

Sierra Signals

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

June 2004

P.O. Box 1005, Newcastle, CA 95658

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



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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

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Joe Sylvia, KF6OQY

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2004 Calendar of Events

(Operating Events in Italics)

Jun 11 Regular Meeting

Jun 11-13 ANARTS RTTY Contest

Jun 22 BPL Reply Comments Due

Jun 26-27 FIELD DAY

Jun 26-27 Western States Run

Jul 9 Regular Meeting

Jul 31 Club Breakfast

Jul 31-Aug 1 Tevis Cup Ride

Aug 13 Regular Meeting

Aug 28 Club Breakfast

Sep 10 Regular Meeting

Sep 25 Club Breakfast

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"Where In Blazes Am I"

From the President's Desk



Well, happy June and, for amateur radio operators, June means one thing -- Field Day. The end of this month, we will hold Field Day at Nyack, off route 80, where we have held it for the last couple of years. Each year we have a good turnout of members to operate and a good number of operators to just

participate and enjoy the camaraderie.

Field day will run from 11 AM on Saturday until 11 AM on Sunday. We will monitor the club repeater - 145.430 in case anyone needs directions. Those who are operating may set up no more than 24 hours early. Most members show up somewhat before 11, pick a spot and get ready for the day. The club provides the main course for lunch and diner on Saturday and soda, and each member is asked to bring a side dish or desert together with necessary setup items -- plates, silverware, cups, etc. If you are bringing a generator, the club will reimburse gas used at field day. Some members stay over at night and have breakfast together Sunday morning, doing a little more operating before closing up shop around 11AM Sunday morning. Everyone has a great time.

For those working the Western States that day, stop by either before or after. Bring a dish and have lunch or dinner with us !

One good piece of news is that licensed and non-licensed alike have the opportunity to operate at the stations and see some different operating modes. It is likely there will be voice (SSB), digital and CW - so come on out and enjoy the day !!!

For this month's meeting we have a real treat: Frank W6DHN, past president of the El Dorado County Amateur Radio Club, and former DEC, will speak about antennas. I understand that portable antennas will be a very timely topic. Just in time for Field Day and a great talk at any time.

For those hams who took the class Casey and I put on, you are invited to the regular meeting on June 12th and to come to Field Day. You do not need to be a member! This is a great chance to see a little about what amateur radio has to offer, have a nice lunch or dinner and do it with no strain. Bring the family! People do what they enjoy, and the total of individual Efforts is always great - so come on out !!!

Do not forget the raffle of the MFJ 259b antenna analyzer (list price is \$259.95). If you do not already have one, this is a great opportunity to take a chance on the drawing. The tickets are \$3 each or 3 for \$5. See Gary KQ6RT at the meeting or at Field Day for tickets. The drawing will be made at dinner Saturday and you need not be present to win.

73

Rob Carpenter, WW6G
President

Minutes of Regular Meeting May 14, 2004

Meeting opened by President Rob, WW6G, at 7:30 PM. 32 members and guests present.

Intro of Officers: VP Casey, W7IB; Treasurer Donna, KD6PJN; Secretary Bob, WA6ULL Directors: Larry, AE6CC, George, KG6LSB, and Kevin KG6RIO

Satellite Report by Greg, KO6TH: AO-40 and FM Birds are jammed up --AO-7 is back to life when in sunlight with low transmit power. F0-29 has battery problems, and Echo 20 is gone

VE Exam Report by Larry, AE6CC: No one showed at the last exam but the crew had a good time anyway. The June exam is at the college as usual, but July and Aug. could be a problem. River City Club exams are at the Carmichael Elks Club 8:00 to 9:30 AM.

REPEATER from Jim, K6ARR: Everything is OK and working good.

EMMCOMM WEST in Reno on May 22nd and Field Day is June 27-28 at Nyack

ARES NET by Joe, WA6AGR: The ARES net meets Sundays at 7:30 PM on the 145.430 repeater. Joe still has tickets for the prize at North Hills Swap on May 16 in Orangevale.

Western States 100 mi Run by Debbie KC6LXN: The event will be on Field Day (again!) Could make both that Day?

