



in the Classroom



JANUARY 1998

Yea! It's School Club Roundup Time

Carol Sharp, KC5JEM, and Jim Sharp, W5AP, sponsors of the Heritage Middle School Ham Radio Club, Colleyville TX, report: "The kids love to compete and really get excited. We demonstrate techniques for making contest contacts, and draw up a schedule so that everyone takes turns operating. Some get tongue-tied, but all come away with better communication skills, and have a good time. We encourage students from overseas to make contact with their home countries — we had QSOs in German, French, Mandarin and Spanish. You should have seen one student's face when he called CQ in Spanish, and a ham from his hometown in Venezuela answered! During SCR, if hams want to activate their schools but not get many students involved, I encourage them to enter in the Individual Category, since

they as adults are competing with students. SCR is a great student involvement/ham radio activity, and I thank N2RQ for organizing it." Rob Welsh, N3RW, at the High School for Engineering and Science ARC, said, "Prior to SCR, we run training sessions and give students a script containing a typical SCR exchange, Q-codes, and the ICAO phonetic alphabet."

The SCR is sponsored by the Council for the Advancement of Amateur Radio in the New York City Schools (CAAR/NYCS), the ARRL and the Hudson Division Education Task Force. In response to suggestions, CAAR/NYCS has changed the 1998 rules to: SCR operating times are now any time of day, with a new limit of 6 hours in any 24 hour period, which should increase DX activity. Also, we will issue separate award certificates for elementary, middle

school, high school and college/university levels for US and DX entries. We encourage ops to take time to chat beyond the contest exchange.

Rules:

1. Object: Stations work as many stations as possible, especially school clubs.

2. Contest Period: 1300 UTC Monday, Feb. 9, to 0100 UTC Saturday, Feb. 14. Operate no more than 24 of the 108 hours, with a maximum of 6 hours in any 24 hour period. Logs must show on and off dates and times; off periods must be at least 30 minutes.

3. Classes: Single transmitter only:

(I) *Individual or Single Operator* (non-club)

(C) *Club or Multioperator Group*

(continued on next page)

Kids Aren't Interested in Ham Radio?

A seventh grader recently read several of Cindy Wall's (KA7ITT) youth adventure books (sold by ARRL for \$6 each), including *Easy Target*, for a required book report. He wrote to Cindy to find out what she does on the air. He and his dad bring along their 2-meter radios each weekend while dirt biking, and are building a QRP 40-meter transceiver. He writes, "I've been practicing soldering on other circuit boards so that I won't ruin the one in the kit. I like to mix ham radio with my other hobbies, including hiking." He is using ARRL books to earn a Novice license.

Coordinating School Nets

Phyllisan West, KA4FZI, writes about the difficulty of coordinating a wide-coverage school net. She feels that several well-advertised calling frequencies where youths can congregate would be more practical than a net. Her logic is based on the following discussion.

Problems with a wide-range net include East Coast and West Coast schools where classes meet in early morning or late afternoon and the two Coasts can't sked because of time zone differences. Daytime nets leave out students who have home stations, but no radios at school. Daytime nets can be foiled by school assemblies or field trips. With propagation phenomena, if a Net Control Station (NCS) is in Montana, it may not be heard in Florida.

On the other hand, well-known calling frequencies on popular frequency bands would permit QSOs at any time of day or evening, and allow for band conditions during various seasons of the year. Having a number of calling frequencies lets students select bands for longer or shorter geographical distances — whatever region they are studying in their classes. Not having to depend on an NCS to call a net to order would keep students from giving up if they cannot hear the NCS. It also allows for multiple QSOs on the same frequency if there were no interference from stations in different parts of the country.

