



<http://www.sf-arc.org>

February 2003

P.O. Box 1005, Newcastle, CA 95658

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



2003 Calendar of Events

(Operating Events in Italics)

PRESIDENT

Richard Kuepper, WA6RWS
530.878.6220
rkuepper@juno.com

VICE PRESIDENT

Rob Carpenter, WW6G
916.984.1892
ww6g@arrl.net

SECRETARY

Joe Sylvia, KF6OQY
916-797-3149
jsylvia@vfr.net

TREASURER

Mike Hudson, KG6EFK
916.624.4714
mihudson@firstam.com

DIRECTORS

Debbie Cunningham, KF6LXN
916.663.4143
dmc@midtown.net
Bob Boeckman, WA6ULL
916.987.9910
wa6ull@aol.com
Casey McPartland, W7IB
916.660.9680
w7ib@arrl.net

REPORTERS

Satellites: Greg, KO6TH
History: Gary, KQ6RT
Digital: Rob, WW6G

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

All welcome to check in
Thursdays, 7:30PM, K6ARR/R
145.430

CLUB MEETINGS

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

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
Casey McPartland, W7IB

WEBMASTER

Justin Carpenter, KG6NYD
rancourt@houserancourt.org

NEWSLETTER EDITOR

Fred Jensen, K6DGW
VOX: 530.885.8251
FAX: 530.745.9622
k6dgv@arrl.net

Mar 7	Board of Directors Meeting
Mar 14	Regular Meeting
Mar 29	Club Breakfast
Apr 11	Regular Meeting
Apr 26	Club Breakfast
May 9	Regular Meeting
May 31	Club Breakfast

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Minutes of Feb Meeting

Amateur Satellite Report

"Digital Musings"

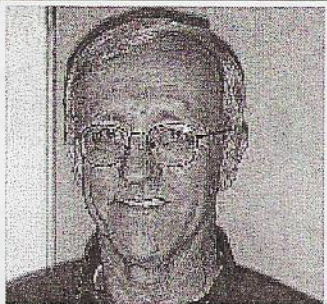
Jim Maxwell, W6CF SK

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From the President's Shack

**Richard
WA6RWS**



Hello everybody,

Wow! Here we are into March already. We will soon be asked to start working some events. There is the MS walk in Auburn and then there will be motorcycle runs. Fred is a big part of Western States and the Tevis Cup. I hope you have already contacted him so you can do your part.

Field Day is on the horizon and that will be a lot of fun. Try and participate in as many events as you can and want to.

The turnout at the club breakfast has been great. It is a wonderful way to meet other members of the club and get to know them better.

Rob has great programs lined up for the meetings and I hope to see you all there.

Lastly, I would ask that if you have any ideas to share them with your leadership and see if we can make them a reality.

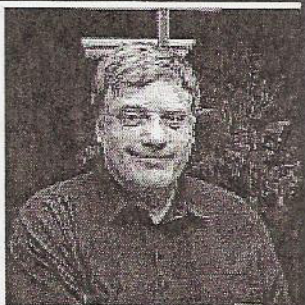
See you all at the March meeting.

73,

Richard, WA6RWS

Vice President

**Rob
WW6G**



February was a great month with a splendid presentation by Birton N6UG on EMMCOM and ARES. Birton was kind enough to provide a copy of the presentation and that is now on our web site. Great reading !!! February then closed with the best breakfast turnout ever. We had 22 for breakfast and that was just fantastic !!!

March looks like a great month too. It opened with our VE team's session on March 1st. A good turnout and a good time. There is interest in developing an EMCOMM Level 1 hybrid class in the area so stay posted for details. All members are cordially invited to the Board of Director's meeting on March 7th. Following that is our regularly

monthly meeting with Al Tipsword, W6GER, as speaker. Al will be speaking about the USS Hornet and its amateur radio club and its activities. There is a preview of the presentation on our web site. It should be great.

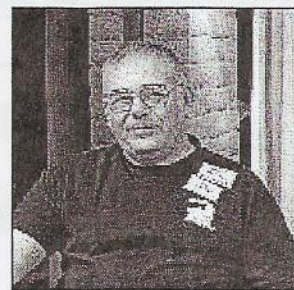
In the spirit of the breakfasts, we had 20 members at the January breakfast and 22 in February. I really hope to break the current record in March.