ANTENNA DAY PICNIC: Casey, W7IB, won the Shoot Off

Fred, K6DGW, is in Connecticut at W1AW. Please listen for him operating the station He is also looking for articles for Sierra Signals.

The Club Picnic will be Saturday, August 21 at Regional Park in Auburn. Take Hwy 49 north to Dry Creek Rd (84 Lumber on right), and turn left to park and picnic area.

Field Day is June 27-28 at the usual site at Nyack on I-80. T-shirts are \$12.95 and there are also ARRL Field Day Pins. Come up and stay all night. The Club provides lunch and Dinner Bring Pot-luck Dish For Sat evening dinner. Rest rooms are close, as is a store and a Burger King.

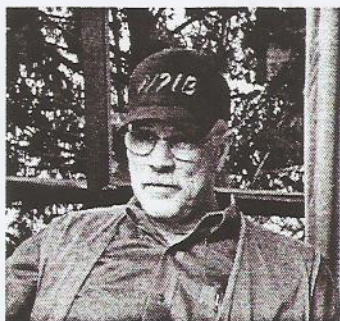
Minutes of the April meeting were read by Bob, WA6ULL. Motion to accept by Richard, WA6RWS, and seconded by Bob, KD6WTY. Raffle by Gary KQ6RT -- Atomic clocks, tools and batteries Thanks Gary! Refreshments were provided by Debbie, KF6LXN. Thanks again.

Meeting concluded with a presentation by Mike, WU7Q about IRLP And ECHOLINK Internet linking systems. He showed us demonstrations to connect to Australia, Hawaii, and Portland. A very good presentation.

Meeting Adjourned by Pres. Rob WW6G

Submitted by Bob, WA6ULL
Secretary

From the Vice President's Desk



Well here it is June and the summer ham radio activities are moving into full swing!

Our meeting this month will feature a presentation on *portable antennas* by Frank Sharit, W6DHN, a relatively new member of SFARC. Frank lives over in Georgetown and has been an

active ham for somewhere in the neighborhood of 50 years (give or take;-). Frank retired from the US Navy as a Master Chief in the field of medical entomology, and went on to manage operations of some substantial business operations here in California. A former volunteer fire chief, an ARES leader, a skilled traffic handler, a long term MARS member, Frank is a consummate outdoorsman with appreciable experience in portable and emergency operations. I understand that if I bring my portable rig that there may well be a live demonstration! I think this presentation is perfectly timed with the Field Day "deployment" rapidly approaching.

Speaking of **Field Day**, this year's event will be held in what has become "the usual place" in the picnic area across Nyack Road from the Shell station and convenience store, thanks to the generosity and dedication of SFARC friend Grant Wells. The FD area is directly across the road from the station at 41965 Nyack Road in Emigrant's Gap. Directions are easy: driving east from Sacramento on I-80, proceed to the Nyack Road exit; at the end of the exit you'll be looking at the Shell station, convenience store, Burger King, etc.; turn right and the picnic area is "almost" immediately on your right-hand side – there are a couple of inlets to the area, so you might need to look around for the correct one. We'll set up a talk-in frequency on 2-meters, but 146.52 simplex is usually a good bet in the immediate area.

Field day officially runs from 11am PDT (1800Z) on Saturday, June 26 to 2pm PDT (2100Z) on Sunday, the 27th. The club station may operate a 24-hour period during that time. Setup will probably start about 9am on Saturday morning with the intent of having a station on the air by somewhere around 11am. I have spoken to Jetty Hill about the club using his call sign for the Field Day event and he has given his permission, so once again we will be proud to use W6RFF.

Please feel free to bring your tent, camper, or RV along with plenty of sunscreen and bug repellent. The club will provide hamburgers, hotdogs, rolls, sodas, and bottled water for lunch on Saturday, and the main course, rolls and beverages for dinner, as well. Please bring your favorite salads, side dishes, and desserts to share with your fellow amateurs and guests. You'll also need setups (paper plates, cups, utensils, etc) and chairs and perhaps a portable table. There will be ample power from the club supplied portable generator, but don't be afraid to bring your own, or maybe a battery or two.

