# Using Mechanical CW Keys

Return to the days of yesteryear—dust off that old brass or chrome beauty and put it on the air.

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I believe that if you consider yourself any kind of CW operator you should not need electronic help in sending good Morse code. I am not using my PK-232 plus computer keyboard, or the electronic keyer in my HF transceiver any more. I worked with both of them a few times years ago. But I now only use my straight key, sideswiper or bug, all of which are mechanical rather than electronically aided keys. They are mounted side by side on a three-ply wood square on the desk top underneath the transceiver at my operating position. The transmitting or receiving speed of the other operator determines which one I use.
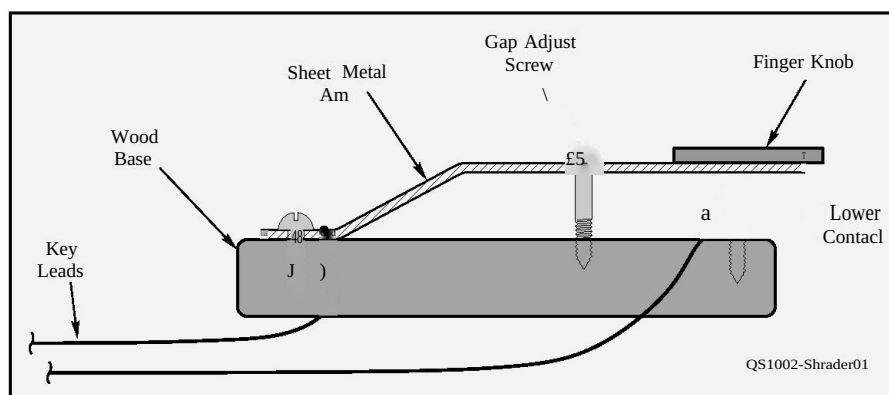
## The Straight Key

A straight key is probably the kind of key most of us start with. Another name for it is hand key, but since all keys are operated by hand it is better identified as a straight key. All keys are simply a means of making and breaking an electrical connection. Two insulated wires, bared a half an inch at the ends, could also be used. They do not make a very efficient key, but I have used such a keying device in my experimenting years. I remember when I built my first straight key, quite a ways back. I used a ¾ inch strip of sheet metal screwed onto a small wooden board. The far end of the bent strip could be pushed down onto a roundhead screw (see Figure 1). Wires to the round-head screw and to the metal strip were all that was required. The blue poker chip glued onto the far end of the metal strip gave it real class.

Straight keys are made in many forms. They are either landline or radio telegraph keys. A landline operator had to leave his key shorted until his station was called on his clicking sounder that was connected in series with the closed dc telegraph line. These keys had to have a switch on them to keep the circuit closed when not being keyed. When a station was called, the operator opened his switch, acknowledged the call, then closed his switch to hear the message being clicked out to him. When no traffic was being handled (all keys closed along the line) the battery was pumping a sizable



Figure 1 — Bob's first straight key.

## Sending Code

Sending with a straight key at 10 to 15 words per minute (WPM) is easy for a fairly good radio operator. With a sideswiper, a reasonably fast speed would be about 20 to 25 WPM. With a semiautomatic key, faster operators can send at 30 to 40 WPM, although some really fast operators can send at 60 to 70 WPM and copy code in their heads at up to 100 WPM. Bugs can be slowed to send at 10 WPM or even less although sometimes additional weight is required.

A word, when sending or receiving, is considered to be five letters plus a space. More precisely, a word is 25 dots and spaces, ending with three dot-times. Use three dot times following letters and seven between words. The word PARIS followed by seven space times is considered to be one standard word.

Learning how to send Morse code properly is not too hard, but it does take quite a bit of practice. One way would be to start by sending the example below both forward and backward until it can be sent correctly both ways. Use — - - - — (dahdidididah) or the long dash character. This long dash is used by amateurs as a period, or a paragraph sign or to kill time while thinking. The practice line below contains all of the letters, a long dash and all of the numbers needed — except for the useful signals shown below, to operate on the ham bands. Be sure to leave a definite space between letters and numbers — and leave double or triple spacing between words! (It is assumed that you know the International Morse code.)

THE QUICK BROWN FOX JUMPS OVER A LAZY DOG — 1234567890

Achieving consistent operation at 5 WPM makes for a great beginning and is good for on-air practice with friends. A somewhat higher speed, perhaps 10 to 12 WPM, will be needed for regular radio communication. If it takes about 120 seconds to send the complete practice line above, your speed is about 6 WPM, 60's = 12 WPM, 45s = 18 WPM, 30 s = 24 WPM.

When you can send this practice group at 10 to 12 WPM with a straight key, and you can copy at the same or a higher speed, you can consider yourself qualified as a good amateur CW straight key radio operator. When you can do it with a bug or sideswiper (see Figure 3) at 18 WPM or more, consider yourself a real CW radio operator!