

# Cipher on the William and Elizebeth Friedman tombstone at Arlington National Cemetery is solved

By Elonka Dunin

(April 17, 2017; Arlington, Virginia) On my visit to Arlington National Cemetery this weekend, I made a point to track down a little-visited corner of this field of over 400,000 graves, to see the tombstone of a very special couple, that of William and Elizebeth Friedman. Two people who literally created the field of cryptanalysis (code breaking) in the United States.



At the very bottom of the tombstone, a simple epitaph, "Knowledge Is Power". But actually not as simple as it appears.



On a closer look, different fonts are used. Some letters have serifs, the little flourishes at the end of each line, and some do not. For example, look at the capital E's. Sans-Serif (without Serif) and Serif.



Without Serif

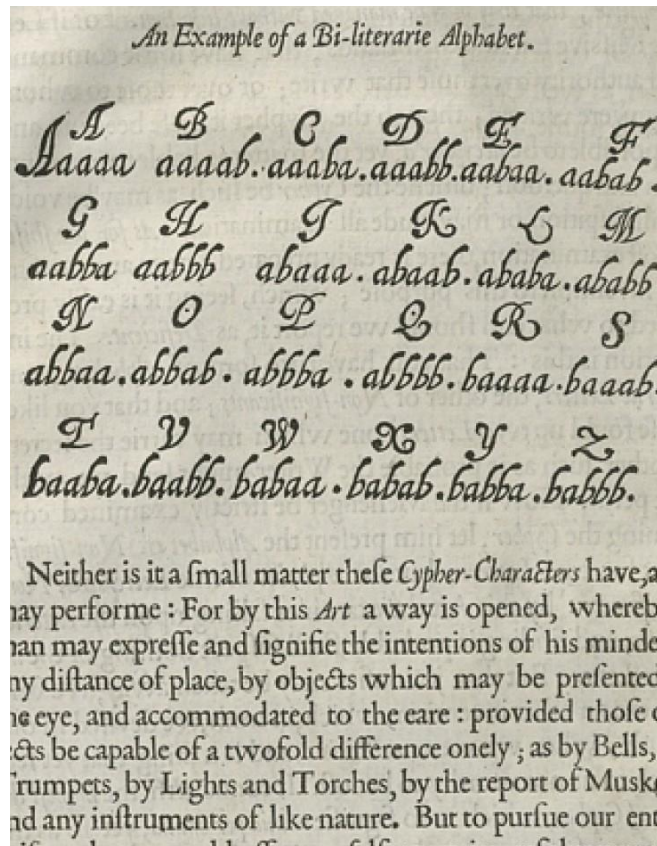


With Serif

So let's capitalize each letter that is with serif (including the Os, we'll get back to that later), put them into the 5-character groups that are typical in cryptography, and then to make it easier, just tag each letter as an "a-style" or "b-style":

KnOwl edGeI spOwE r  
babaa aabab aabab

This a/b pattern could be one of several different types of ciphers, but in this case is the one which the Friedmans are famous for studying, the 17th century [Bacon cipher](#), where any 5-group of As and Bs could represent a letter.



[William](#) and [Elizebeth Friedman](#) met each other at [Riverbank Laboratories](#) in the early 1900s. They were working together on a project ordered by the eccentric millionaire [Colonel George Fabyan](#) to prove (or actually, later, debunk) the theory that Sir Francis Bacon had been the true author of William Shakespeare's works. Fabyan then allowed the US Government to call on his crypto group at Riverbank to help with the war effort during World War I. From that beginning, the Friedmans went on to have astonishing careers in cryptanalysis, cracking codes. William, today known as the father of modern American cryptology, literally wrote the book and the training manuals for America's codebreakers. Elizebeth, America's first great female

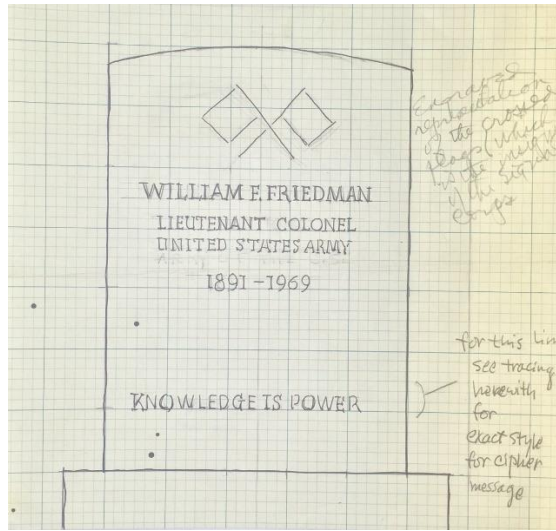
cryptanalyst, who had taught William about cryptography, continued cracking codes, foiling the efforts of Nazis, international smugglers and drug-runners.

For the first 1918 group of William and Elizebeth's World War I codebreakers, they hid a cipher in the picture of the graduating class. If you look closely, each person is either facing forward or to the side. If you put them in groups of 5, with the Baconian A/B system, it [spells out the phrase](#) (with a typo or two) "Knowledge Is Power". William Friedman kept that photo on his desk for the rest of his long career.