We are planning on having two or three (number to be decided) standard FD transmitters operating at any given time, and there'll be a separate GOTA (Get On The Air) station, with a

control operator available for those who don't yet have hf privileges, or don't hold a license (some of our active members have gotten their licenses, or have upgraded, as a result operating at FD). Bring your antennas and radios, and let's see how they work!

So, tune into the SFARC net on 145.43- (pl 162.2) on Thursday evenings at 7:30pm PDT for late breaking developments, and plan on coming for the whole event, or just a visit – and bring a friend! But most of all come have some fun!!

BCNU at the meeting on the 11th, and then let's roll into Field Day 2004!

73,

Casey/W7IB

40 Years Ago

June 10, 1964

Gary, KQ6RT

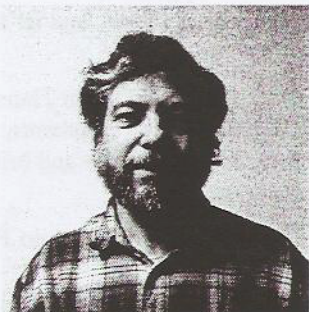
1. Meeting was called to order, at Weger's house this meeting.
2. Minutes were approved as offered, by vice-president.
3. Introductions were uniquely done by introducing the person on right hand side.
4. New members were inducted into the club and our congratulations to Rod Russel and Romeo Rivera.
5. Field Day preparations were discussed and Sage is to provide rope and 80 meter dipole and DX-40. Weger provides his generator and Elmo Griffith's Morrow Twins and RG-59 cable. Rolufs will have the club's generator in running order. Merryman will provide some cable, Sig some cable, Meryle some cable, Tracy will bring canvas, and Carman will bring his 2 meter Gonset.
6. Elmo Griffith showed his 8mm films in color of Tahiti and they were terrific.
7. Sage and Ken provided the refreshments for the evening.
8. Ken Weger won the gift certificate of Lombard's.
9. Otto Ruud won the Cal TV gift certificate.
10. Meeting was adjourned and refreshments served.

Respectfully submitted,

Kenneth J. Weger, WA6EMU, Secretary.

Satellite Report

Greg, KO6TH



Dubbed "AMSAT Echo", this Low Earth Orbit (LEO) satellite is scheduled for launch some time after June 29th, 2004. The exact date, if it is even known, has not been announced.

Echo is a multi-purpose satellite. Its two primary modes, FM "bent pipe" (phone) repeater service, and a 9600 BAUD packet bulletin board, will operate simultaneously. The phone service will be similar to the recently silent UO-14 or the currently intermittent SO-50. Earthlings will transmit on 2 meters, and listen on 70cm. Like SO-50, a 67 Hz PL tone will be required to activate the satellite's transmitter. This will help with spacecraft power consumption, by automatically turning off the transmitter while the spacecraft is not being used. Echo is planned to use 435.225 MHz for the downlink, and 145.920 MHz for the uplink. Power output is programmable from 1-6 watts. For comparison, AO-27 runs about a half watt of downlink power, so Echo should be easy to hear.

The packet system is similar to UO-22. Messages are uploaded to the spacecraft's computer memory by one Ham, and downloaded by another later on, possibly on the other side of the planet. The packet radio system runs at the higher efficiency of 9600 bits/second, compared with the 1200 speed of the Space Shuttle and Space Station systems. To get this higher speed, different modems must be employed, and special connections into the transceiver are made to access the wider bandwidth signal. The digital downlink will be at 435.150 mhz, at about 1 watt of power, with an uplink of 145.860 mhz. Spacecraft telemetry will also be mixed in with the BBS downlink traffic.

Once launched, commissioning of the new satellite will take from several weeks to two months, depending on any difficulties encountered. It will then be opened to the Ham population for use. The satellite is planned to operate 6 days / week in this normal mode. The 7th day (Wednesday) is dubbed "Experimenter's Day", where other modes (e.g. L band up, or 2.4 GHz down) will be used. There are plans to experiment with PSK-31, APRS, other bit rates for packet ranging up to 76.8 kbits/second, and an experimental SQRS receiver (whatever that is...).

