

Learning Morse Code

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This month's article will highlight some resources and method that I have used for learning Morse Code. There are many others available if none of these work for you. I started to study Morse Code in 2022. After learning the alphabet, I got distracted with other radio activities and stopped routine practice. I re-started my effort a few weeks ago and already have made much better progress by using several learning principles and internet resources. I am using self-directed learning based on principles that I learned by reviewing several classroom teaching curricula. If you learn better in a more structured environment, there are several organized classes available via virtual learning. The [Long Island CW Club](#) (LICW Club) and [CW Ops](#) are probably the best known.

There are several principles for learning Morse Code that are used in almost every informal or formal learning structure:

- learn the distinct sound of each character, not the individual dit's and DAH's (don't count);
- do not begin learning at very slow speeds, instead use Farnsworth timing (see below);
- learn selected letters first, adding new letters to the list as you copy all former letters at better than 70% - 90% using your chosen Farnsworth speed;
- daily practice in several short periods is most effective; and
- strive for instant character recognition while increasing speed after learning the necessary characters (about 40).

There is less agreement on the order to learn letters, numbers, punctuation and prosigns, when to learn sending and which type of key to use for sending. Many teach what is called the Koch method. Extensive research by the LICW Club showed that this character sequence was not really used by Koch! The LICW Club developed their own letter sequence based on the characters most often used in QSO's.

Some recommend learning to copy before learning to send. The LICW Club incorporates sending from the very beginning and recommends using a straight key. They believe that the direct association of muscle movement to form the characters aids in learning. Others believe that a paddle should be used from the beginning due to its efficiency, better formed code and controlled sending speed. Many CW operators end up using a paddle eventually, so starting with a paddle eliminates switching keys midstream. Use whichever is more comfortable for you.

To get started, learn the characters as a single sound, not a series of dots and dashes. Focusing on the dots and dashes leads to counting them which slows down processing considerably. Learners starting by counting and / or with slow sending speed to learn the characters tend to plateau at about 13 WPM (words per minute). Progress beyond that speed takes great effort, maybe even starting over.

Learn at a relatively rapid sending speed. This is a bit problematic when first learning because you are using your conscious brain to convert the sound to its character which takes time. Having the characters coming too fast will lead to many missed characters and a lot of frustration. The solution to this problem is known as "Farnsworth" timing. This method sends each character at a rapid speed (12 – 20

WPM), but allows large spaces between the characters (5 – 10 WPM effective speed) for you brain to process what it hears. When first learning, you should strive to copy between 70 and 90% correctly. If you are copying much worse than this, slow down. When copying 90% or better, add a new character or speed up.

Higher speed learning also helps your brain to learn the sounds because the sending speed is too fast for counting. Learning the sounds at high speed prepares you for increasing your effective speed when you “really learn the characters”. What is meant by really learning the characters is when you are using your subconscious brain to convert the sound to a character. This is known as “Instant Character Recognition”. This skill is usually needed to get over the 13 WPM plateau.

Classical Farnsworth timing is to use 20 / 5 WPM (abbreviated as FWPM 20 / 5) to start learning letters, numbers, and a few punctuation characters. The LICW Club did extensive research on the history of Morse Code learning. AA0Z has a YouTube video ([LICW Video](#)) where he interviewed one of the founders of the LICW Club and their primary researcher on the findings. It is really fascinating and worth the hour to watch. They structure their learning of the first 18 characters at FWPM 12 / 8 (Beginners Carousel 1). Then 26 additional characters and prosigns are added and the speed is increased to FWPM 12 / 10 (Beginners Carousel 2). Beginners Carousel 3 focuses on QSO structure and getting on the air. Intermediate and Advanced classes focus on ICR, head copy and increasing your speed of sending and receiving.

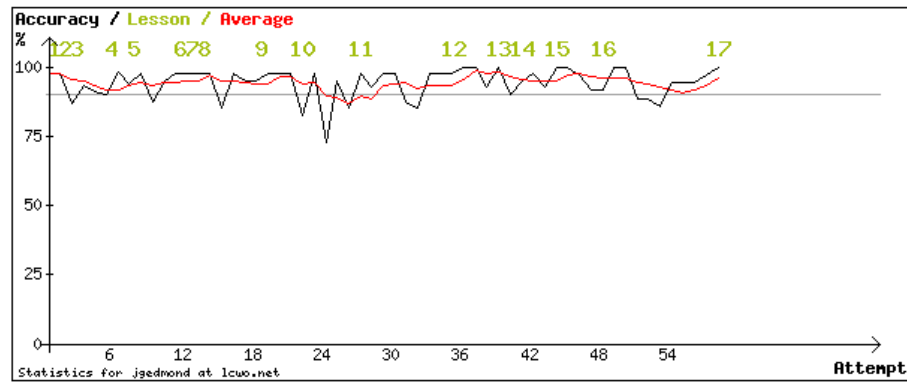
I have been using Learn CW Online ([LCWO](#)) to learn the characters using the LICW Club recommended FWPM of 12 / 8. LCWO uses a character progression similar to the traditional Koch sequence. If you create a free account, you retain your place in the lessons and track progress via a nice set of statistical graphs for each lesson that you complete. The figure at the end of this article shows my statistics for the first 17 (of 40) lessons. As or after learning the characters, there is the “MorseMachine” to help develop ICR. Other practice tools focus on words and callsigns.

To supplement LCWO, I use the extensive YouTube audio files recorded by Kurt Zoglmann – the “[Morse Code Ninja](#)”. Kurt uses a different letter sequence and mixes words and callsign into the lessons for each letter. He also has extensive tools to help with ICR, Instant Word Recognition (IWR), head copy, callsigns, etc. While using LCWO for basic learning, Kurt’s YouTube channel provides thousands of hours of code to listen to and copy.

Two other sites that I recently found are [MorseCode.World](#) and [Head Copy](#). I have not used these much, but they seem like great tools for advanced learning. MorseCode.World has a good tool for ICR and follows letter sequences for the major classes and LCWO. One section follows the teaching method of CW Ops, another simulates QSOs and yet another provides Morse code to copy from current headlines to expand your vocabulary. You can also enter text and the website will generate “perfect” code for you to listen to. Much of the content can be downloaded for offline study. Head Copy obviously focuses on copying without any aids. Code is played and you have to choose the correct sequence from 5 choices to advance to the next. Many options as to what is sent are available.

A final helpful tool is a free Android app called Morse Code. A version for Windows 10 and above is also available, but I did not find an iOS Version. This is a translator and learning tool. It allows you to select

Koch CW course statistics



(Note: Attempts with zero accuracy are not considered for averaging.) Show only results from lesson:

Lessons, Accuracy

Lesson	Attempts	Accuracy			Time spent (days)
		min.	max.	avg	
1	1	97.8	97.8	97.8	1
2	1	97.8	97.8	97.8	1
3	3	86.7	93.4	90.4	1
4	2	90	98	94	1
5	4	87.5	97.5	93.5	1
6	1	97.5	97.5	97.5	1
7	1	97.8	97.8	97.8	1
8	5	85	97.5	94.5	1
9	3	95	97.5	96.7	1
10	5	72.5	97.5	89	1
11	8	85	97.5	92.5	1
12	4	97.5	100	98.8	1
13	2	92.5	100	96.3	1
14	3	90	97.5	94.2	1
15	4	92.5	100	97.4	2
16	10	85.8	100	92.9	2
17	2	97.2	100	98.6	1