



When Intelligence Made a Difference

— EARLY 20TH CENTURY —

The St. Mihiel Offensive, September 1918¹

Betsy Rohaly Smoot

In the weeks before the American offensive against the St. Mihiel salient, and during the attack itself, the American Expeditionary Forces' signals intelligence (then known as radio intelligence) dramatically demonstrated its worth. The American attack was planned for September 12, 1918. A week before D-day,²

many sources of intelligence – particularly prisoner interrogations and aerial observation – indicated that the Germans would withdraw. The radio intelligence system attempted to detect this withdrawal to confirm the general belief that the Germans were leaving the salient. General John J. Pershing had a decision to make about how, and if, the long-planned attack would occur. And radio intelligence was the key to that decision.

The United States Army had no cryptologic agency when war was declared on April 6, 1917. In the seventeen months that followed, two loosely linked but independent cryptologic efforts developed: the Military Intelligence Division's Code and Cipher Section (MI-8) and Radio Intelligence Section (MI-10E) on the home front, and the American Expeditionary Forces' (AEF) G2A6 Radio Intelligence Section which worked closely with the AEF Signal Corps Radio Section and Code Compilation Section. The Signal Corps Radio Section – the organization that undertook interception of German communications – formed in September 1917 under the guidance of Captain (later Lieutenant Colonel) Robert Loghry, and the G2A6 began that same month with Major (later Colonel) Frank Moorman in charge.

By March 1918 the G2A6 effort began to have success breaking German codes and ciphers and

1. This article is adapted from the forthcoming publication *From the Ground Up: American Cryptology During World War I*, National Security Agency Center for Cryptologic History, 2022.

2. The St. Mihiel attack was the first time that the terms D-Day and H-Hour were used by the American army



contributing order of battle intelligence derived from direction-finding operations. Early on Lieutenant Charles H. Matz was designated as the future chief of the First Army G2A6 and the organization prepared to provide radio intelligence support in battle. The Radio Section established six different types of facilities to collect and locate German tactical communications transmitted by radio and front-line ground telegraphy/telephony.³

From mid-August the AEF G2A6 at Chaumont, the First Army G2A6 at Ligny-en-Barrois, and the AEF Signal Corps Radio Section collectors in both radio intercept stations and front-line listening stations, noted that operating procedures for German tactical communications were changing. In the St. Mihiel area, the volume of messages sent in the three-letter trench code had increased considerably. The code used by German forces in the salient changed on August 22, slightly earlier than expected.⁴ In late August the number of code groups per message increased, and messages with identical groups at the end were seen; the analysts presumed these to be a “signature” for named military units. All of the changes were very pronounced in sector H-25, the west side of the St. Mihiel salient. The weekly G2A6 Code Section report for September 10 noted that the use of the tri-numeral code had fallen off in both the Verdun and St. Mihiel sectors and that the messages were hard to decode; when decoded they appeared to be fake messages. Meanwhile the volume of three-letter code messages was still at a high level.⁵

Radio Section men occupied six American-run listening stations on the south side of the salient and probably worked in several more sites run by the French Army and located in the Bois d’Apremont, in the southwest corner of the salient. Though they found they were collecting fewer telegraph messages from the German front-line troops, the number of radio telephone conversations increased in the early days of September. The voices were new, they had different accents, and the speakers seemed unfamiliar with the

area.⁶ In April, delays in forwarding direction finding information had made it difficult for the G2A6 to provide useful warning messages to American troops, but by early September the service, thanks to the work of Lieutenants George Benjamin, Frank Ballard, Fred E. Johnston and Master Signal Electricians Virgil L. Long and Myron Tong, were able to deliver every report and message within an hour of intercept.⁷

Further deviation from the norm was observed on September 8, when the Radio Section reported unmistakable “signs of nervousness” along the southern side of the salient, with increasing activity (or “chatter” in modern terms) between September 8 and 11. The German radio station at the observation post on the Butte de Montsec was reported to be exceedingly active during the period, and this was attributed by the AEF G2 to the Germans reporting on US movements. Several of the AEF listening stations, including in the Bois d’Apremont and Limey on September 9 and Flirey on September 10 noted abnormal conversations and reported that enemy ground telegraphy stations had moved back, the analytic interpretation was fear of surprise attack. Conditions remained normal on the western side of the salient, opposite French forces, and to the analysts this meant the Germans expected the US to attack between St. Mihiel and the Moselle.⁸