Echo's orbit will be nearly "Sun Synchronous". That means that its orbit will pass over the same place on Earth at about the same time each day. There will be passes in the morning, and again in the evening. This is similar to many of the other LEO satellites, including AO-27 and SO-50.

More information on Amsat-Echo can be found on the AMSAT website at: www.amsat.org. There are links to all the AMSAT projects there.

73

Greg KO6TH

Upcoming Events

George, KG6LSP

Club potluck/picnic:

Saturday August 21, 2004

Regional Park complex #3

3770 Richardson Drive

Auburn

We have the site reserved from 0800 to 2000

(Same place as last year)

White Elephant Sale

Friday October 8, 2004

Auburn Library Beechwood room

1930--?

(Regular meeting place not ARD)

Christmas Party

Friday 10 December 2004

Maidu Community Center

471 Maidu Drive

Auburn

We have the Foothills room reserved from 1800 to 2300

(Same place as last year)

Sacramento Valley Section News

Jettie, W6RFF, Section Manager

EMCOMMWEST 2004: The Nevada group put on an excellent program for the Division Special Conference on emergency communications. The day and a half of several presentations on EMCOMM was well worth the time spent. Included in the displays outside, was the new Sacramento Area Red Cross communications van. This van has many types of equipment that will operate on most frequencies and modes. It also has a 70 foot collapsible mast that comes out of the center of the van. There also were some sheriff and county van as well as the van of the Tahoe Amateur Radio Association. All very interesting to browse through. The Reno groups are planning for the next one in 2005.

SECTION EMERGENCY COORDINATOR: As I mentioned last month, Dave Thorne, K6SOJ, will resign the position as of June 30. We need to replace him as soon as possible. The fire season is now with us, and who knows what emergencies that will bring. If you have experience as an District Emergency Coordinator or Emergency Coordinator, you may qualify for the position. A description of the duties of a SEC can be found in the ARRL web pages. Dave has developed a plan for the section and has many of the positions filled; so much of the initial work is done. Dave has also agreed to help out as consultant to the new SEC. If interested contact Dave or myself.

NORTH HILLS RC: Their annual Hamfest had an excellent turn-out and excellent weather – not too hot or too cold. I am sure they are planning for next year's event – probably, again, in May. Their "Bring a friend" night had a write up in the June QST.

FIELD DAY: Field day begins in a little over 3 weeks. Most clubs have a site picked out and plans made. Be sure you send a radiogram to me, so you will get the extra points. You can

count it sent as long as it was passed to someone else by radio. As usual I will try to visit several clubs at their FD site. Send an email to me giving your clubs location for FD at w6rff@arrl.org.

MT. SHASTA ARC: Long time club member Ted Graves. W6FKI. will be leaving Mt. Shasta and moving to Grass Valley area, to be close to family members. Nevada County club - keep your eyes open for Ted.

YUBA SUTTER ARC: The club provided communications for the "Tour de Lincoln" bike tour. Seven hams volunteered their time for this event. Lee, KC6MCI, relayed information on the one injured rider to Net Control. They have been invited to help out next year.

RIVER CITY ARCS: River City has announced that their annual Swap Meet will be held on September 25th at the Sutter Middle School. For more info about the club, go to www.n6na.org. Their June speaker was Grant, WD6CNF, who talked about software that he writes for amateur radio. VE test on 3rd Saturday, at 8:30 am, at Carmichael Elks Lodge.

BIKE RIDE: A bike ride on June 5th, starting at the Fairgrounds in Plymouth will have communications from 7 members of the El Dorado County ARC and 16 members of the Amador County ARC - 6 am until 6 pm. These two clubs combine their efforts several times a year, to provide public service.

YOLO AMATEUR RADIO SOCIETY: I visited their May meeting, at which they were planning for FD, that will be held at a member's ranch. I talked about the Broadband on Power line and the need to support the ARRL's fight against it. The club moved and seconded to send ARRL \$100 toward the BPL fund. Thanks guys and girls.

SHASTA CASCADE ARS: Their President Jim Bremer, KK6MM, wrote an interesting article on "It's All Relative". It discussed license restructuring and the effect it has on different hams - Techs, Extra, VHF, HF, Code/no Code, etc. Jim has been in commercial radio for years, as well as ham radio.

