Mnemonic Morse

Code-hating computerniks take note!

by Roger B. Keeney W8LHL

A fellow Civil Air Patrol communicator called my attention to G. Harold Love's article, "Code Test Sure Shot," on page 10 of the July 1988 issue of *73 Magazine*. After starting off with some simple mnemonics to nail down the first few letters of the code, he then explained how to do a bit of contextual analysis to reconstruct the rest of the typical QSO-type message that had been copied as vertically written dots and dashes during the Novice code test itself.

Initial Ponderings

It occurred to me that there might be folks out there more interested in using their computers than their code keys to communicate by radio. A set of simple mnemonic phrases coupled to the letters of Morse code arranged in binary order would simplify matters greatly. As G. Harold Love suggested, "off-line" translation would be accomplished by copying the dits and dahs with vertical pencil strokes.

Disclaimer

Before continuing, a few words about no-code. The idea of a no-code license does not seem to be popular with the majority of the radio amateur community . . . yet. There are raging arguments on both sides. One of the best arguments going for CW is its DX capability, possible with the simplest equipment. Another is our obligation to maintain our proficiency at CW in the case that it's the best thing going during an emergency.

One of the arguments against no-code is the fear of having the ham bands trashed by no-coders in the same manner that CB was. Another fear seems to be seeing another person with a hand-held turn out to be just a radio operator, rather than a kindred soul who could talk with you, on your level, of the exhilaration of breaking through or avoiding the pileups by using CW.

My argument is that there's a pool of talented people who could make significant advancements in digital communications if they weren't being held back because Morse code might not be their bag—and I think that's ham radio's loss more than it is the computer hobbyists'.

The Evolved System

With this soap boxing out of the way now, let's get on with laying out the Morse code with the first sentence: "Even then, I ask no more." Notice how I'm portraying the dits and dahs vertically, which Love says is a much faster way of writing them. The initial letters are E (.), T (|), I (..), A (.|), N (|.), and M (||). Adopting the convention of dits being binary zeros and dahs being binary ones, we count off the two single-element letters (which makes E a binary zero and T a binary one) and then the four letters composed of just two elements. Thus I, A, N, and M count off binarily now as zero, one, two, and three.

2^3

Looking next at the three-element letters, we find eight of these. Counting off binarily from zero to seven we have S (...), U (..|), R (.|.), W (.||), D (|..), K (|.|), G (||.), and O (|||). The mnemonic sentence for these eight letters would be "Sing utterly real words; don't knock golden oldies." Like that? Hang in there, Morse fans. This gets even better when we get into the big league—four-element letters!

2^4

Now we're getting into the heady stuff, 16 letters made with four elements each. That's four bits batting out zero to 15 in the language of computers. Let's take the first eight, all starting with that first dit. H (....), V (...|), F (..|.), * (..||), L (.|..), * (.|.|), P (.||.), J (.|||). Notice that we have a couple in there that aren't ours. The letters depicted with asterisks do exist in one form or another in other languages such as Russian, Greek, or Arabic, whose larger alphabets are very glad to have our castoffs. So, when we go to make up our sentences, we will incorporate these foreign characters as dramatic pauses in our own continuing mnemonic English dialogue: "Have valued friends (pause) Laugh! (pause) Play jazz!"

We're on the home stretch now with the last eight beginning with dahs (actually six English and two more foreign): B (|...), X (|..|), C (|.|.), Y (|.||), Z (||..), Q (||.|), * (|||.), * (||||). Bet you're wondering how we get the characters like X, Z, and Q into this final act, aren't you? So to the finish line we go with "Buy xylophones; create your zestful quartet (long) (pause)."

The real kicker's yet to come, but let's look at these four lines all together once before going on to the encore (see Figure 1):

Even then, I ask no more.
Sing utterly real words; don't knock golden oldies.
Have valued friends (pause) Laugh! (pause) Play jazz!

•	Even	•••	Sing	••••	Have	I•••	Buy
I	Then	••I	Utterly	•••I	Valued	I••I	Xylophones;
••	I	•I•	Real	••I•	Friends	I•I•	Create
•I	Ask	•II	Words;	••II	(pause)	I•II	Your
I•	No	I••	Don't	•I••	Laugh!	II••	Zestful
II	More	I•I	Knock	•I•I	(pause)	II•I	Quartet!
		II•	Golden	•II•	Play	III•	(long)
		III	Oldies	•III	Jazz	IIII	(pause)

Figure 1. Chart of Morse alphabet letters, listed binarily.