73,

Rob, WW6G

Secretary's Report

**Joe
KF6OQY**



General Meeting February 14, 2003

Vice President Rob WW6G opened the meeting at 1930 hours. Officers present: Secretary Joe, KF6OQY, Treasurer Mike, KG6EFK. Board members Debbie, KF6LXN, Bob, WA6ULL, and Casey, W7IB, were also present.

President Richard WA6RWS was on vacation at this time. Introduction of officers and members followed. Secretary Joe, KF6OQY, read the minutes of the January 10 general meeting. A motion was made to accept the minutes as read by Casey, W7IB, and seconded by Bob, WA6ULL. Motion carried. Joe next read the minutes of the February 7 board meeting. Motion to accept minutes as read by Bob, WA6ULL, and seconded by Casey, W7IB, this time. Motion carried.

Mike KG6EFK gave his treasurer's report. Motion to accept as read by Bob, WA6ULL, and seconded by Birton, N6UG. Motion carried. Rob, WW6G, gave his VE report of four new Technicians and one Extra. It was also reported that the January 25 club breakfast had 20 people in attendance. Gary, KQ6RT, once again displayed the raffle prizes and conducted same while Debbie, KF6LXN, worked the snack bar. Thank you both.

Old Business: June 8, 2003 has been chosen for the tour of the K6ARR repeater. More information to follow.

New Business: Rob, WW6G, announced to the membership that George Rothbart has a digital PSK meter in kit form available at \$30 each. A sign up sheet was available for those interested in buying one.

Field Day: The 25 KW generator which was available to us in the past will now cost the club \$180 for it's use. Gary will explore what is available in less power and at what cost. A

lengthy discussion followed with more info coming. A motion to explore the situation was made by Bob, WA6ULL, and seconded by Casey, W7IB. Motion carried.

Request: Chris KF6NFW has asked if SFARC would consider helping area schools by providing students with assistance in communication and instruction with contacting the ISS. Further discussion will follow.

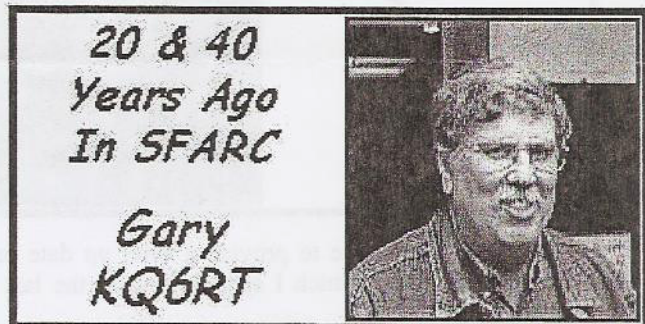
Steve, KF6OCE, made QST with a picture of himself and his jeep which is equipped with radio equipment and creature comforts. He explained how it is set up for participation with ARES.

Birton N6UG did a presentation on EMCOMM and ARES. He explained the structure and activities of ARES in emergency situations with slides. Also mentioned were classes and nets available to amateurs. Thank you Birton for an excellent presentation. Also thanks to all 27 people who attended the meeting.

A motion to adjourn was made by Casey, W7IB, and seconded by Mike, KG6EFK. Motion carried and meeting was adjourned at 2120 hours.

Respectfully submitted,

Joe Sylvia KF6OQY
Secretary



Forty Years Ago at SFARC

No official meeting was held as a quorum was not present. A discussion was held on what we could do to get the club going again. Bob Richier will be looking into getting some films to show. Jim Carman was given a check for \$5.00 to get a few prizes for a free drawing, he will also get a \$5.00 gift certificate from California TV Supply in North Sacramento.

James M. Carman

Twenty Years Ago at SFARC

Meeting was called to order by K6HJA, Mary Ann, at 1930 hrs. March program was a slide show on search and rescue

procedures used by the Coast Guard SAR station, McClellan AFB, Sacramento. Our many thanks to Lt. Loden and Harry McBain, CG Auxiliary.

K4TXK, Craig will be leaving for Alaska to work for the BLM. 73's Craig

New rosters will be distributed to all members by the next meeting. N6HJA stated that a draft proposal of By Laws are written and will be presented to the membership.

W6YHI asked membership about radio interest, the list includes:

CW	3 members
SSB	21 members
RTTY	2 members
VHF	10 members
UHF	8 members
Field Day	11 members
Amateur TV	2 members
Operate	12 members
Net Operation	4 members

W6ZOH asked membership about bringing young members into club. N6HJA asked for volunteers for code and theory training.

W6YHI made a motion for 50 MHz Tech class no code license to the Mt. View Pacific Division meeting March 26. W6LOE second the motion, Carried by majority vote. Letter was sent concerning this to Doc Gmelin, Chairman.

