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### *Ciphers and Silver Balls in the American Revolution*

Most school children learn all about the treasonable conduct of Benedict Arnold when he was in command of the American forces at West Point, but they probably don't learn that practically all of his communications exchanges with Sir Henry Clinton, commander of the British forces in America, were in cipher or invisible inks. In his cipher messages, Arnold usually left a few words "en clair," the ones he considered unimportant; for the important ones he used a dictionary as a codebook, indicating the page number, column number, and line number corresponding to the position in the dictionary of the plaintext word the code group represented. Arnold added seven to these numbers, which accounts for the fact that the first number in a code group was never less than eight or more than thirty-six.

It is also worthy of note that Arnold and the British used either a mask or a grille in their messages to each other. The real or significant text was written in lines outlined by an hourglass figure, and then dummy words were supplied to fill up the lines so that the entire letter apparently made good sense. To read the secret message, the receiver was supposed to have the same size hourglass figure that was used by the sender to conceal the message.

An interesting episode involving concealment of this sort was recorded by Colonel John Bakeless, AUS, in his book *Turncoats, Traitors, and Heroes*, published in 1959. Bakeless noted that an urgent message from Sir Henry Clinton, dated 8 October 1777 and written on thin silk, was concealed in an oval silver ball about the size of a rifle bullet, which was handed to a young officer named Daniel Taylor, who had been promised a promotion if he got through alive. The bullet was made of silver, so that the spy could swallow it without injury from corrosion. Almost as soon as he started, Taylor was captured. Realizing his peril too late, the spy fell into a paroxysm of terror and, crying "I am lost," swallowed the silver bullet. Administration of a strong emetic soon produced the bullet with fatal results, for Taylor was executed. "A rather heartless American joke went around," adds Bakeless, "that Taylor had been condemned 'out of his own mouth'."

[This article was adapted from *The Friedman Legacy: A Tribute to William and Elizebeth Friedman*. This publication is available from the Center for Cryptologic History.]

Approved for release by NSA on 12-01-2011, Transparency Case# 63852

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