

Mysterious Checks from Mauborgne to Fabyan

Steven M. Bellovin

smb@cs.columbia.edu

<https://www.cs.columbia.edu/~smb>

CUCS-012-14

Abstract

It has long been known that George Fabyan's Riverbank Laboratories provided the U.S. military with cryptanalytic and training services during World War I. The relationship has always been seen as voluntary. Newly discovered evidence suggests that Fabyan was in fact paid, at least in part, for his services.

At the start of World War I, the United States military had no formal cryptanalytic organization. There was certainly some expertise, notably in the persons of Parker Hitt, Joseph O. Mauborgne, and Herbert Yardley [8], but three people, however capable, cannot handle the demands of a war.

There was a pocket of civilian expertise at George Fabyan's Riverbank Laboratories in Illinois. He had set up a cryptologic group to find the alleged "hidden" cipher messages in Shakespeare's plays [8]. Fabyan offered his services to the government; his staff, led by William Friedman, did some cryptanalysis (especially of Mexican government messages) and trained Army officers [12, p. 107]. It has long been thought that Fabyan provided these services gratis. Indeed, Friedman himself said so [12, p. 109]:

It should be noted, and it gives me considerable pleasure to tell you, that this instruction was conducted at Colonel Fabyan's own expense as his patriotic contribution to the U.S. war effort. I can't, in this lecture, say much more about this than it involved the expenditure of many thousands of dollars, never repaid by the government — not even by income-tax deduction or by some decoration or similar sort of recognition.

Mauborgne said the same thing in a December 1960 oral history interview [7, Memo from Dr. Thompson, Signal Corp Hist. Div.]:

Fabyan offered gratis to take 50 army officers and enlisted men and teach them, an offer which Army G-2 accepted.

There is further support for this notion in a letter from Fabyan to Hitt [3]:

I have written to Major Gowen today. They have got a lot of funny laws in Washington. I don't believe the M.I.D. is posted on the acceptance of free services from civilians — God knows they have had a lot and are asking a lot more.

"M.I.D." is the Military Intelligence Division, where Yardley worked [9]; it was the beneficiary of Riverbank's services. Fabyan seems to be grouching about some laws—just which aren't clear—that are preventing him from being paid.

It might not have been that simple.

A recent chance Internet query found a sales listing for a July 1918 check from Mauborgne to Fabyan for \$40 (Figure 1). Correspondence with the seller revealed the existence of at least three more checks: November 26, 1917 for \$25, January 2, 1918 for \$40, and August 5, 1918 for \$40. Furthermore, he had sold other Mauborgne checks over the years; he does not know if any more of them were to Fabyan [2].¹

¹ All four known Mauborgne-Fabyan checks are now at the National Cryptologic Museum.