Raffle prizes included:

- #1 Desoldering tool
- #2 polarizing plug
- #3 nut driver
- #4 call letter cap
- #5 etching kit.

N6HJA suggested pies for a possible raffle prize. The club was saddened by the passing of WB7DRL's wife, Mary. A sympathy card was sent in behalf of the club.

Raffle prizes were won by:

- #1 WB6KFL
- #2 W6ANX
- #3 W7EGR
- #4 WB6AHY
- #5 KA6GQW

Meeting closed at 9:45

73,
Gary, KQ6RT

Amateur Satellites

**Greg
KO6TH**



The Ultimate DX Contact

AMSAT's "High Orbit" spacecraft, AO-10, AO-13, and AO-40 have allowed the ham satellite operator DX coverage of nearly half the planet. Recently, I was able to chat with a couple of hams in Perth, on the West coast of Australia, which is nearly as far from here as one can get. To do this, the satellite (AO-40) needed to be at the top of its orbit, and about half-way between us. My antenna was aimed only 8 degrees above the western horizon. Theirs were about the same, pointed east. We marveled at the accomplishment, talking through a spacecraft that was some 37,000 miles overhead. It was their first satellite contact with anyone in North America.

A recent news item, however, put this into perspective. NASA's Pioneer 10 spacecraft could not be heard on their attempt to contact it in early February. Their last, very faint contact was in January, with only a simple carrier being heard. The venerable satellite is about 7.6 billion (7,600,000,000) miles away.

Pioneer 10 was launched on March 2, 1972. It was the first spacecraft to pass through the Asteroid belt, and made the first close-up direct observations of the planet Jupiter in December of 1973. Beyond Jupiter, Pioneer 10 continued to investigate the outer reaches of our Solar System, and officially passed into inter-stellar space in June of 1983 when it passed the orbit of the outer-most planet. It is aimed roughly at the nearby red star Aldebaran, which forms the eye of Taurus the Bull, where it will arrive some 2 million years from now. On board is a small plaque, bearing pictures of two humans standing next to the spacecraft, with coded directions indicating where it came from.

At distances beyond the orbit of Mars, solar cells cannot be used. The warm solar energy from our Sun fades with distance, and there is simply not enough of it at that distance to power a spacecraft. From Pioneer 10's vantage point, our Sun looks like a bright star. Instead, a small nuclear power supply is used. This is made from a lump of Plutonium, which gets hot as it slowly decays. The heat is turned into electricity by a large number of tiny thermocouples, making a nice, reliable, no-moving-parts battery. Pioneer 10's nuclear power source has apparently decayed to the point where there is not enough power to send additional transmissions to Earth. No further attempts to contact it are planned.

At a distance of 7.6 billion miles, Pioneer 10 is not the farthest man-made object. Voyager 1 passed it several years ago, and is still going strong at about 8.1 billion miles out. It is expected to have enough power and fuel on board to operate until at least the year 2020, when it will be some 12.4 billion miles from the Sun. And, even at that distance, NASA expects to be able to maintain 2-way contact with the spacecraft.

But, their antennas are a little bigger than mine.

73,

Greg KO6TH

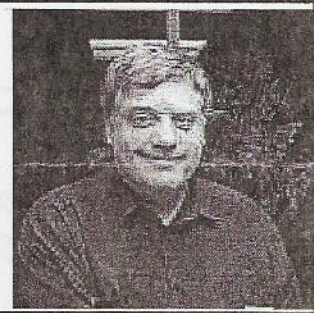
Swap Meets

Foothill Flea Market - 2nd Saturday of each month from March through October at Foothill College, Los Altos.

Livermore Swap Meet - 1st Sunday of each month at Las Positas College in Livermore, 7:00 AM to noon, all year. Talk in 147.045 from the west, 145.35 from the east. Contact Cliff Chiba, KF6EII, larkswap@usa.com

Digital Musings

**Rob
WW6G**



This month I would like to provide a brief up date on the PSK31 meter project which I spoke about at the last club meeting.

To remind those who have not yet had a chance to hear the discussion, one of the thorny problems with PSK31 is adjusting the transmitter so that it yields the most power with no intermodulation distortion. The problem is that how clean a signal we get out depends very sensitively on how we drive it. Think of people you have heard on the repeater who speak to closely or too loudly into the mike using FM. While the result is not necessarily disastrous, it is harder to copy them and they do sometimes splatter a bit. The same can be true with PSK31. Even though a well adjusted signal can be only 31 cycles wide, we have all seen wider signals.