How about using calling frequencies that are designated for the School Club Roundup? (See article above.) Let's hear your comments for doing so two days a week. What days are best for your students? Now that 10 meters is beginning to open up with the proliferation of sunspots, maybe Carole Perry's (WB2MGP) "CQ All Schools Net" will become reacti-



During Fox Hunts, students can test antennas and receivers that they built. Boulder (CO) area ham Eric, KG0YS, stands watch as Blair, KB0ROM, sits atop a cable-TV box, which he later found out was the fox! Photo by KE0OG.

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(non-school) — Multiop Groups can use *only one* call sign.

S) *School Club* or *Group* (grades K-12, college or university) Any station operated at school, and those formed for the sole purpose of operating the SCR.

4. Exchange: Call sign, RS(T), class (I, C or S), US state or DX country. An example, **N2RQ DE W2CXN 57(9) S NY**.

5. Scoring: You may work stations once each on phone and CW (digital modes count as CW). No repeater contacts except satellite and "real-time" packet. Score 1 point for each phone QSO and 2 points for each CW QSO. *Multiplier:* [Number of states plus number of DXCC countries] plus [2 x number of class C QSOs] plus [5 x class S QSOs]. QSOs with school stations are given a multiplier of 5, making them the most desirable stations to work. Contacts with KA2NRR count as a 5x multiplier. (KA2NRR was the creator of the contest that became the SCR). *Final Score:* Multiply QSO points by multiplier. PLEASE use the SCR summary form to avoid errors, especially for your first time in the SCR. (See 6 below.)

Suggested HF Frequencies (kHz): Use all amateur bands except 30, 17 and 12 meters. Do not use VHF or UHF repeaters nor the national calling frequency (146.52 Mhz). Only use recognized simplex frequencies such as 144.90-145.00; 146.49, .55, 58; and 147.42, .45, .48, .51, .54 and .57 MHz.

CW	Phone
1800 to 1810	1855 to 1865
3530 to 3580	3850 to 3880
7030 to 7080	7225 to 7255
14,030 to 14,060	14,250 to 14,280
21,050 to 21,080	21,300 to 21,330
28,050 to 28,080	28,550 to 28,580

Novice CW	Novice Phone
3685 to 3705	28,350 to 28,400
7110 to 7130	
21,110 to 21,130	
28,110 to 28,130	

6. Reporting: For IBM and compatibles software (SCR-LOG V3.x written by AD8B), email requests to caarnycs@aol.com. Download SCR-LOG from <http://www.acs.oakland.edu/barc.html>

Select --> The BARC Archives
--> PC stuff
--> logging/
--> SCR-LOG.ZIP

Or send a large self-addressed stamped envelope (SASE) or a label and postage for log and entry forms to SCR, c/o **Lew Malchick, N2RQ**, Brooklyn Technical HS, 29 Ft Greene Pl, Brooklyn, NY 11217. Logs must include exchange information, bands and signatures of all ops and authorized club official or trustee. Indicate total hours and operator/loggers, and type of school. Dupe sheets are required for entries over 100 QSOs. Computer entries on disk are preferred (use SCR-LOG or the ARRL Suggested Standard File Format) — label the file names and formats. If you aren't sure Lew can handle your file, call or write to ask. Postmark entries to Lew by March 16, 1998 (30 days after end of SCR).

7. Awards: Certificates for the top three entries in each class; School Club class is divided into elementary, middle, high school and college/university. DX is listed separately at the end of US entries. A special certificate is awarded to any station working 10 or more school clubs. Send a large (9 x 12 inch) SASE or a mailing label and sufficient postage or IRCs for complete results and information about CAAR/NYCS. We have always sent a certificate for each entry, but with increased participation and workload, entrants who don't send appropriate postage, envelope and mailing label may not get a certificate.

School Rally for License Class

How do you get students into your licensing class? How about a school rally? Scoutmasters successfully run school rallies for recruiting junior high students to scouting. You can do the same thing to recruit students to your license class. Scouters design a short program of activities for the rally. The activities for your rally could be showing students a short segment of a videotape about ham radio, and passing around props such as a hand-held radio or resistors. Bring up the autopatch, have a laptop computer with satellite-tracking, let students tap out their names on a Morse code key (use a chart of di-dahs, not dots and dashes), or set up an ATV demo. Give students written invitations to take home to mom or dad with information about your class and our great hobby. If the class is after school hours, you may have some parents come to the class with their girls and boys.