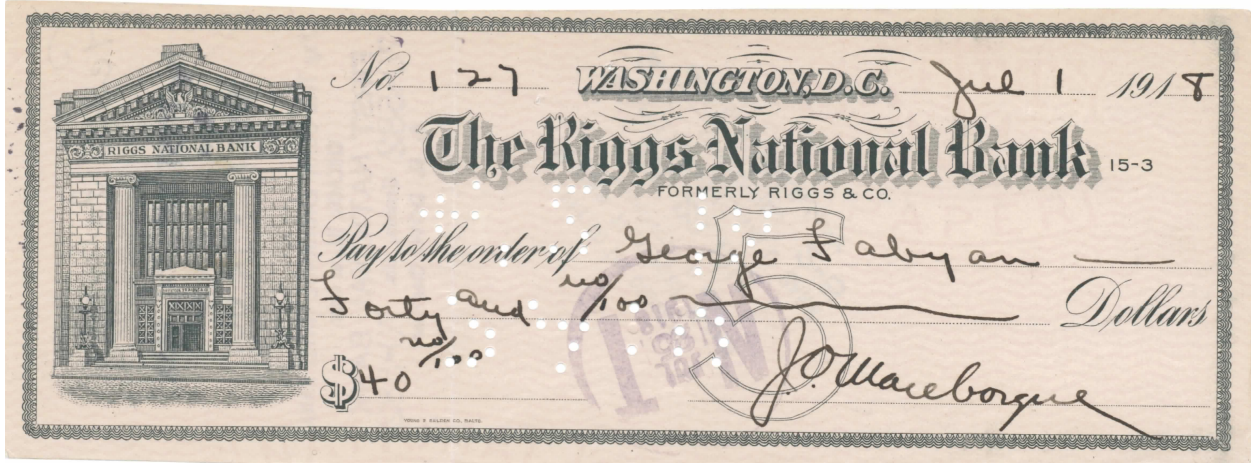


Figure 1: A personal check from Mauborgne to Fabyan. Note the lack of an account number: the signature had to be legible enough for the clerk to debit the proper account.

The question, of course, is why Mauborgne sent those checks. It strains credibility to think that they were personal payments; the known checks alone total \$145, a considerable sum for an army officer whose salary then was about \$5,000 per year [14]. It seems much more likely that he was paying Fabyan for Riverbank’s services, and was in turn being reimbursed by the Army.

The checks were written on Mauborgne’s personal account. More precisely, there are other checks from him of similar vintage that were undoubtedly personal, such as ones to the Grolier Society, the publisher of the Grolier Encyclopedia [2]. Furthermore, were this an official check drawn on a government account, he’d likely have signed his name “Major Joseph O. Mauborgne;” this signature has no title.²

Fabyan was a demanding, controlling individual. A feel for his personality can be gleaned from Friedman’s discussion of possibly moving from Riverbank to M.I.D. [10, pp. 330-331]:

But [Fabyan] refuses to see it that way...he expressed in no uncertain terms his intention of making it exceedingly uncomfortable for everybody connected with MI-8.

² Mauborgne was a major at the time the first three checks were written; he received a temporary promotion to Lt. Colonel on July 30, 1918, shortly before the last known check was written.

Otherwise, he has been no more upset than I expected him to be at the news. We are going to part on friendly terms, though I feel that he will not hesitate to hurt us if he could for what he chooses to insist on calling ‘a breach of loyalty to Riverbank.’

Fabyan was also stingy, and rather proud of it. In a letter to Mauborgne while Friedman was trying to crack Vernam’s machine, he wrote [4]:

We don’t want any information which is not consistent and which cannot be obtained readily by the enemy. Please remember that we have no control over the finances and budget system of the enemy, and any funds to cover the expense to obtain what the enemy might have comes out of the constipated pocket of. . . [George Fabyan].

If Fabyan could have found some way to be paid, he would have insisted on it. Laundering the money through Mauborgne would have been one possible way to accomplish this, despite the laws that apparently prohibited it; this is one plausible motive for these payments.

There is a second possible motive for making the payments this way. A SIGINT organization is generally a covert activity; hiding the existence of one would have been seen as a good idea. The official publication of the U.S. order of battle describes the cipher division’s functions strictly in terms of protecting U.S. communications [1, p. 58]; there is no mention of SIGINT functions. This would have been especially important with respect to Mexico: Germany already had ample reason to suspect that Britain and France were engaged in similar activities, and one more such operation would not have increased their caution. (The British also tried to keep their cryptanalytic activities secret; they were rather upset, several years after the war, when the story of the Zimmermann Telegram was published [5]. Their caution may have been in vain; by late 1918, German Foreign Office cryptologists had already concluded that no known ciphers were secure [11]. Indeed, in official German government hearings in 1919–1920 on responsibility for the war, the government realized that cryptanalysis was behind the disclosure of this telegram [6, p. 18, quoting the German hearings].)

The dates on the four known checks are consistent with a periodic payment schedule: they’re all around the beginning or end of a month. (In 1917, Thanksgiving was the last Thursday of November [13], which was November 29; November 26 was the Monday of the holiday week.) However, the amounts are too low to be full compensation. Friedman speaks of “many thousands of dollars”; \$40 per month does not come close. Perhaps these were reimbursements for actual out-of-pocket expenses, a category perhaps not prohibited by law.