Most often, it is a matter of how much drive you are delivering to the transmitter and this can be a complicated issue. Even if you set it and forget it, with a good signal out, as you move up and down the waterfall, your computer may vary its audio output slightly. George's device makes these types of adjustments in real time. You can get the details on our club web site at: http://www.sf-arc.org/html/modules.php?name=Downloads&d_op=viewdownload&cid=7

To date, I have six members of SFARC who has signed up to get a copy of the kit. This was just great. Last Tuesday, I went to El Dorado Hills Amateur Radio Club and discussed George's project with them. We now have a total of 12 people signed up and I think that that is just fantastic.

On Wednesday, March 18th, I have been asked to speak to North Hills Amateur Radio Club and will also discuss the PSK31 meter with them. We hope to get a few more. In addition, one member has agreed to take the message to Sacramento Amateur Radio Club. So, all in all, we should have enough interested people to get George to move forward.

Well, 73 and hope to print you real soon.

Rob, WW6G

For Sale

LG (Goldstar) Model CRD-8322B 32X CD ROM Drive. (May be an HP OEM). Very good condition. I paid \$69.99 for a new Sony 52X R/W drive (after Rebate) at Staples, so maybe about \$25 for this one.

Jim Carman
jmcarmar@cwnet.com

Wanted

Tower climber to help install 1 UHF and 2 VHF antennas with associated brackets and hardware on a 70 foot Rohn 25G. Feedlines are in-place and ready for connection. Your editor is getting a bit old for this activity alone.

Fred, K6DGW
530.885.8251
k6dgw@arrl.net

Jim Maxwell, W6CF – SK

(from ARRL Bulletin ARLB013)

It is with deep regret that we record the passing of our Pacific Division Director, Jim Maxwell, W6CF, at his home in Redwood Estates, CA on February 6. He was 69.

Jim was a Life Member of the League, and had also previously served as Pacific Division Vice Director and Santa Clara Valley Section Manager.

"Jim Maxwell was a gentle giant of a man," ARRL President Haynie said. "He was one of the best assets Amateur Radio could have in a leadership position." David Sumner, K1ZZ, ARRL Chief Executive Officer said, "Jim Maxwell was one of the most brilliant people I have ever had the privilege to know. He was also one of the most unselfish and one of the most modest."

Jim was an avid DXer and contesteer. He served as an ARRL Emergency Coordinator from 1991 to 1999 and he was a member of the ARRL DX Advisory Committee from 1988 through 1994. He previously held the call W6CUF.

His interest in radio and electronics history was well known, extensively collecting amateur radio documents and memorabilia. Professionally, Jim held doctoral degrees in aeronautical engineering and biomechanics.

He retired from the Lockheed Missiles and Space Corporation as a technical consultant in 1992 and from Scitor Corporation in 1998.

Jim was a long-time member of the Northern California Contest Club, and his passing occurred just prior to the North American CW Sprint contest. In his honor, all NCCC members signed the name "Jim" in that contest.

Pacific Division Vice Director Bob Vallio, W6RGG, takes over immediately as Director. ARRL President Jim Haynie, W5JBP, appointed East Bay Section Manager Andy Oppel, N6AJO, Pacific Division Vice Director on February 20 to fill the position vacated by Bob.

ARRL Emergency Communications Course Registration Opens

The next session of the EC-001 Emergency Communications course registration will open March 3 at 12:01 Eastern Time (0501 UTC or March 2, 2101 Pacific Time). This means on the west coast you can register Sunday night at 9:01 PM.

Registration will be open until weekend of March 8-9, or until 200 slots are taken. Registration is \$45, which will be reimbursed upon completion of the course. The 200 seats fill up fast!!

The course begins Tuesday March 18th. For more information see www.arrl.org/cce.

73,

Jettie Hill, W6RFF
ARRL Sacramento Valley Section Manager
w6rff@arrl.org

Event Communicators Needed

Communicators are again needed for both the Western States Endurance Run (June 28-29) and the Tevis Cup Endurance Ride (July 19-20). The WSER is a 100-mile event beginning at Squaw Valley and ending in the Placer High School stadium in Auburn. The Tevis, also a 100-mile event, begins in the Tahoe area, and ends at McCann stadium at the Gold Country Fairgrounds. Both follow the historic Western States Trail over the summit and down the Middle Fork canyon of the American River.

