Heritage Center exhibition puts Morse Code on display

By Tom Stafford Staff Writer tstafford@coxohio.com
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Effective Feb. 23, 2007, the Federal Communications Commission will no longer require any U.S. Amateur Radio operator to learn Morse Code.

Notice in Springfield News-Sun

When sunspot activity charges the ionosphere, it's easier for Springfielder Wayne Watson to send the dashes, dots and pauses that make up his messages to Japan, Australia and elsewhere.

In a year in which the FCC has suspended the requirement for amateur radio operators to learn Morse Code and a month in which the Clark County **Heritage Center** has made the system part of a museum piece, Watson's knowledge is good news for traditionalists.

Advancing **technology** might have Morse Code supporters sending out an S.O.S., but as long as ham hobbyists such as Watson are using it, it still has a pulse.

A matter of character

"There are actually two major codes in use," said Michael Schulsinger, secretary of the Clark County Independent Radio Association and a longtime ham operator.

"The International Code is the one in regular use today. The American Morse Code was used to send telegraphs and railroad telegraphs in the U.S."

Both codes use pulses to encode characters, punctuation marks, spaces and prosigns or transmission codes. And although there are small differences between the two systems' cast of characters, both are part of a Morse Code system that, in 1844, revolutionized the character of human communications.

"The telegraph had a more profound effect on the way humans communicated than any technological development since the printing press," says the **Heritage Center**'s current display, "The Transformation of Everyday Life." The communications segment of the exhibit - which features cases on Morse Code and displays of old telephones and cameras - runs through Aug. 11.

"For the first time in history," the exhibit explains, "it was possible (with Morse Code) to send information from one side of the world to the other without a human agent to carry it."

The change established the telegraph office as a kind of news **center** of a community and made the telegram - still more expensive than the letter - the carrier of the community and world's most important and dire news.

News reporting services are still called "wire" services because of telegraph **technology**.

How it worked

In addition to displaying telegraph keys from its collection, the **Heritage Center** exhibit describes how early Morse Code worked:

"The telegraph used electric current to transmit information. The system consisted of an electric circuit, which was completed when the telegraph key was pressed. Depending on how long the key was held down, the receiver would register the keystroke as a dot or a

dash. Morse Code translated the alphabet into a series of dots and dashes, which could be deciphered by telegraph operators."
That early "online" system soon linked everyone with access to a telegraph line in this country and, with the laying of the trans-Atlantic cable in the late 1850s, the system of communications linked the United States and Europe an ocean away.
It was the way the simplicity of the code itself interfaced with the next major communication **technology** - the radio - that extended the working life of Morse Code.

Early bandwidth
"The advantage of Morse Code," Watson said, "is that when you send a signal out, it's either on or off."
That means the transmission can be done with a single tone, a tone that can be broadcast on a very narrow radio bandwidth.
Schulsinger said the narrowness of the bandwidth has two complementary advantages:
1. It's possible to make a receiver more targeted to that bandwidth.
2. Less power is required to send a narrow bandwidth signal.
"That's why I can talk to Japan on 2 watts, rather than having 100 watts or 1,000 watts to get there," said Watson, whose niche in ham radio pushes the envelope of the Morse Code transmission principles.
"I build little radios that work with lower power - 2- to 10-watt," Watson said. "It's harder to make connections that way, but it's fun."
At higher, but still modest levels of power, the Morse Code signal was, for decades, difficult to match, Schulsinger said.
"Until the advent of very sophisticated computers and very sensitive radios," it was "the most efficient form of radio transmission," he said. "It would get through when voice transmissions or other digital transmission systems wouldn't work."

Early text messaging
This year's suspension of the Morse Code requirement for amateur radio licenses is just the latest blow to the status of Morse Code. For decades used in shipping, Morse Code systems largely have been replaced by satellite-based systems.
Although Morse Code signals still are sent out from airport beacons - including the one at the Springfield-Beckley Municipal Airport - most pilots use satellite Global Positioning System **technology** to find their way.
The last addition to the Morse Code system involved a kind of grudging tribute to the modern messaging system that largely has replaced it.
Schulsinger said that on May 3, 2004, the code added the @ sign used in e-mail.
For his part, Schulsinger isn't deeply mourning the end of the Morse Code requirement for ham licensing.
"It was a rote learning experience, and it was difficult for me," he said.
Probably because of its rhythmic flow of sounds and silences, "people with musical backgrounds tended to pick it up rather quickly," he said.
Watson said Morse Code has been studied for other uses, including as a system for communicating with certain disabled people.

As a Code man, Watson likes to tell the tale of a "Tonight Show" challenge in which a Morse Code transmitter and text messages went head-to-head to determine who could send a message faster.
"The Morse Code beat the text message," he said.
But even Watson says the prognosis for Morse Code is dicey: "I don't know what's going to happen with it."
For the time being, at least, the system seems safe.
Schulsinger said that with ham operators such as Watson still using it to pulse messages around the globe, "it's far from being dead."
"The telegraph had a more profound effect on the way humans communicated that any technological development since the printing press," says the Clark County **Heritage Center**'s current display, "The Transformation of Everyday Life." Marshall Gorby The Transatlantic cable, a section of which is on display at the Clark County **Heritage Center**, shrank the communications time between Europe and North America. Marshall Gorby

Reach this reporter at (937) 328-0368 or tstafford@coxohio.com