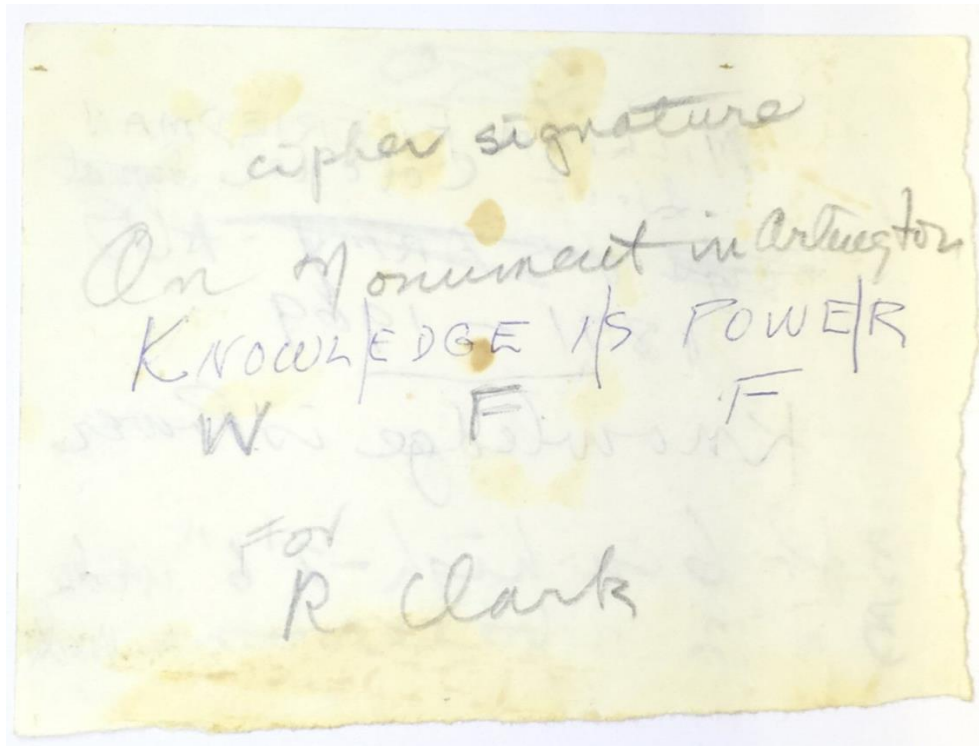


When William's team wasn't working on military ciphers, they relaxed in the evenings by cracking historical ciphers, or taking a look at other mysterious works such as the 500-year-old Voynich Manuscript. For William and Elizebeth, ciphers were so entwined in their lives, they even sent out Christmas cards in clever cipher systems.

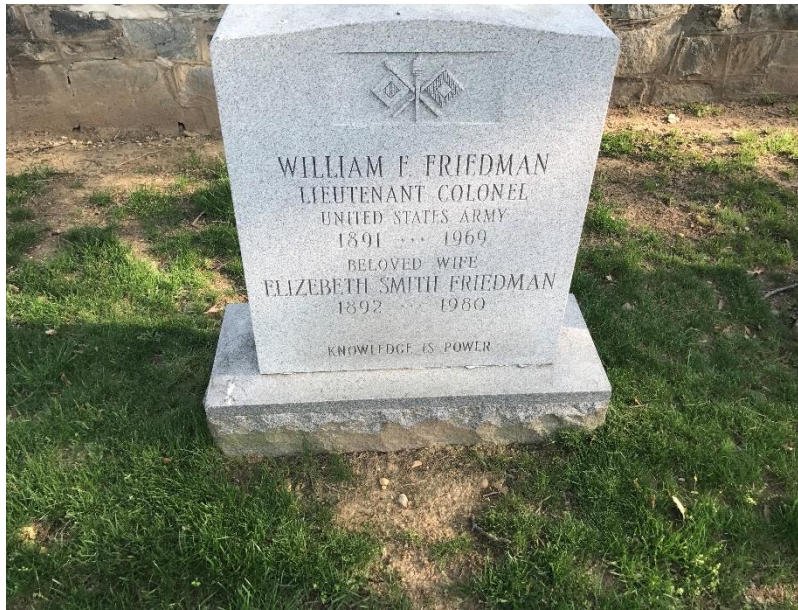
Of the two, William passed away first, in 1969, leaving Elizebeth to design his tombstone. She placed a pair of crossed flags, the Branch Insignia of the Army Signal Corps, at the top. Then his name and the dates, a space for her own name, and then at the very bottom, a hidden cipher "signature" for William.



Note to the detail-oriented puzzle-solvers. Some may quibble as to whether the Os in the message were serified or not. However, with thanks to biographer Jason Fagone, in his research in the Marshall Library where the Friedmans' papers are stored, we find that there is a note from Elizebeth to William's 1977 biographer R. Clark, that "WFF" was indeed the intended plaintext.



So on the tombstone, we have the longstanding theme in their lives together, the epitaph "Knowledge Is Power", with an encrypted cipher signature, babaa aabab aabab, deciphering to WFF, her husband's initials. A fitting tribute, in the life of a couple who had been so dedicated to the field of codes and ciphers.



Thanks to Chris Hanson and David Allen Wilson for the brainstorming, and Tom Palmatier for double-checking. Special thanks to the Marshall Foundation for their [Friedman Collection](#) and to journalist Jason Fagone for his assistance with some of the details here (stay tuned for his upcoming biography of Elizebeth Friedman, "[The Woman Who Smashed Codes](#)"!).

P.S. I recently learned that the Friedmans married in May 1917, meaning this year, 2017, is the 100-year anniversary of their wedding. There will be a ceremony honoring them at the National Cryptologic Museum on October 21, 2017. I (Elonka) have been invited there, to speak about this discovery on their tombstone. Very nice, full circle!

Page created: April 17, 2017

This PDF created from the webpage at <http://elonka.com/friedman/index.html> on April 29, 2017.

Return to [elonka.com](http://elonka.com)