Unfortunately, the Run occurs again on Field Day (and will until 2012!), however it is in itself a "field day," and a great opportunity to shake down your emergency equipment and preparations. We generally will have about a dozen emergency situations occur on each event for which communications is critical. Both VHF (145.430 and

146.355) and UHF (440 MHz) networks will be used, as well as VHF packet. Many of the checkpoints are in some of the most beautiful and rugged terrain in the country.

Communications for the Run is coordinated on a web site at www.foothill.net/~andrea/j/WSERO.htm. Mary Ann, KE6EST, is coordinating communications for the Tevis (kd6wty@yahoo.com).

Interest Sought

Last year, one of the programs at the SFARC meeting was a presentation by BloodSource, a major Northern California Blood Collection and Distribution Center headquartered in Sacramento. A number of years ago, the Sacramento Radio Club, in return for use of the Center's conference rooms for their meetings, set up both HF and VHF equipment for them. During the 9/11 crisis, this equipment proved invaluable as it and the ham operators were the only communications link with the blood centers and hospitals in New York City. Something over 800 units of blood were dispatched via military aircraft from Northern California.

The success of that effort, and the realization that more was needed has prompted the Center to look into additional back-up communications plans. So far, three areas have been identified:

- BloodSource is the main operations center for Northern California, and there is a similar center for Southern California located in Bakersfield. They are currently looking into a network of linked amateur repeaters that would give them a voice connection in the event of a communications failure.
- BloodSource has some 14 satellite collection centers scattered from Merced to Redding (one in Auburn). They are investigating the possibility of pre-installing antennas, and organizing a roster of on-call hams who would go to their center in the event of an emergency.
- BloodSource serves some 46 hospitals in its region, and they too might need emergency communications with the Center.

Obviously, this would need to be a coordinated effort between many clubs, and hopefully, the ARRL Emergency Field Organization might be able to serve as a coordinator for it. Right now, the focus centers on assessing the interest and ideas of the ham community. Please send your comments and ideas to your editor at k6dqw@arrl.net and I'll compile them for review.

Ham News of the World

(Courtesy of the ARRL Letter and Bulletins)

New Field Day Entry Class

Field Day will gain another entry class for 2003. "Class F" stations will operate at Emergency Operations Centers, or

EOCs. The change renews the emphasis of Field Day's 1933 origins as an emergency preparedness exercise as opposed to a routine contest.

ARRL Contest Branch Manager Dan Henderson, N1ND, said that last year the League received a record number of Field Day entries from groups and individuals. Given the increased emphasis on emergency communications since September 11, 2001, the ARRL Board's Membership Services Committee asked that the Contest Branch come up with something to reflect that emphasis. The new Class F station is the result.

"This is a major change," Henderson said. "Class F has been established to encourage groups to test and further their working relationships with established emergency operations centers." The updated rules and a list of frequently asked questions in the new 2003 Field Day packet spell out the details.

A Class F entry station must set up at an "established EOC" center activated by a club or non-club group. Class F EOC operation must take place in cooperation with the EOC staff. Class F stations are eligible for the same bonus points as Class A stations.

Harmonized 7 MHz Allocation Gains Support in the Americas

A dozen countries in the Americas have agreed to support a proposal for a "harmonized" 300-kHz amateur band in the vicinity of 7 MHz. The issue of a uniform worldwide 40-meter allocation is on the agenda of the World Radiocommunication Conference 2003 (WRC-03), set to be held in Geneva this June and July. The US has so far taken no position on the issue.

"It is possible that other countries will sign on when this proposal is circulated among all 34 member-states of the Inter-American Telecommunication Commission (CITEL)," said ARRL Technical Relations Specialist Jon Siverling, WB3ERA. "It takes at least six countries of the Organization of American States to make an Inter-American Proposal (IAP).

Argentina, Canada, Colombia, Costa Rica, Dominican Republic, El Salvador, Guatemala, Honduras, Mexico, Paraguay, Peru and Venezuela agreed to the Canadian-sponsored IAP for a 300-kHz amateur band—from 7 to 7.3 MHz—in all three ITU radio regions. That position is in line with what the International Amateur Radio Union (IARU) has been calling for.

Twelve CITEL countries agreed in Orlando on an IAP to propose a "footnote allocation" of 135.7-137.8 KHz to amateurs in Region 2. This band is already available to amateurs in some CEPT countries.

