

APRIL 2012

THE MONTHLY NEWSLETTER of the SANTA CRUZ COUNTY AMATEUR RADIO CLUB

SHORT SKIP



50 Years of Ham Radio in Space

April 18th is World Amateur Radio Day and celebrates the 87th anniversary of the founding of the International Amateur Radio Union, IARU. Now it has been announced that the theme of this years World Amateur Radio Day is "Amateur Radio Satellites: Celebrating 50 Years in Space."

The name and the theme were chosen in remembrance the launching of OSCAR 1 on December 12, 1961 and OSCAR 2 on June 2, 1962. Several IARU Member Societies have already announced special event stations for various dates during April to celebrate these two early ham radio in space milestones.

Callsigns known as we go to air include 6H6IARU, 3G73IARU and LZ1WARD. The EARD suffix standing for World Amateur Radio Day. (IARU-R2)

ISSLIVE! APP

NASA has announced the release of the ISS-Live! app for iPhone, iPad and Andoid devices.

The ISS Live! app delivers live streaming data from the International Space Station. Users can take a virtual 3-D tour of the Mission Control Center and the space station, and view mission control console displays with real-time data. Interactive educational lessons using the data, as well as crew and science timelines with individual crew member, social media and international science experiment details are also available via the app.

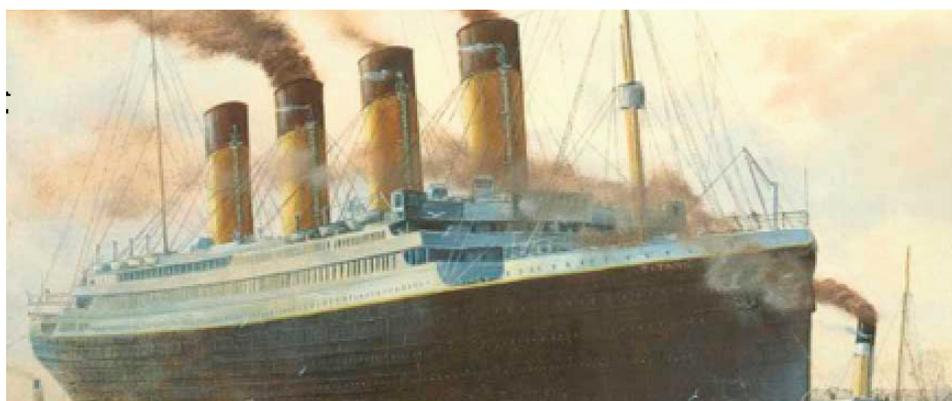
The space agency calls ISSLive! an innovative, interactive application that provides a novel way to learn about the International Space Station while on the go. To learn more and find links to download the ISSLive! app, visit spacestationlive.jsc.nasa.gov. That's where you will find the icons for the iPhone App Store and the Android Market.

—Amateur Radio Newsline #1807

Titanic's Historic Message

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The RMS Titanic set sail from Southampton England on April 1912, the radio equipment on-board included a synchronous rotary spark transmitter driven by a 5-kilowatt motor-generator that draws 100-V DC from the ship's lighting circuit and converts it to AC. The setup is powerful enough to to send Morse code signals up to 700 km by day and 3200 km by night. The transmitter generates radio waves by means of spark gaps. Electrodes mounted on a rotating metal disk driven by the motor-generator pass by two electrodes fixed to an outer cylinder; as the telraph key is depressed, high voltage sparks jump the gap between the fixed and rotating electrodes. Signals travel through a 4-wire, 180 meter-long Marconi twin "T" type antenna, strung between the ship's two 60-meter masts. April 14th 1912 the Titanic strikes an iceberg at at 11:40 pm. Radio operator Jack Phillips begins transmitting "CQD MQY" (MQY was the ship's call letters). July-August 1912 the International Radiotelegraph convention in London adopts the distress signal "SOS" along with continuous staffing of ship's wireless. Within several weeks, US laws are similarly updated. {extract IEEE Spectrum April 2012}



Treasurer's Report

The February 29, 2012 Treasurer's Report presented to the Board of Directors showed that the SCCARC treasury had \$4571.92 in cash and bank accounts (total less encumbrances: \$4044.92). At that time all financial obligations for which invoices had been received had been met. The full Report, incorporating the current working budget as well as actual and projected income and expenditure figures for the full calendar year, will be available for review at the April 20 Club meeting.

NEW April Raffle

**March Raffle Moved to April
Time for Spring Cleaning in the Shack!**

The raffle has been postponed to April, so if you gathered up items but didn't want to haul them to the March meeting in the rain, you have another chance at our April membership meeting. We are not limited to radio- or even tech-related items--be creative! Your discards may be someone else's treasure!