We have not been able to learn if Mauborgne was repaid by the Army for these expenditures. An examination of his service record by Betsy Rohaly Smoot found no evidence of such payments; on the other hand, there was also no salary information, suggesting that financial information was not included in the file. The National Archives says that payment records from that era were generally not kept for more than a few years.

At this point, we cannot determine which of these two motives is accurate; conceivably, both played a role. Similarly, we do not know why the payments were made. Nevertheless, it seems very likely that Fabyan did receive some money for Riverbank’s services.

Acknowledgments

George Kupczak graciously provided us with access to the AT&T Archives. Betsy Rohaly Smoot of the NSA Center for Cryptologic History checked Mauborgne’s service record for us. Jerry Docteur was very helpful and forthcoming with information about all of the Mauborgne checks he had. Sebastian Zimmeck translated portions of the PersZ memoir for me. As always, I am indebted to Rene Stein, the librarian at the National Cryptologic Museum.

References

- [1] Center of Military History. *Order of Battle of the United States Land Forces in the World War. Zone of the Interior: Organization and Activities of the War Department*. Vol. 3, Part 1. Reprint. Originally published: G.P.O., 1931–1949. 1988. URL: http://www.history.army.mil/html/books/023/23-3/CMH_Pub_23-3.pdf.

- [2] Jerry Docteur. Private communication. May 1, 2013.
- [3] George Fabyan. *Letter to Col. Parker Hitt*. Parker Hitt Papers, David Kahn Collection, National Cryptologic Museum. Oct. 25, 1919.
- [4] George Fabyan. *Letter to Joseph O. Mauborgne*. AT&T Archives, Folder 41-10-03-01. Nov. 7, 1919.
- [5] Peter Freeman. “The Zimmermann Telegram Revisited: A Reconciliation of the Primary Sources”. In: *Cryptologia* 30.2 (Apr. 2006), pp. 98–150.
- [6] William F. Friedman and Charles J. Mendelsohn. *The Zimmermann Telegram of January 16, 1917, and its Cryptographic Background*. Washington, D.C.: United States Government Printing Office, 1938.
- [7] *Item 669.4*. William Friedman Collection, George C. Marshall Foundation Library.
- [8] David Kahn. *The Codebreakers*. New York: Macmillan, 1967.
- [9] David Kahn. *The Reader of Gentlemen’s Mail: Herbert O. Yardley and the Birth of American Codebreaking*. New Haven: Yale University Press, 2004.
- [10] Louis Kruh. “Tales of Yardley: Some Sidelights to His Career”. In: *Cryptologia* 13.4 (1989), pp. 327–358. URL: <http://dx.doi.org/10.1080/0161-118991863998>.
- [11] Adolf Paschke. *Das Chiffrier- und Fernmeldewesen im Auswärtigen Amt: Seine Entwicklung und Organisation*. VS-6025, in Auswärtiges Amt: Politisches Archiv. Berlin.
- [12] *The Friedman Legacy: A Tribute to William and Elizabeth Friedman*. Sources in Cryptologic History 3. Center for Cryptologic History, National Security Agency, 2006. URL: http://www.nsa.gov/about/_files/cryptologic_heritage/publications/prewii/friedman_legacy.pdf.
- [13] *The Year We Had Two Thanksgivings*. Franklin D. Roosevelt Presidential Library and Museum, Marist College. URL: <http://docs.fdrlibrary.marist.edu/thanksg.html>.
- [14] James Wolcott Wadsworth, Jr. *Senate Committee on Military Affairs, Hearing on Increase of Pay for the Army, Navy, Marine Corps, Coast Guard, and Public Health Service*. Report 318, 66th Congress, 2d Session. Dec. 8, 1919.
- [15] Nationalversammlung (1919-1920). Untersuchungsausschuss über die Weltkriegsverantwortlichkeit. *Official German Documents Relating to the World War*. Translated under the supervision of the Carnegie Endowment for International Peace, Division of International Law. New York: Oxford University Press, 1923.

Steven M. Bellovin is a professor of computer science at Columbia University. His research focuses on security, privacy, and related public policy questions. He is the co-inventor of the Encrypted Key Exchange protocol, the first cryptographic mechanism designed for secure password-based authentication and session creation.