

# Robbing the Cradle: Aggressive Recruitment of Young Hams

An Ohio teacher has a plan of action to get more young people involved in Amateur Radio.

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As a high school teacher, I have had experience with trying to interest teenagers in Amateur Radio. The results have been disappointing. Regardless of whether I have made a lot or a little effort, only a couple of pupils get the Novice license each year, although several faithfully attend the weekly meetings. Competition from other clubs, band, sports, jobs, computers, school work and friends seems to take its toll of prospective hams.

Two years ago, I received a grant from the American Association of Physics Teachers to set up an OSCAR 10 station. The Canton Amateur Radio Club donated some of the proceeds of its annual hamfest to our project, several pupils helped to build antennas and a tripod, and to sell raffle tickets. Yet, only one girl passed the Novice test. I decided that this spring I would try my hand with the younger group. This article is intended to share with others my experience and perhaps motivate other hams to recruit some of the youngsters before other interests take over.

"Would you guys like to study for your Novice licenses this summer?" "Yeaaaah!" So began what, in another type of journal, could have been titled "How I Spent My Summer Vacation."

In early May, my oldest son, Charles, celebrated his birthday with a party for a few of his friends from school and Cub Scouts. One of the activities included a demonstration of Amateur Radio. The results were several pairs of wide eyes.

Near the end of the school year, I conducted the above conversation with my sons, Charles, 11, and Evan, 9. I asked them if they would like to have some of their friends study with them. Receiving a strong affirmative, I duplicated a letter explaining to their friends' parents that I would teach a study class for the Novice license, and explained a little about Amateur Radio. The ARRL brochure *Amateur Radio: The World At Your Fingertips* was attached to the letter, and the package was distributed by Charles and Evan to five of their friends at school. All of the parents responded favorably, and the



The Novice class of seven 9- and 11-year-olds really got into the building spirit, with Dick, KC8OU, supervising the soldering. Five of the boys went on to get their Novice licenses.

class began on the Monday morning following the end of the school year.

The class was scheduled Monday through Thursday, from 9 to 10 AM, for three weeks to see if there was any progress and interest. As it turned out, we continued for a total of five weeks. The parents did an excellent job of delivering the boys to my home promptly, and of helping them study each day. And the results were gratifying: five of the seven boys passed the Novice test by the end of the five-week period.

The cost to the parents was \$20, which covered expenses for the *Tune In The World* package and parts to build an audio oscillator with a key for code practice.<sup>1</sup>

## The First Two Days

Richard Dager, KC8OU, came out to help on the second day as we completed construction of the code-practice oscillators begun the first day. Dick and I each furnished two soldering irons, and could keep a watchful eye on the boys as they learned to solder. The oscillator uses a 555 IC. For reasons of simplicity, cost and size, no volume or tone adjustments were included. To facilitate the first soldering

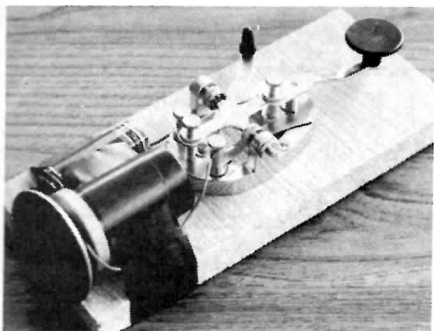
attempts of 9- and 11-year-olds, I soldered 2-inch lengths of wire to each of the 555 IC socket terminals that would be used. The boys were then able to solder the components to the wires. The finished circuits were wrapped with electrical tape and stuffed into an empty 35-mm plastic film canister. A hole the size of the bottom of a 2-inch loudspeaker was cut in the top of the film canister, and lead wires were brought out through the hole. After wrapping the bottom of the speaker with electrical tape, the speaker was put into the hole with a friction fit. The canister/oscillator was taped, along with a battery, to a board to which a key had been fastened. Voila!—a code-practice oscillator for \$10.42 plus tax, and not much larger than a can of 35-mm film. Functional, if not elegant.

The reasons for having the kids build the practice oscillator were to provide an opportunity to learn to (1) solder; (2) recognize some schematic symbols; (3) practice code; and (4) develop a good "fist." From experiences with teenagers learning code from a computer program I wrote, I found that they learn to receive, but cannot send clearly. These youngsters seemed to like oscillators; they brought them every day.

## Code Practice

Each hour consisted of two 15-minute

<sup>1</sup>Schematic diagram and parts list appear on page 64.