CLUB MEETING FRIDAY APRIL 20, 7:30PM

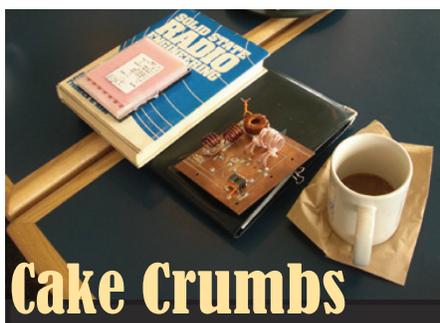


By Art Lee WF6P

CHATTER

Between rain squalls I made a speed run up to my daughter's QTH in Sacramento. Took a refrigerator and freezer up for their use. This gave my XYL Donna, AB6XJ, and me a week of leisure time -- and a chance to work some CW on the ancient Kenwood 430S we leave in the spare bedroom. It had been about a year since I had it on the air so wanted to give it a workout. My daughter had gotten rid of the desk the rig formerly occupied so the rig and power supply were now on the bedroom floor. I had to get down on my elbows and knees to work the Baja Maritime Mobile net. Did you ever tune a rig while painfully kneeling on a cold hardwood floor? Finally I had to lie flat to read the settings and frequencies. Getting down was easy, getting back up ... well, it wasn't the same (groan). With hopes that my antenna had not fallen or been overgrown with foliage, I keyed the mic in response to the net controller's call for check-ins. My SWR was 2:1. He came right back with a good signal report. One story on the net was that of a boat owner attempting to pay his \$5000 back slip rent in Santa Rosalia, Mexico. The marina would not accept a credit card or check – cash only. The marina was under dubious, temporary management so giving cash was not a good plan. The Simon Sez, a 42-foot Beneteau sailboat, had been there a year. Someone had moved it to another marina – an interesting story that I followed each morning, including by email. If my Santa Cruz sailing companions were interested in buying that boat, I would crew for them.

Another concurrent story told over the Baja Net was of a 35-foot wooden sailboat sinking at the dock. The cockpit drains had leaked so they had been pinched off. The result from days of heavy downpours was that the cockpit filled and spilled over into the main cabin. The water filled the cabin, sinking the boat. Fellow boaters commiserated with the owner, who raised the boat from the 40 foot depth. They helped clean everything up. Wiring, electronics, stove, refrigerator and other equipment has to be replaced. Mud had to be cleared out by pressure washing. Fortunately, there was no fuel spill in the marina – else a



Cake Crumbs

Cake at Large

Many of us were very sorry when Jimmy (N1IPP) and Maureen left us to return to the East Coast but he really does keep in touch by reading Short Skip. This is what Jim recently sent.

—W6WO

Ah the Cake sessions and the SCCARC are fondly remembered. I have recently come into contact with the Arduino world. My entry was with a gas mileage computer using an Arduino. Pre 1996 cars do not have monitoring of fuel usage per se and there are some interesting designs using Arduino building blocks. MicroCenter, which is in walking distance from my house, carries them and many beginning robot makers start with Arduino controllers. They are reasonably inexpensive for what they are and allow rapid development for small computing and controlling projects. Arduino has been really popular with the Maker Movement

—N1IPP

hefty (\$1500+) fine would be incurred. The oil in the engine had not seeped outside the hull.

With the Kenwood moved to eye level on a tiny table near the bed, I was able to lie there at night while reading and copying code. One op kept sending perfect code at a comfortable 15 wpm and finally prompted me to respond. I had to refamiliarize myself with the controls – the little cw slider switch at the top of the case was “off.” So after some fumbling with it, the squelch and plugging in the paddle, I was set. He and I chatted away for an hour and in closing, he said I had a pretty bad wobble or flutter. Over the next three nights I kept getting the same reports on CW but was clear as a bell on voice. What the heck? One night, Nick, KA6CPOM, up in the Sierras, suggested that my Mode switch might be the problem. After signing, I spent about fifteen minutes exercising all the switches and push buttons. The next night, all was good. Now that's troubleshooting via wireless!

Slow Speed CW Net

If you are new to CW and would like to improve your skills with this mode, I'd like to invite you to join a group of Bay Area hams learning to operate CW. Towards this end we have started a slow speed CW roundtable we refer to as the 'Slow Speed CW Net'. The net meets twice a week, Thursday and Sunday at 7:30pm local time. Since the main purpose is to help new hams improve their cw operating skills we:

Send at the speed of the newest (slowest) participant.

When a new member joins we switch to SSB on the last go-around to give them a chance to ask questions.

In general, encourage all participants to be successful.

