RADIO

Amateur Radio Made Simpler

New license drops code rate to only five words per minute. Examination simplified, too, to attract many more into hobby of radio comunication.

By WATSON DAVIS

➤ IT IS easier than ever before to have your own amateur radio station and talk in code and by voice with fellow "hams" nearby and in distant lands.

A new form of federal radio license for novices is now being issued by the Federal Communications Commission. It reduces the necessary ability to send and receive code to a mere five words a minute. This speed of dit-dahhing is considerably less than the 13 words per minute required for standard amateur licenses. The written quiz given by the government examiners is also simplified for the new novice class. Only enough questions are asked to be sure that the licensee knows enough about radio to keep him from interfering with other radio services.

Intended to make it easy for more young and old people to work in practical electronics in their spare time, the novice amateur license, good for one year introduction, is expected to add many thousands to the more than 90,000 federally-licensed amateur radio operators.

Even without a license, anyone may build a simple one-tube regenerative receiver for the short waves in a few hours at a cost of $10 to $15. This can be used to listen in on the busy amateur bands and learn the code in which combinations of dots and dashes mean letters and figures.

Build Transmitter Cheaply

For about the same cost and in little time, a transmitter may be built, complete with power supply. This will allow the new amateur to get "on the air" as soon as he gets his licenses, one for himself and one for his station. He can then become a HAM (radio amateur) and GA (go ahead) with CQ (which is the general call to any other stations wanting to talk) and become a "ragchewer" with other OM (old men, which all male amateurs are regardless of age) or even with a YL (young lady) or XYL or OW (old woman, if she admits that she is married.) Or he may become a DX (distance) fan and try to talk in code with the farthest and strangest amateur he can get to answer his CQ.

Like any hobby, amateur radio is sometimes considered by onlookers as a strange time-consuming mania. It makes its devotees stay up all hours of the night, chattering in code and voice over the dozen or so bands in the radio frequency spectrum that are now allocated amateurs for regular and experimental use.

But amateur radio is a great national asset for peace and war.

In time of emergency and disaster, such as floods and explosions, amateur stations become the means of communication when other means fail. One of the functions of the American Radio Relay League is to provide this essential service, along with fostering the general growth of amateur radio activities.

From the ranks of amateurs of past years have come leaders of electronics of today, the men who have contributed to radio, television, radar and a dozen other branches of this large new industry. For example:

Maj. Edwin H. Armstrong, inventor of frequency modulation radio broadcasting and other important radio developments, began his career as a Greenwich, Conn., amateur. Dr. Allen B. DuMont, head of the television manufacturing concern, built his first "wireless" set as a schoolboy.

The new novice license was planned to attract many young people to amateur radio as a hobby. Some of them will get their start in electronics in this way. Many more will learn much and have fun with a hobby they can enjoy all their lives.

No physical examination is necessary for becoming a radio amateur. Some of the most enthusiastic amateurs are those who are bedridden, or blind, or otherwise physically handicapped.

To encourage experimentation on the very high frequencies and microwaves, there is another new kind of radio license, the technician class, which requires only the slow five words per minute code ability, but the standard, tougher written examination for amateurs. These radio specialists, more interested in experimentation than in communication, can use only the very high frequencies above 220 megacycles, or what is the same thing, the very, very short or microwaves.

Most Amateurs in General Class

Most radio amateur licenses will still be what is now known as the general class, formerly class B. There is also an advanced class license, formerly class A, and next year amateur extra class licenses will be available for those who have had regular licenses for two years, can do 20 words per minute code and pass stiffer examinations.

TEN-YEAR-OLD "HAM"—Jane Bieberman of Bala-Cynwyd, Pa., whose father operates radio amateur station W3KT, became a licensed radio amateur, passing the code and written examinations for a regular amateur license and became W30VV at the age of 10.

The Federal Communications Commission, with Washington headquarters and many branch offices, regulates amateur radio, gives examinations and issues licenses, just as it controls all wire, radio, TV and similar communication. The American Radio Relay League, with headquarters at West Hartford, Conn., is the organization of radio amateurs and issues information and material on how to get started in amateur radio.

Boys and girls of 9 to 10 have been able to qualify for amateur radio licenses. There are no age limits. Thousands of amateurs are men and women who have radio as a hobby just as others play golf, go fishing and build furniture in a home workshop. The average age of America's 90,000 amateurs is now about 33, although in 1926, when radio was younger, amateurs were younger with an average age of 26. Now there are many well over three score and ten still pounding their keys joyfully or talking with distant radiowave friends of long standing, most of whom they have never seen.

Some amateurs have very elaborate "rigs," as the receiver-transmitter combinations are called. Many of them build their own even in these days of production-line equipment. Some amateurs get pleasure from building up and tearing down to try out new ideas and improve their sets and their knowledge.

Networks of radio amateurs, organized as rigorously as our military reserves and volunteer firemen, are ready and in frequent operation as an aid to the nation's communications, available to the military, the Red Cross and other such agencies for emergency use. The portions of the radio bands available to amateurs are busy with signals day and night. Even language is no real barrier in talking overseas for there is a Q code that substitutes for frequently used phrases no matter what language the distant amateur speaks.

Amateur radio transmissions are limited only by the dimensions of the earth. It is an everyday occurrence for experienced amateurs to talk around the world. Even novices find no difficulty in communicating several thousand miles.

Unseen and unheard by most of us, radio amateurs bound together by their electromagnetic waves have created their own united world.

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MEDICINE

Children Want Health

➤ YOUNGSTERS want good health and will quickly improve their physical status when nutrition teaching is put on a personal basis, Anne M. Clemmons of the University of Kentucky and Harriet Williams, Lexington Junior High School, Lexington, Ky., found in a study of 80 ninth-graders.

At the opening of the experiment, more than 58% of the class were on a downward trend of growth. This high percentage was discussed in class and it was agreed by all that irregular habits of sleeping and eating as well as extra activities over the Christmas holidays were the probable causes.

Each child brought out the reasons he thought applied to his case, such as competitive basketball or a job which was more than his body could take care of at his stage of growth. As examples of the effectiveness of this discussion, one boy gave up basketball and another a job. Both tried to improve their food habits and both were back to their expected curve of growth in six weeks, wiping out their previous sharp drop.

At the end of six weeks, three weeks after the close of the nutrition lessons, the students were again weighed and measured. This time 50% of the class showed an upward trend in growth. Classroom discussion showed that changes in the growth trends were due to application of the principles learned in the nutrition lessons. For instance, one boy had gained in spite of the same work which he had carried on in the former period when he had showed a downward trend. His explanation was that he had improved his nutrition enough to care for the extra activity.

Details of the study were reported at the meeting of the American Home Economics Association in Cleveland.

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PHOTOGRAPHY

Photos Made Without Washing, Save Water

➤ PHOTOGRAPHIC FILMS and prints can be finished without the customary washing in water in a new process developed by the U. S. Army Signal Corps at Fort Monmouth, N. J.

The process is particularly suitable for military forces in advanced areas where water is scarce. In addition to eliminating the need for water, it decreases the processing time. It is about ten times faster for films and twice as fast for prints as conventional methods.

Specially formulated Amidol developer, a stop bath and stabilizer solutions are used. The heart of the new stabilizing process is a solution containing thiourea. Water-resistant photographic paper is also used. This cuts down drying time.

In ordinary photo processing methods, films and prints are fixed in a hypo bath to remove unexposed silver salts. In this process the thiourea converts the unexposed silver compounds to a light-insensitive form.

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