARRL -- the National Association for Amateur Radio needs your support in arriving at a solution that meets the needs of all interested parties," Imlay concluded.

For Sale

Richard would like to thank everyone who purchased some of Roger's equipment. He still has a few items if anyone is interested.

Heathkit HW8 QRP transceiver \$25

RF Concepts 2-23 2 meter power amp \$50


Bencher BY-1 Iambic Paddles

Trac CMOS electronic Keyer both \$50

Roanoke doppler kit

for transmitter hunting \$10

Contact Richard, WA6RWS if you are interested in any of the above equipment.



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