LICENSE RESTRUCTURING: The FCC has told hams that are Congressmen, that they are working on the restructuring program and we hope to hear something on it this fall.

TRAVEL: I will visit the Plumas County Radio Club on Friday, June 18, in Quincy. This will be my first trip to this club.

73,

Jettie W6RFF.

on a request from the National Antenna Consortium and the Amherst Alliance (NAC/Amherst) for a much longer filing deadline extension. The organizations said the June 1 reply comment deadline FCC would not allow stakeholders adequate time to prepare comments that address the full two-part National Telecommunications and Information Administration (NTIA) Phase 2 BPL study. The FCC said the NTIA has indicated that it soon will submit comments and a technical appendix that will include key findings of the Phase 2 report, which is due for release later this year.

NAC/Amherst had sought to have the FCC postpone the filing comment deadline until either September 1 or two months after the public release of the NTIA's Phase 2 study--whichever was later. The FCC said, however, that the additional three weeks should be "ample time" to respond to the anticipated NTIA submission, provided it's filed reasonably close to the anticipated May 28 date.

Noting that its Part 15 rules already permit Access BPL systems and that its February BPL NPRM places additional requirements on BPL systems over and above current Part 15 requirements, the FCC asserted that any further delay would diminish the Commission's ability to protect licensed users now occupying the HF spectrum. A further extension, the FCC added, also would "needlessly increase regulatory uncertainty" about BPL.

The FCC turned down a request that the FCC reissue in substantially greater detail the provisions of its proposed BPL rules concerning interference prevention and mitigation and the enforcement of standards.

The FCC does not routinely grant such time extensions, and it denied earlier petitions, including filings from the ARRL and NAC/Amherst, to extend the initial May 3 comment filing deadline.

FCC License Restructuring

FCC Chairman Michael K. Powell has assured US representatives Greg Walden, W7EQI (R-OR), and Mike Ross, WD5DVR (D-AR), that the Commission will act "as expeditiously as possible" on Amateur Radio restructuring. Walden and Ross wrote Powell a month ago to urge adoption of the ARRL's restructuring Petition for Rule Making (RM-10867) "in its entirety" along with rules changes needed to put it into place. Powell said the League's petition was one of many.

"At this time, the Commission staff is reviewing and analyzing carefully all of the petitions, comments and proposed rule changes in this area," Powell responded May 21. "Because this matter is of great importance to you and the almost 700,000 amateur radio operators nationwide, the staff is working diligently to create a comprehensive solution to address the proposals the petitioners have submitted." The next step in the process, he said, will be to prepare a notice of proposed rule making for the Commission's consideration.

In addition to the League's filing, Powell pointed out, the Commission received 17 other petitions for rule making that address examination requirements and operating privileges for Amateur Service licensees. The various proposals attracted

National Ham News

FCC Extends BPL Reply Comments Filing Date

ARRL Bulletin ARLB019

The FCC has extended the deadline to file reply comments (comments on filed comments) in its broadband over power line (BPL) Notice of Proposed Rule Making (NPRM), ET Docket 04-37, to Tuesday, June 22. The FCC acted this week

more than 5000 comments, he noted--more than 800 of them on the ARRL's petition alone.

In their letter to Powell, Walden and Ross expressed their belief that the ARRL's plan "will encourage the development, refinement and use of new technologies; increase the number of young people involved in Amateur Radio; and provide incentives for Amateur Radio licensees to pursue technical self-training and opportunities for volunteerism in the best traditions of our country."

Other restructuring plans were filed by the Radio Amateur Foundation, RM-10868, and by the National Conference of Volunteer Examiner Coordinators, RM-10870.

Fifteen other petitions for rule making came down on one side or the other of retaining the Amateur Radio Morse code examination requirement to operate on HF. Judging from Powell's letter to Walden and Ross, the FCC plans to address all 18 petitions within the framework of a single rule making proceeding.

Where In Blazes Am I?

What Time Is It In Greenwich?

Last month's navigation example was a quick glimpse of radionavigation in a fairly well developed state. Let's begin this month with a quick trip way back in time, for what was arguably the first use of radio as an aid to navigation ... passing time back and forth.