Your Influence

Teachers always hope they have a good impact on students. This story is condensed from one that **Karen Thorpe, N0TDW**, received from **Marge Conroy, N1VCX**.

"He was in the third grade class I taught in Morris, Minnesota. All 34 students were dear to me, but Mark Eklund was one in a million — he had a happy to-be-alive attitude that made his occasional mischief okay. Mark talked a lot; I had to remind him again and again that talking without permission was not acceptable. His sincere response was always, 'Thank you for correcting me.' One morning my patience grew thin when Mark talked once too often. I made a novice-teacher's mistake; I said, 'If you say one more word, I am going to tape your mouth shut!' Ten seconds later Chuck blurted out, 'Mark is talking again.' Since I had stated the punishment in front of the class, I had to act. I tore off two pieces of masking tape, made an X over his mouth, returned to the front of the room, and glanced at Mark to see how he was doing. He winked at me; I started laughing. The class cheered as I walked to Mark's desk and removed the tape. He said, 'Thank you for correcting me.'

"A few years later I taught junior-high math, and Mark was again in my class. He was just as polite, but did not talk as much. One Friday, things didn't feel right. We had worked hard on a new concept all week, and I sensed the students' frustration with themselves and one another. I had to stop the crankiness. I asked them to list the names of students in the room on two sheets of paper, leaving a space between each name. Then I told them to write the nicest thing they could say about each classmate; it took the remainder of the period to finish. That Saturday, I wrote each student's name on a sheet of paper, and listed what everyone had said about that individual. On Monday I gave each student his or her list. Before long, the entire class was smiling. 'Really?' I heard whispered. 'I never knew that meant anything to anyone!' 'I didn't know others liked me!' No one mentioned the papers again, but the exercise accomplished its purpose. The students were happy with themselves and one another again.

"Several years later, my dad phoned to say, 'The Eklunds called last night.' I replied: 'I haven't heard from them in years. I wonder how Mark is?' Dad responded quietly: 'Mark was killed in Vietnam; the funeral is tomorrow, and his parents would like you to attend.'

"At the funeral, all I could think was, 'I would give all the masking tape in the world if you would talk to me.' Mark's dad said, 'We want to show you something,' taking a wallet out. 'They found this when Mark was killed. We thought you might recognize it.' He removed a worn paper that had been taped and refolded many times. I knew the paper was the one on which I had listed the good things Mark's classmates had said about him. 'Thank you for doing that,' Mark's mother said. Mark's classmates gathered around. Charlie smiled sheepishly and said, 'I have my list in the top drawer of my desk.' Chuck's wife said, 'Chuck asked me to put this in our wedding album.' 'I have mine in my diary,' Marilyn said. Vicki took out her wallet and showed her worn list, and said, 'I think we all saved our lists.' That's when I cried. (By Sister Helen Mrosia.)

Morse on the Web

Chuck Adams, K5FO, is giving Morse training via his Web page. He asks everyone to get the ARRL's *Your Introduction to Morse Code* audio CD set because, he says: "You can't wear them out and you can copy them onto audio tapes to listen to anywhere. Also, you can instantly skip to any section of the CD that students need practice with. Chuck is doing Morse training, because it is his favorite mode of operation in our great hobby, and he wants to share the fun. On his Web page, he reminds us that Morse is a language of sound that is learned by some memorization, and then further ingrained into students' brains as they use it often, on the air. He tells students to throw away any book or written information about Morse, since it is an activity that uses auditory skills, and is best learned by stressing auditory practice. He asks students to set a speed goal and be positive about getting to it. Then he gives a number of tricks for learning code. To see Chuck's Web page, go to <http://reality.sgi.com/adams/>

Flannel Board

Here is an idea that was discussed at the ARRL Education Forum at the ARRL Southwestern Division Convention in Riverside, CA, this fall. Remember flannel boards? They can easily be utilized when studying block diagrams, or schematic diagrams and schematic symbols. Have students research and draw schematic symbols and the components for block diagrams onto felt pieces. When learning how to build block diagrams and schematic diagrams, the students can easily maneuver the pieces around on the felt board.