The 136-kHz issue came up as a Canadian proposal to create a secondary allocation, but the issue is not on the WRC-03 agenda. According to Siverling, International Telecommunication Union (ITU) member-states want

to eliminate or minimize footnotes in the Radio Regulations. The IAP for a "footnote allocation" at 136 KHz, however, was seen as a way to get the issue on the WRC-03 agenda "on an exception basis," he said.

Siverling explained that the CITEL IAP leading to a possible allocation in Region 2 of the 136-kHz band at WRC-03 has been handled separately from the pending US amateur LF allocation. Acting on an ARRL request, the FCC has proposed a domestic (US-only) allocation at 136 KHz on a non-interference basis.

(Ed Note: With the continued decline in the current sunspot cycle, riding 40 meters of broadcasting will be exceedingly welcome. While the higher frequency band openings will be fewer [or non-existent], nighttime absorption will also be lower on the lower frequencies)

HSCW and QRSS

Rob, our digital guru, covers the spectrum of the more exotic modes available to hams. Here's some information about two modes that probably don't class as "digital" in most folks' lexicons, but nevertheless employ computational technology to be feasible.

HSCW stands for "High Speed CW." It is commonly found in meteor scatter communications where signals are scattered off the ionized trails produced when meteors burn up in the upper atmosphere. The trails last from a fraction of a second to several seconds at the most. Thus, you have to say whatever you want to say very quickly.

A vital national system uses meteor scatter derived from experiments and work done by amateurs. In the Rockies, unmanned snow measuring and weather stations communicate their information using meteor scatter, and do it quite effectively, thus allowing more precise forecasts of river flows, runoff conditions, and improving agriculture.

HSCW is exactly what it's name says ... very high speed CW (like several hundred WPM). It allows enough information for a valid QSO to be exchanged during a "ping," the very brief lifetime of the ionized trail of a grain of sand entering the atmosphere.

Obviously, one does not sharpen up a pencil and copy 300 WPM CW by hand! And, until computers became common in ham shacks, there really was no practical way to record an HSCW burst and then slow it down for transcription, since slowing with a tape recorder also lowered the audio frequencies drastically.

Keyer chips on the market now (e.g. the K1EL keyer) will send HSCW, and software is available free that will capture the burst through a sound card and decode it for you.

QRSS is at the extreme opposite end of the speed spectrum from HSCW. It is an adaptation of the technique used by the US Navy to communicate with submerged submarines using extremely low frequencies. Signal levels at the receiver typically run 10 - 20 dB below the noise. Amateurs adapted

the technique to communications in the low frequency ranges, under Part 15 rules (and if we get the allocation at 136 KHz, under "real" amateur rules). Again, signal levels will be well below the noise level. The name QRSS comes from the International Q-Signal QRS meaning (very roughly) "send slower. Again, the availability of computers made QRSS a viable mode, in two ways. A mathematical process called the Fourier Transform, known for several centuries, will take a sequence of amplitude samples and transform them into a picture of the discrete frequencies that made up the original wave. Unfortunately, it is very computationally intensive, preventing real-time usage. In mid 20th century, a version of the FT was developed that, providing the number of samples was a power of 2, would calculate the transform hundreds of times faster. It is called the Fast Fourier Transform (FFT), and is what produces the "waterfall" display on your PSK31 software.

The second process is called "integration" which roughly translates into "summation." The incoming samples of the signal and noise from your sound card are transformed into a series of spectral plots. Noise is a random sequence - it's spectrum will have both positive and negative amplitudes - and, if you add enough of them together, they will tend to cancel each other out ... making the noise disappear.

Not so with the desired signal. Even though it's level is well below the noise, it is still there, and every time you add another plot to the total, it tends to get stronger. So, all you have to do is send very slow CW, have the receiver use the FFT and integration, and your dots and dashes will appear as strong peaks (usually portrayed as brighter spots) on the display. How slow? Common usage of QRSS will have dashes lasting several minutes!

Both HSCW and QRSS are definitely not rag chew modes. Contacts are arranged and carefully planned and timed. But then, one does just not fire up and call CQ DX on 10 GHz either. HSCW and QRSS are just two additional examples of communications modes that test technological and operating skills, and, as with many other things in life, the fun is often in the quest rather than the destination.



4755 Pacific St., Rocklin, CA 95677-2407

Manager: Randy Erwin

TEL: 916.624.0641 / FAX: 916.624.5249

<ur29@unitedrentals.com>

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Associate:	\$ 7.00	Repeater Donation:	\$ _____
Auto Patch Donation:	\$ _____	Newsletter Booster:	\$ _____
Miscellaneous Donation:	\$ _____	Christmas Donation:	\$ _____
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