The first use of radio for navigation is pretty mundane. Ships (airplanes hadn't been invented yet) needed to know their position, and this required a knowledge of their latitude (distance north or south of the equator) and longitude (distance around the equator from some reference point). One method, called dead reckoning, required only that you knew your starting coordinates with regard to the reference point. Then, you keep track of your speeds and headings, and plot your position each day on a chart. Wind and currents at sea sort of screw this up, however. Just because the compass says that the pointy part of your boat is headed due north doesn't mean you're actually going due north. This error would build up with time, so, getting a daily "fix," critical to accurate navigation, was really tough. Incidentally, it was called "dead" reckoning because navigators would mark their estimated position with the notation "ded", standing for "deduced."

What they really needed was a way to find their current latitude/longitude at any time. First off, well before the invention of radio, world governments agreed that the reference point for latitude would be the equator. For longitude, the meridian connecting the poles that went through the Royal Observatory in Greenwich, England was 0° longitude and was termed the "Prime Meridian" (Britannia ruled the waves in those days). There really is a line painted on the ground at the observatory, and you can straddle it with one foot in each hemisphere. Useless, but it makes a cool picture.

Finding latitude is comparatively easy. Imagine a line drawn straight through the earth from the north to the south pole, which, to no one's surprise, is called the "polar axis." If you

extend this line out from the north pole far enough, it will come very close to a moderately bright star which we call Polaris or the North Star. This is fortuitous, because to measure your latitude, you need only measure the angle between Polaris and the horizon. At the north pole (90° latitude), it is directly overhead. At the equator (0° latitude), it is right on the horizon. Here around Sacramento, it's elevation is 38.94°. There are some possible glitches. You might not be able to find Polaris due to weather, you might not be able to find the horizon accurately, and Polaris isn't precisely over the north pole, but the method is quite accurate when things come together.

In the southern hemisphere, you can't ever see Polaris, so you're screwed. Well, just kidding -- while there is no star visible to the naked eye anywhere close to the extension of the polar axis out the south pole, it doesn't really matter. Other stars and the sun can also be used. You need to know the calendar date, have some tables, and it's a little more complicated, but navigators have no problem.

Incidentally, Polaris is the pole star in 2004. It also was in 2003 and will be in 2005. In fact, it will be for the lifetime of everyone reading this. However, the earth's polar axis precesses like a wobbling top -- tracing a circle in the sky. So while it points to Polaris now, it hasn't always (when the Pyramids were built, it was close to the star Thuban, and passages in the pyramids often line up with that star), and won't in the future. Fortunately for us, it is the far future ... it takes about 24,000 years for the axis to trace out a complete circle.

Finding your longitude is equally simple but contains what used to be a really insurmountable problem ... knowing the time at the Prime Meridian regardless of where you happen to be. The earth rotates 15° of longitude each hour. Thus if you wait until your local noon (based, for example, on when the sun is highest), and you check the time at Greenwich, the difference between those times, in hours, times 15 tells you your longitude. The problem, of course is, "What time is it in Greenwich." So, just set your watch or clock to GMT when you are there and then sail off ... how hard is that? Well, early clocks depended on various mechanical means of measuring off seconds, none of which functioned well -- or at all -- aboard ship. So, if you started in Portugal and you were trying to find North America, you were home free. "Sail sort of east and you can't miss it." You couldn't predict exactly when or where you would land, but, assuming you survived the Atlantic weather, you'd eventually get to land. On the other hand, if you started at San Francisco and your goal was Maui, that would be another problem.

When wireless was born at the beginning of the 20th century, marine chronometers were better and kept moderately OK time. However, if you sent "INT QTR" to a shore station, the answer would be the time at Greenwich, which you could then use to correct your chronometer. Being on land and in a reasonably controlled environment, the station's chronometer would be much more accurate than yours. You could also query several ships, figure the average of their answers, and use that ... not as accurate, but probably close enough. Early on, time was passed via radio from Greenwich to stations within range, and then relayed farther. Finally, the need for readily available time information led to standard time and frequency

stations such as WWV. While in Vietnam installing other sorts of aircraft radio navigation equipment we'll cover soon, my team and I would find our longitude by tracking a couple of bright stars with a theodolite while listening to JJY tell us GMT. This all seems like a small thing now, but at sea in the dawn of wireless, it could mean the difference between a successful voyage and death. Try INT QTR in your next CW QSO and see what happens!