The completed code-practice oscillator in a 35-mm film container with key was an important element in the class. By helping build it, the boys became familiar with many construction techniques and created a means to practice code.

code-practice sessions interspersed with two sessions devoted to discussing 10 of the multiple-choice questions on rules and theory. I asked the boys to learn the first letter group (AEIMNT) from the package they had purchased. After the oscillators were built, we began practice using randomly sent letters from a computer program. The code was copied from the computer onto cassette tape for ease of handling on the patio, where the class was held. At first I sent only one five-letter "word" at a time, gradually building up to 1 minute of random code (5 words). The difficulty seemed to come when we reached the third letter group. After they passed that point, the remainder of the letters, numbers and punctuation were learned quickly. By the fourth week I began sending text from the newspaper and sample QSOs using another computer program I wrote that allows me to type in what I want sent. At this point, I sent 5-6 minutes at a time, and had the boys take turns sending the material back to me with their oscillators as we went over what had been sent. Since the class began at nine, and W1AW practice also began at that time Monday, Wednesday and Friday, the boys tried copying code using the radio I brought to the patio.

### Theory

At this young age, electrical theory—not code—is definitely the hurdle. Also, the vocabulary used, even in "plain" English, was sometimes a problem. Perhaps those who write test questions and practice material for the Novice tests may, in the future, want to take a close look at the vocabulary. Often the same thing could be said more simply. If we want to recruit younger hams we should eschew obfuscation!

We discussed 20 of the 200 multiple-choice questions each day, 10 at a time. I studied the text and located nearly every answer in the *Tune In The World* text, and noted the page numbers. As we discussed each question, I gave the boys the page

number so they could read more about it at home. I explained the material as best I could for each question, and tried to demonstrate with equipment, etc, where it was available.

It became apparent to me that these kids were going to do as I did: Memorize the material now, understanding it gradually as they progressed through the amateur ranks. The boys had no trouble with the approximately eight groups that dealt with rules. They had some difficulty with understanding frequency and wavelength, but the breakthrough there was a chart I had them make. Along a line, they marked off intervals and labeled them 0 to 30 MHz. Next, they marked the AM broadcast and citizens bands, and each of the amateur bands through 10 meters. They also indicated the WWV locations, and I had them listen to WWV so they knew what I was talking about. Above each amateur band they wrote the frequencies, and above the four bands containing Novice privileges they wrote the Novice band edges in megahertz. It then was easy for them to replace the decimal point with a comma to change to kilohertz. Below each band they wrote the approximate wavelength in meters, and below that the length, in feet, of a half-wave antenna for the Novice segment. That chart contains answers to several of the questions on the Novice exam, and one of the boys remarked that the relationships were finally clear to him.

After we had finished the 200 questions during the third week, I picked out one question from each group of 10 (using the random-number generator on a computer) and had a sample test each day for the remainder of the five weeks.

### Conclusions

This group of youngsters was hand-picked. All had a brief exposure to ham radio through a demonstration that sparked their interest. All had parents who were interested in their children and helped them study. Two were my own children, who had a greater exposure to Amateur Radio, but who had not studied it before. One boy proved exceptionally motivated and bright. In addition, he was leaving on vacation at the end of the fourth week and wanted to take his test early. He passed the test four days before his 11th birthday, and that proved

a tremendous motivator for the other youngsters in the class. A second passed his code test two days later, and all of them learned the numbers and punctuation the next weekend. Dick, KC8OU, came and gave my boys their tests the day before the end of the class, and two others passed on the last day. Membership applications for the ARRL were given to each new Novice, along with the four-digit code for the Canton Amateur Radio Club.

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## *The most important ingredient is desire.*

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Youngsters can pass the Novice test. If you want to run a class, I suggest you choose your recruits carefully. I think 11 is a good starting age for bright kids, perhaps a little older for average kids. Even bright 9-year-olds can do it. The most important ingredient is desire; they must want to get that license. To that end, one or more demonstrations of Amateur Radio are in order to kindle the flame. Classes should be ready to start within a short time after those demonstrations. I recommend that the chart described above be included in the Novice study material, or be constructed by the pupils. If you have, in any age group, a pupil who is ready for the test early, let him or her take it. Success here can provide a great motivator for the others.



Evan and Charles, clearly pleased with their success in the Novice class, mail their completed Form 610s as younger brother Matthew looks on.