All Hams are welcomed to join us or just to 'jump in' and say a quick hello. It takes a few experienced CW operators to be the example for the others. Just keep in mind you have to adjust your speed to match the members who are on that night.

If you are a no-code Technician, General or Extra class and dream about working a CW contest, it is not an unrealistic goal to set. We have members who two years ago started learning CW and now are entering CW contests. Others who started a year ago and have now met 'friends' on 20 and 40 meters CW and have nightly schedules.

If you want to join the net to learn or improve your CW skills there are some basic requirements. You need to be able to send the Morse characters. So, practice your sending 'off the air' until you can send characters accurately at a SLOW speed. Forget about going fast at first. Remember, the Net is for slow speed CW. Also, keep in mind that sending with a 'clean fist' will be necessary for the new participants like yourself to copy what you are sending.

You can listen to the net at first to get an idea of how it starts, how you check-in or break-in after it has started and how the round table format proceeds. You will need a 2-meter All-Mode transceiver. The net is on 144.230MHz. Set your Transceiver mode to CW. E-mail us and let us know you are listening and how it is going at sf-bay-cw-enthusiasts@googlegroups.com

I realize that many of you are living out of the Bay Area and that 2 meters will not work for you. I apologize in advance. We have had participants move out of state and are considering using 80 meters on occasion to include them, which may make it possible for you to join, but for now it is 2 meters.

Take the leap and give CW a try. Before long you will be another CW enthusiast.

73, Al WT6K

Three AM Therapy

It often happens that I wake in the early hours with a solution to something that had been puzzling me during the day. It almost seems my brain works better when I'm asleep than when I am awake! This recently happened but what became clear was rather a shock, an electric shock you might say. For half a century the way I have dealt with transformers is clearly not exactly correct ie wrong ! Setting aside the philosophical debate that it may be better to be approximately right than precisely wrong we can consider a common transformer with two windings. The number of turns used in these windings is one factor that determines their individual inductance and coupling. Briefly the impedance of an alternating voltage source controls the current in one winding, by convention called the primary. The magnetic flux due to primary current induces a voltage in the other winding (called the secondary) and a secondary current will flow determined by the impedance in its path, often called the load impedance. A perfect transformer will not incur any losses and moreover all the flux created will couple equally with all the turns of the secondary. These ideal conditions establish the relationship between the source and load impedances as n^2 where n is the ratio of primary to secondary turns. As an example a 500ohm cable feeds an antenna with a 200 Ohm input impedance. This is a 1:4 impedance ratio and therefore a transformer requires a 1:2 turns ratio for most efficiency. Note a transformer with 3 turns on the primary and 6 turns on the secondary still provides the same impedance transformation. The value of n is just a matter of counting turns and I have long overlooked the error in applying n^2 for impedance conversion by an imperfect transformer. In practical transformers some turns are not fully linked by the magnetic flux, their effective inductance is reduced, the turns ratio is altered and hence there is an error in the impedance transformation. These unlinked turns are called leakage inductance and they become a limiting factor in high frequency performance. This recently came to the fore in measuring actual transformers and modeling them in Ward's (AE6TY) fine program called SimSmith. I will use turns ratio more carefully in the future and look forward to a solid night's sleep.

Ron W6WO

The Extra Class Question of the Day

by Dan Romanchik, KB6NU

As many of you already know, I have written study guides for the Tech and General Class license exams (www.kb6nu.com/tech-manual). Until now, however, I've shied away from writing an Extra Class study guide. The two main reasons for this is that the material is much more complicated and there's a lot more of it.

This year, however, the NVEC is updating the Extra Class question pool, and I've decided to bite the bullet and do it. So, I'm now in the process of writing a No-Nonsense Extra Class Study Guide.

After I got started on this, I had a D'oh! moment. It occurred to me that instead of just publishing this material in the study guide, I could also post some of it to my blog (www.kb6nu.com). So, now I have the "Extra Class question of the Day" feature on KB6NU.Com.

In reality, it's usually more than just a single question because many of the questions are on the same topic. That's OK, though, because in reality, I don't post these every day. So, it all works out. Having said all that, here's an example. The correct answer to the question is in bold.

Extra Class question of the day: meteor scatter

Amateur radio operators use many different ways to get signals from one spot to another. Perhaps one of the most interesting is meteor scatter propagation.

Meteor scatter propagation is possible because when a meteor strikes the Earth's atmosphere, a cylindrical region of free electrons is formed at **the E layer** of the ionosphere. (E3A08) **28 - 148 MHz** is the frequency range that is well suited for meteor-scatter communications. (E3A09)

Unfortunately, these ionization trails are relatively short-lived, so to communicate via meteor scatter, you need to either be able to detect when these paths are available or be transmitting when the paths are available. **<bold>All of these choices are correct</bold>** when talking about good techniques for making meteor-scatter contacts (E3A10):

- 15 second timed transmission sequences with stations alternating based on location
- Use of high speed CW or digital modes

GE Video

The Schenectady Museum is using the YouTube dot com website to rebroadcast more than 1,000 of its General Electric films, which date back to 1915. According to the museum curator Chris Hunter, the archive was previously available only on 16 millimeter film and was viewed infrequently because of its physical condition and the cumbersome process to watch the films using an optical projector.