Several Funding Ideas

We often share funding ideas with our readers, and here are several. **Missy Hollenbeck, AA0OF**, won a mini-grant of \$500 from the Texaco Foundation (2000 Westchester Avenue, White Plains NY 10650). Her plan was to have a QRP Building Party, and the grant money was used to purchase 10 transmitter kits (circuit boards). Students designed unusual packaging for their circuit boards — tennis shoes and oil filter boxes being the most unusual. Teachers, parents and students worked together at the after-school QRP Building Party, and Missy's story was published in the November issue of *Educational Leadership*. Her idea was a terrific educational classroom activity, but if you can't apply for a grant, approach your area Amateur Radio Club to ask if they might purchase kits for your class. (Another first for Missy — her area Public Broadcasting Station recently contacted her to write lesson plans that involved technology for their special show on the Lewis and Clark Expedition. Not one to let go by a chance for Amateur Radio PR, she incorporated Amateur Radio activities! See http://www.pbs.org/lewisandclark/class/idx_les.html)

Charles Reno, WA8WKQ, a proud and happy recent Tandy Scholar winner, has taught physics, math and computing since 1959. He is a teacher at Hawken School, Gates Mills, OH, and says: "I have seen many students get strong through ham radio and go on to great schools and careers in engineering." He also taught an all-day workshop — licensing 6 physics teachers — at the American Association of Physics Teachers' annual meeting, plus putting on a demo station.

Toyota USA Foundation has education grants for K-12 math and science programs. Check www.toyota.com/times/commun/feature/founhome.html The American Association of Fund Raising, 25 W 43rd St, Ste 1519, New York NY 10036, has a publication called "Giving USA" that may help you.

Partnership with Your Community

Partnerships involving schools can encompass various parties — between schools and business, between academic and technical teachers, elementary schools and high schools or high schools and colleges. With a partnership, students get the benefit of others' knowledge, or lifetime experiences and career choices, things they might not otherwise attain during the year. Joint cooperation can even take place between teams of students; this is the type of work situation they will find in many workplaces. Look around your community for potential partners that will benefit your students — think about local industries that might provide work-site learning opportunities or donations of equipment and supplies, once you describe your ham radio classroom program to the companies. Businesses will send speakers to talk about their industry, career preparation and skills important to their industry. One of your goals is to make your students as employable as possible, having them a step ahead of the pool of entry-level employees they will have to compete against. The company may even want to do some job-related training to encourage graduates to pursue the appropriate post-high school education. Students may improve their attendance and academic achievement when they see real-life reasons to be in class.

If you are thinking of developing a partnership with area businesses and community groups, here is a good idea that originated at the ARRL Education Forum at the ARRL Southwestern Division Convention. One way to motivate companies or service groups to assist you with volunteers in the classroom or with funding is to offer an annual service award for the company or service group that has helped you the most during the school year. Publicize the award in the local paper in the fall, and ask your local ham radio club to post flyers on the bulletin boards where they work. At the end of the year when you've decided who deserves the award, ask the company if you can present the award to the president, and take photographs to send to your local paper. The company or service group may do even more to assist next year!

