

Debra Johnson K1DMJ, Editor

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Resources for Licensing Instructors

<http://www.arrl.org/es/instructor-resources/>

Resources for Teachers

<http://www.arrl.org/FandES/ead/teacher/>

[Education & Technology Program:](#)

<http://www.arrl.org/FandES/tbp/>

[Teachers Institute on Wireless Technology:](#)

<http://www.arrl.org/FandES/tbp/ti.html>

Space Traveler Richard Garriott Talks to Schools from the ISS

By Rosalie White, K1STO

Besides the many individual hams who have been delighted by the contacts they've made with Richard Garriott W5KWQ on the ISS in recent days, a number of Education & Technology Program schools have joined in the action. ETP teacher Ronny Risinger, KC5EES, has been teaching his students at the Liberal Arts and Science Academy High School in Austin, Texas, about technology, ham radio and space in preparation for the ARISS contact with Garriott. The school district brings its gifted and talented students to the academy, and Risinger's students study mechanical engineering, computer processing, and "Planet Earth" focusing on planet life, microbiology and space travel. Ham radio is an elective to the curriculum, and covers radio waves, frequencies, antenna systems and designs, satellite tracking, and communications.



Space traveler Richard Garriott aboard the ISS

Teacher Richard Glueck, N1MDZ, at the Orono Middle School, another ETP school, proudly boasted their Garriott QSO. Glueck wrote, "Orono Middle School, Orono, Maine, made contact with Richard Garriott aboard the space station, shortly before 2pm, EDST, this afternoon. Richard recorded our contact and wished us well. We returned the greeting. It made the afternoon for my Social Studies class." Glueck reported that his school was using an Icom 910, provided by an ARRL grant, and a 2 meter/70cm ground plane antenna. "We made the contact using straight FM voice. Our contact was heavy on the static, and we were hearing Garriott respond to various hams in Iowa and Michigan, as well. We are hearing the data transmission of the SSTV during the early morning passes..." He provided some additional information about his set-up. "I have a donated PC dedicated to tracking the space station and few other satellites, 24/7/365. I use Satscape, which is an outstanding program, freeware, available for www.satscape.com. The graphics are excellent, and with a computer with enough memory, there are a variety of views that really give a good impression of how satellites affect our daily lives on the planet below. I am one of those who clearly remember the launch of Sputnik, in 1957, so the growth of space technology and human

ARISS Program

FAQs:

<http://www.rac.ca/ariss/faqariss.htm>

Application:

<http://www.rac.ca/ariss/arissapp.htm>

Continuing Education Program

<http://www.arrl.org/cep/>

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inhabitation impacts my life in a huge way. I firmly believe that while modern kids take space flight and satellites for granted, that this is a good thing, amateur radio is the most significant manner in which teachers can get kids to interact with spaceflight in a personal manner."

Another of Garriott's school QSOs was with the Pinehurst School in Ashland, Oregon. The K-8 students learned about the technology of the ISS, history of space travel, and they engaged in amateur radio learning projects, including the building of a turnstile antenna that they used. They also downloaded Garriott's SSTV images.

The ARISS Team estimates that Garriott made over 300 voice QSOs. Schools and hams in the amateur radio community uploaded hundreds of Garriott's images to the special web site the ARISS Team developed with an AMSAT member. The member's connection was through a 5 Mbps fiber optic link, but several times during Richard's last week in space, the link got full and the fiber optic router would lock up for minutes at a time. The ARISS Team got permission to move to a new host – University of California, Berkeley. The school will play host (<http://www.ssl.berkeley.edu/>) until ARISS can find a better home for the archives.

These experiences do a lot to reinforce the adventures that amateur radio can deliver right into the hands and ears of the everyday citizen. We extend our thanks to all of the dedicated ARISS volunteers who make this cooperative program with NASA and international space agency partners as well as the Space Travelers and Astronauts who are invested in the value of the outreach to make these connections happen.