Hunter said that the museum had long wanted to digitize the collection in order to preserve it but until recently it had been cost prohibitive to do so. Now, thanks to grants from the Institute for Museum and Library Services and the Institute of Electrical and Electronic Engineers Life Members' Foundation, the museum was able to purchase a high- definition film transfer unit and hire and operator for it.

Among the film artifacts now existing in the digital domain are advertisements, raw footage of equipment tests, company picnics and promotional clips. Also transferred is the famed early television series titled the General Electric Theater. It was hosted by former President Ronald Reagan.

The museum hopes to finish uploading all of its film transferred videos to YouTube in the next year. It will then begin digitizing its 1,200 video tape based archives. A direct link to what has already been uploaded and available for viewing is at tinyurl.com/ge-on-youtube

—From Amateur Radio Newsline #1808

- Short transmission with rapidly repeated call signs and signal reports

For more information on meteor scatter, go to:

- G3WZT's Meteor Scatter page (www.qsl.net/g3wzt/g3wzt_ms.html)

- RSGB's Meteor Scatter page (www.rsgb.org/psc/meteor-scatter.php)

For more Extra Class questions of the day, go to www.kb6nu.com.

When he's not trying to figure out how he'll be able to finish writing the No-Nonsense Extra Class License Study Guide, Dan, KB6NU is station manager at WA2HOM (www.wa2hom.org), the ham radio station at the Hands-On Museum in Ann Arbor, MI. If you have a particular question that you'd like him to make a "question of the day," e-mail him at cwgeek@kb6nu.com

SCCARC Board - 2012

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MONTEREY BAY REPEATER ACTIVITY

Santa Cruz County	<p>K6BJ 146.790- PL 94.8 Santa Cruz (linked to KI6EH) KI6EH 147.945- PL 94.8 Watsonville (linked to K6BJ) K6BJ 440.925+ PL 123.0 Santa Cruz (not linked) K6BJ D-Star 441.675 +5MHz (D Star link: tinyurl.com/dstar-sc) • SCCARC Net Monday 7:30 PM 146.79- /147.945- /147.180+ linked • SCCARC 10 Meter Net Monday 7:00 PM 28.308 MHz USB</p>
ARES Net	<p>SC County Wide ARES Tuesday 7:30 PM on 147.180+ PL 94.8 and 443.600+ PL 110.9 linked</p>
San Lorenzo Valley	<p>WR6AOK 147.120+ PL 94.8 Ben Lomond • SLV Net Thursday 7:30 PM</p>
Loma Prieta	<p>AB6VS 440.550+ / AE6KE 146.835- PL 94.8 (linked for net) • LP ARES / LPARC Net Tuesday 7:15 PM</p>
Monterey	<p>K6LY 146.97- PL 94.8 / 444.700+ PL123 (linked for net) Monterey • Monterey Co. ARES Net Wednesday 7:30 PM K6LY 146.970- (PL 94.8) • NPSARC Net Wednesday at 8 PM on K6LY/R</p>
LPRC	<p>WR6ABD 146.640- PL 162.2 / 442.900+ PL 162.2 (winsystem.org) • LPRC Net Tuesday 8:00 PM 146.640-(PL 162.2) • Amateur Radio Newslines broadcast Tuesday</p>
<p>• Santa Clara Valley Section Traffic NET Tuesday 9:00PM 146.640- (PL 162.2)</p>	
<p>FOR MORE INFO SEE: http://www.k6bj.org/freq.html</p>	

SCCARC Calendar of Events

ARES Meeting (prior to club meeting)	Friday	Apr 20
SCCARC Meeting	Friday	Apr 20
Cake Meetings	Sat	Apr 14 28
Board Meeting	Thurs	Apr 26
Short Skip articles due	Mon	May 7
SCCARC Meeting	Friday	May 18

MONTHLY MEETINGS.

The SCCARC Meets at 7:30 PM, on the THIRD FRIDAY of the each month (except December). Meetings are at Dominican Hospital, Education Center, 1555 Soquel Drive, Santa Cruz.

Net Control Schedule:

4/16	Lou KJ6CAI
4/23	Phil KE6UWH
4/3	Tom K6TG
5/7	Chris KG6DOZ
5/14	Lou KJ6CA

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