Amateur Radio Projects

Teachers design all types of Amateur Radio educational projects for their students — tracking a particular satellite at the same hour for several days in a row, making a QSO with the Russian Mir Space Station, a fox hunt or a special events station. Whatever project you create, you can name students to teams that will perform specific tasks. Learning to work in teams is good experience for your students toward their future careers as a part of team projects. Here are some teams, and corresponding tasks, that you can use in your next project:

- * Project Management Team - develops schedules, public presentations, newsletter articles and other PR releases, and even a budget.
- * Design Engineering Team - designs, builds, tests or operates all equipment needed to carry out the project.
- * Weather and Ground Control Team - forecasts weather affecting any outdoor activity, creates a grid map of the site, and controls countdown for beginning of activity.
- * Data Management Team - collects, records, stores and distributes data learned during the project.

Field Trips

Most students love field trips and learn a lot from them. (Your editor can remember grade school field trips from years ago!) Three good trips to consider are visiting a commercial broadcast station, the 911 dispatch office of the local police department and the Emergency Operations Center for your county. When calling to ask for a tour, carefully specify the age of the students you are bringing, and ask that the tour guide talk to students about how mastering their studies can lead to interesting careers.



ARRL Electronically

Don't forget that you can contact us at EAD@ARRL.ORG to get this newsletter sent to you much more quickly via e-mail. Also, send us any comments, suggestions, good ideas, teaching techniques or stories that you'd like for us to share via this newsletter. Also, if your e-mail address has changed, and you haven't told us, please do...

ARRL Training Materials

As always, here's the list you request of the current editions of ARRL training material. The edition number and printing number are listed in the first pages of each book—look for the copyright box. If the book is a new printing, it has minor updates. If the book is a new edition, it has gone through major revisions. Abbreviations are as follows: Now You're Talking! (NYT), ARRL's Tech Q & A (ATQA), General Class License Manual (GCLM), Advanced Class License Manual (ACLM), Extra Class License Manual (ECLM), FCC Rule Book (FRB), ARRL Novice/Technician Instructor's Guide (NTIG) and ARRL General Class Instructor's Guide (GIG).

- NYT 3rd edition: All printings (good through June 30, 2001)
- ATQA 2nd edition: (good through June 30, 2001)
- GCLM 2nd edition: All printings (good through June 30, 1998)
- ACLM 4th edition: All printings
- ECLM 6th edition
- FRB 10th edition: All printings
- NTIG 3rd edition: Use with 3rd edition of NYT (good through June 30, 2001)
- GIG 3rd edition: Use with 2nd edition of GCLM



Brian Milesosky, N5ZGT, of Albuquerque, NM, is congratulated for earning the 1997 Young Ham of the Year award, which included a radio and several other prizes, including *The ARRL Operating Manual*. Write for details about the award: YHOTY, 28197 Robin Av, Santa Clarita CA 91350. Photo by WA6ITF.

Learning Mediums

Paul Dean, WB9HGZ, Charlottesville, VA, sent an e-mail note to tell us that his boys, Mike, KE4UKX, and Matt, KE4UKY (13-year-old twins) passed their Advanced Class exams this fall. They studied with the ARRL video course and exam-review software to meet their goal. Paul wrote, "I watched several sections with the boys, and was quite impressed with the series. The boys also used the General class videotapes last year, with equal success."

Meantime, **Paul Dressel**, vocational electronics teacher (11th and 12th grades) in Fremont, MI, uses ARRL educational publications to teach basic electricity and electronics (2.5-hour sessions each day, comprising 450 hours each year) to better prepare his students for developing control projects using radios as the controlled device. He feels that what's learned for the Amateur Radio license is an excellent basis for various software and hardware projects.

Pathfinder Engineer/Ham

Gordon Wood, WA6NVA, of La Canada, CA, credits ham radio for starting him on the path that led to him becoming chief engineer for communications for the NASA Pathfinder Mission. Gordon works at NASA Jet Propulsion Lab, and their Mars Pathfinder Mission received great TV coverage this past summer. He got into ham radio at age 12 when his father bought him an old shortwave radio at a thrift shop.

As a teacher, you never know what your ham radio students will end up doing as adults!

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