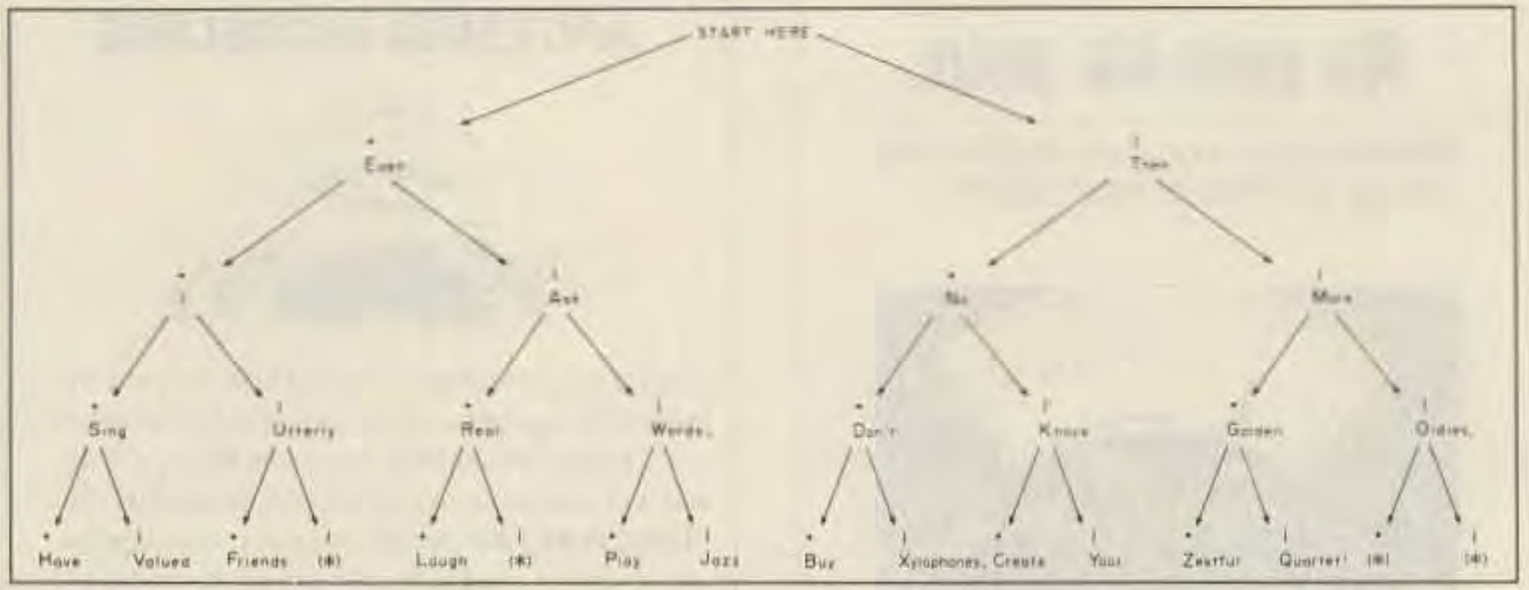

Figure 2. The Morse letter data tree, with the letters replaced by mnemonics.

Buy xylophones; create your zestful quartet (long pause).

Data Tree

One of the perennially favorite college computer science courses is something called "Data Structures." No course of this genre would be complete without a discussion of trees, usually portrayed upside-down, where the flow of data comes into one place at the top of the tree and then branches left or right according to the program logic in control at the moment. As it turns out, the portrayal of the characters of the Morse code as a tree has been around for a number of years. Most of you have probably seen this "oldie."

For decoding, you start at the top and move left and down if the next sound you hear is a dit or move right and down if it's a dah. Now we simply embellish this old-timer a bit by adding our mnemonic phrases (see Figure 2). The final product is this old classic tree chart made state-of-the-art by adding the mnemonic sentences to create a chart that's quicker to use than sequentially scanning a Morse code table ordinarily listed in alphabetical order.

As you can see, the chart gets crowded on the bottom row. I suggest drawing the bottom row first (you'll have 16 elements of alternating dits and dahs) and drawing upward. Don't worry about putting in the mnemonic phrases just yet, you'll do that last. Then leave a little space above that first row and lay down your alternating third row of dits and dahs (there are just eight elements now). Each element above will go between the two elements below it. The second row of four elements is then drawn before the remaining top row of just one dit and dah each is drawn to complete the data structure. Add the words "Start Here" above the top row to complete the chart.

Now start at the very top and add the words "Even Then" underneath the elements of the top row. (I suggest capitalizing every word now because it's the initial letter that you want to see quickly when decoding your message.) Then add the remaining sentences as shown in Figure 2. When you get to the bottom line, just use asterisks to represent the foreign characters because it will make that bottom row a little less congested.

The above is by no means the end of the potential for creativity that exists among the readers of *73 Amateur Radio*. Now it's your turn to see what you can do with these mnemonics to create even more effective (or whackier) and easier-to-remember memory aids. Don't forget also that I've only come up with about half an alphabet's worth of non-binary-based words and phrases. Certainly this list can be expanded.

I would like to think that I have simply picked up where G. Harold Love left off, and added my two-bits (or two dits) worth to this dialogue. I'm now looking to other readers for additional mnemonic aids to help open the doors of our hobby to those skilled in digital applications and for whom Morse code seems to be an unnecessary hurdle. 73