In case you're interested, official commercial CW practice was to use the prosign INT (for "interrogatory") to indicate what followed was a question. This was because a question mark in morse duplicated the prosign IMI which meant either "please repeat" or "I repeat." Today, hams will send "QRL?" to ask if a frequency is busy. Listen back in time and it would have been "INT QRL," and "INT QTR" would have gotten you GMT to whatever accuracy the station you called knew it.

And, Last Month's Trivia Question?

The band is 160 meters, and the navigation system was LORAN-A. It's on the list for these ramblings, so stay tuned.

Following its May 17 launch from Nevada's Black Rock Desert, a solid-fuel amateur rocket carrying a ham radio avionics package easily exceeded its primary goal of attaining an altitude of 100 km--62 miles--considered the boundary between Earth's atmosphere and space, its sponsors say. An Amateur Radio direction finding team later recovered the rocket's avionics package intact. Avionics Team Leader Eric Knight, KB1EHE, told ARRL that the 21-foot, 10-inch diameter Civilian Space Xploration Team (CSXT) <http://www.civilianspace.com/> GoFast vehicle reached an altitude of 77 miles according to its onboard instruments, making it the first civilian rocket to do so.

"We well shattered any definition of space, and everybody's jubilant here," Knight told ARRL from Nevada. "Within two seconds into the flight we were already supersonic." An ARRL member, Knight said 75 to 100 people--many of them radio amateurs--witnessed the launch, and some asked how they could become licensed. The launch itself, Knight reported, "went like clockwork."

During the vehicle's descent to Earth, a ballistic parachute deployed to keep it from tumbling, slow its velocity and make it hit the ground nose first. "The avionics package looks pristine," Knight said. "It could fly again." That's not likely however, since the CSXT team is hoping the avionics will end up in the Smithsonian Air and Space Museum.

A volunteer aerospace tracking and recovery team of Silicon Valley Amateur Radio operators calling itself Stratofox <http://www.stratofox.org> zeroed in on signals from the fallen rocket, which came down in rugged, mountainous terrain some 25 miles from the launch site. Tiny bird-tracking transmitters operating in the 224-MHz range were embedded into the parachute shroud lines solely for tracking purposes.

The avionics team's homebuilt patch-type antennas served the 33-cm telemetry downlink and 2.4 GHz Amateur TV transmitters as well as the onboard GPS units. The color ATV system was able to provide some photos during the first several

seconds of the flight, but Knight said the rocket's spin--about nine cycles per second--caused the video to blur after that.

The avionics team includes eight Amateur Radio licensees, most of whom also were involved in an unsuccessful 2002 CSXT launch attempt. The entire 18-member CSXT team is headed by CSXT founder and Program Director Ky Michaelson, a retired Hollywood stunt man.

The United Kingdom Rocketry Association this week conveyed congratulations to the US team. "It's certainly a major achievement," said John Bonsor, a UKRA founder.

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SIERRA FOOTHILLS AMATEUR RADIO CLUB
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SIERRA FOOTHILLS AMATEUR RADIO CLUB
2004 MEMBERSHIP APPLICATION

Name: _____ Call: _____ Class: _____ e-mail: _____

Address: _____ City: _____ State: _____ Zip: _____

Associate Name: _____ Call: _____ Class: _____

Phone Number: _____ Application: (Circle One) New Renewal

Member Dues: Circle Amounts That Apply. Applications received in the middle of the year will be pro rated. Contact the President or Treasurer for exact rate.

Membership:	\$22.00	Name Badge:	\$6.50
Associate:	\$ 7.00	Repeater Donation:	\$ _____
Auto Patch Donation:	\$ _____	Newsletter Booster:	\$ _____
Miscellaneous Donation:	\$ _____	Christmas Donation:	\$ _____
Worldradio Renewal:	\$ _____	TOTAL:	\$ _____

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Payment: _____ Check Number: _____ Cash: _____