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Youth Protection Awareness

Several instructors have asked whether we have any guidelines to share with instructors who are working with groups of young people while offering license instruction or mentoring. Though ARRL does not have an official set of policies and we don't do background checks on instructors, we do recommend you review the guidelines developed by the Boy Scouts of America. The policies developed by the BSA are certainly appropriate to any situation in which adults are working with youth, protecting youth and adults alike. You can review them at: <http://www.scouting.org/YouthProtection.aspx>.

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Check out these resources!

Retired Hewlett Packard engineer and dedicated Extra class radio amateur instructor, Jack Tiley, AD7FO has just completed a study guide for the Extra class license material. His guide comes complete with supplemental material to demonstrate calculations required to respond to



exam questions and provides explanations to clarify some concepts. Jack has made his study guide available to instructors and students alike who are working with the Extra Class exam material. You can download the guide in pdf from our instructor resource page at <http://www.arrl.org/es/instructor-resources/>. You'll find it listed under "Shared Instructional Resources and Study Guides." Jack will also make his study guide available in Word format if you want to tinker with it for instructional purposes.

And as a reminder, be sure to tap into the supplemental resources provided by ARRL licensing manual author Ward Silver NOAX. Web resource pages provided by Ward for each of ARRL's study guides contain additional reference material useful to you as an instructor and your students who are preparing for any one of the license exams. You'll find math tutorials, tutorials on scientific notation and a host of other links to reference materials you can employ in your instruction or direct your students to. Click on the chapter of the ARRL study manual where the discussion of relevant content appears and you'll find the supplementary information Ward has provided on topics in the chapter. You'll also find study guides for each of the license class levels that arrange the question pool questions in order of appearance of content discussion in our study manuals. Here are the URLs for the resources pages for each of ARRL's license manuals:

- www.arrl.org/hrlm
- www.arrl.org/gclm
- www.arrl.org/eclm

New to instruction and don't know how to begin? There's help from archived material in our Education Forums available on our website, and there's help from other ham instructors who belong to the Yahoo! Group set up for dialog and mutual help for ham radio instructors. Go to ham_instructor@yahoogroups.com to apply to join the group. Be sure to visit our resource page for instructors to find ARRL materials as well as shared instructional resources developed by others.

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Interpreting the Rules—NOT YOUR JOB!

By Dan Henderson N1ND, ARRL Regulatory Information Manager

As instructors, you work very hard to recruit and organize your classes and then prepare the material and the demonstrations and activities that



you will present. You want to provide the best, correct, and most up-to-date information you can to the students in your classes and activities that will engage their interest. With that in mind, there is an area that needs to be approached with caution.

ARRL received the following information not long ago. While reviewing some material from the ARRL Technician's license manual with his class, an instructor came across some statements

which in his opinion changed an interpretation of Part 97 that he had read a few years ago. His statement was “the new material isn’t the practical way we’ve always done it, so I am just going to tell the class to ignore the interpretation from the study materials...” This approach causes concern.

The materials in the ARRL study guides are there because our goal is to provide accurate information to guide the licensee to operate “Legally, Safely and Appropriately.” Rules interpretations in the materials have been vetted by the experts (ARRL and FCC officials) who work with them every day to ensure they are correct and accurate. While at times they may seem burdensome, at the end of the day, they are the rules.

Sometimes instructors believe there is some “gray area” in areas of implementation. A case in point: there are numerous differing interpretations on the topic of appropriate use of amateur radio during emergencies. This is an area of major concern at the ARRL and is a topic on which the ARRL will be saying a lot more in weeks to come—watch for more information on the ARRL website.

The rules change from time to time, and you can always seem to find some source (official or unofficial) that may support a different point of view. The ARRL encourages instructors to provide students with the most current interpretations and applications of the rules. This allows your students to be able to enjoy their new hobby without the prospect of facing possible FCC action because of illegal operation.

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Tips on Promoting Licensing Classes

Allan Batteiger, WB5QNG is in high demand in Texas to instruct ham radio licensing. He gets lots of interest from groups and agencies that are interested in ham radio for emergency communications. He shared with us some examples of the very effective advertising he uses to promote his classes.

Because he’s been doing this for a while he regularly has people contacting him asking him when he’ll be offering another class. He stores email addresses for all of these folks and when he is ready to launch a class contacts them all by email. His email begins: “Greetings! You are receiving this email because you have expressed an interest in Amateur Radio Classes. I have recently added a new class at the Red Cross HQ at ...” Some of the people on Allan’s master distribution list forward his announcements on to people in their circle. He’s got a system of viral advertising!

Allan also sends announcements that are designed to be personalized by the person relaying it. Here’s how such an announcement might begin:

Subject: Ham Radio License Class Schedule for September 26

Once again, this is Keith Bridges calling CQ CQ CQ. Calling CQ on the ham radio bands means you want to talk to any station anywhere that

might be listening. I am a team leader on the American Red Cross Disaster Action Team for Collin County and I am an Amateur Radio operator You have received this email because several of the DAT members, Red Cross volunteers and staff have expressed an interest in becoming a licensed Amateur Radio operator..."

For the full text of this and other announcements [click here](#).

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2008 Teachers Institute Extends the Reach of Education & Technology Program

Plans are in the making for 2009 Teachers Institute professional development seminars. We anticipate offering 6 sessions once again in 2009. We're also working out plans to offer an advanced TI for participants who have the requisite experience. More details on dates and locations will be forthcoming.

This past summer we offered a very successful series of workshops with 77 teachers from 29 states. You'll recall that we also introduced two new instructors, Nathan McCray K9CPO and Miguel Enriquez KD7RPP, to our instruction team. New resources added to the curriculum included a radio telescope and sudden ionospheric disturbance (SID) exploration resources as well as a new seismometer to study earthquakes. If you missed the season wrap-up article on our website you may want to read about it here: www.arrl.org/news/stories/2008/08/15/10264/.



ETP instructors Nathan McCray K9CPO and Mark Spencer WA8SME set up for a satellite contact

We now have over 320 schools participating in our Education & Technology Program. An updated list has been posted to: www.arrl.org/FandES/tbp/big-proj-schools.html

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Recent Statistics on Licensing Classes and Exams

There have been 415 classes listed on ARRL's website with scheduled start dates through October. Classes listed this year include 49 scheduled in California, 29 in Ohio, 35 in Washington, 59 in Texas, 22 in Virginia and 26 in Pennsylvania.

As of the end of September, there have been 21,547 new hams licensed by all VECs this year, as we reach toward the goal set by the ARRL Board of Directors of licensing 30,000 new hams in 2008.

| ALL VEC ACTIVITY | Jan 1 to Sep 30, 2006 | Jan 1 to Sep 30, 2007 | Jan 1 to Sep 30, 2008 |
|------------------|-----------------------|-----------------------|-----------------------|
| LICENSE TYPE | LICENSE COUNT | LICENSE COUNT | LICENSE COUNT |
| EXTRA | 2,362 | 5,013 | 5,080 |
| GENERAL | 3,037 | *18,322 | 9,513 |
| TECHNICIAN | 15,264 | 18,696 | 19,659 |
| TOTAL | 20,663 | 42,031 | 34,252 |

*Effective February 23, 2007 the FCC changes the Amateur Radio Service Rules and no longer requires applicants to pass a Morse code exam. This creates a spike in the number of individuals seeking an upgrade to General.

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ARRL members first must register on the Members Only Web Site, <http://www.arrl.org/members/>. You'll have an opportunity during registration to sign up for e-mail delivery of this newsletter as well as others, including the ARRL Letter, W1AW bulletins, and other material. ARRL members may subscribe to the ARRL Instructor/Teacher Newsletter by going to the Member Data Page at: <http://www.arrl.org/members-only/memdata.html?modify=1>

Note that you must be logged in to the site to access this page. Scroll down to the section "Which of the following would you like to receive automatically via email from ARRL?" Check the box for "ARRL Instructor/Teacher E-Letter " and you're all set.

Past issues of this newsletter are available at <http://www.arrl.org/FandES/ead/instructorNews.html>. Issues are posted to this page upon publication.

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