Corporal Ellis C. VanderPyl submitted a particularly comprehensive report on September 9 from his post at listening station Le Renard (near Flirey), noting that there were many new stations and commenting that he had “never received as large a number of calls as today.” Some German listening stations had drawn back, with one very close to the front testing communications with other stations. VanderPyl suggested “it may be that they know of what is coming here and this drawing back is done as a precaution.”⁹

On the afternoon of September 11, analysis of the day’s direction-finding information revealed that all enemy radio stations were still in their normal positions and in operation – judged to be an impossibility if the Germans were in the process of withdrawing from the salient, for they had never kept radio stations in operation as late as one day before a withdrawal. Charles Matz, leading the First Army G2A6, made a

3. Radio traffic was collected by radio intercept stations and located using direction finding stations that targeted both ground-based and airborne emitters. Ground telegraphy/telephony communications used on the front lines were intercepted by listening stations. These stations were usually within one mile of the front line and collected telegraph and voice communications via ground induction antennas placed in no-man’s land.

4. Weekly Code Section report, August 27, 1918. National Archives and Records Administration (NARA), College Park (CP), Records of the American Expeditionary Forces, Record Group (RG) 120, Entry (E) 105, Box 6696.

5. Weekly code Section Report, September 10, 1918. NARA CP, RG 120, E105, Box 6696.

6. First Army, Summary of Intelligence No. 8, September 6, 1918. NARA CP, RG 120, E765, Box 11.

7. G. W. Henyan, Narrative 125, December 1, 1918. NARA CP, RG 120, E2040, Box 130.

8. “Listening Station Report Week ending September 12, 1918,” September 14, 1918. NARA CP, RG 120, E24, Box 3367.

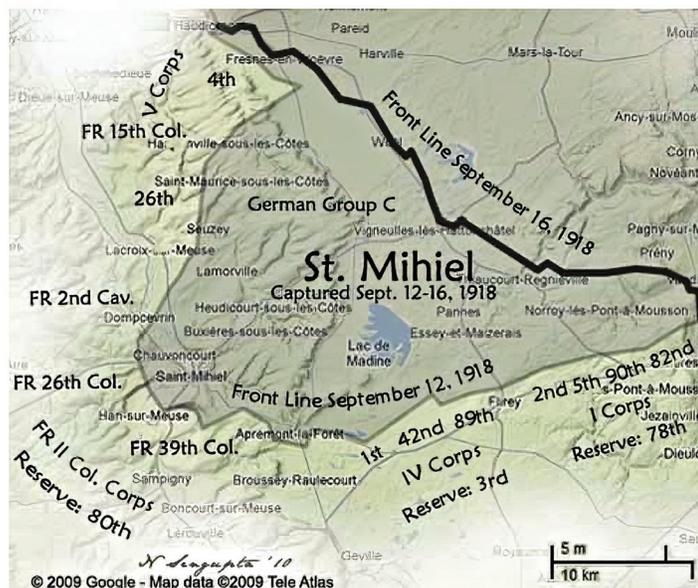
9. Within a memo from Frank Moorman to Charles Matz commending VanderPyl’s work, September 16, 1918. NARA CP, RG 120, E105, Box 5765.

map showing that all the German radio stations were in their usual places and had been very active. Matz knew that the preponderance of the other intelligence indicated a withdrawal had taken place or was underway. Observation airplanes, flying just before dark at a height of 100 meters, had circled the German position at Montsec – not only had they not seen any enemy units, but the planes took no ground fire. The radio intelligence map, which Matz took to Colonel Wiley Howell, the Chief of the First Army G2, was the only direct evidence the Intelligence Section had that the Germans were still in place.¹⁰

At the First Army staff meeting, at 4 pm on the afternoon of September 11, Howell explained the map.¹¹ In his office at Ligny, Pershing was “urged by almost every one present to call off the attack, as the terrific artillery barrages which were scheduled were likely to result in only a needless waste of ammunition. He was advised that it would be better to wait and occupy the salient

later when all German forces had been withdrawn.”¹² But Howell convinced the group that the barrage should be used as planned, based on the overwhelming evidence provided by radio intelligence showing that three lines of German stations were in place.¹³

The barrage began the next morning at 1 am and the attack commenced at 5. The Germans were still in the salient, although some units had indeed begun preparations for withdrawal. Had US forces attacked without the preparatory artillery fire many more lives



may have been lost. Radio intelligence proved its value as a battlefield on September 12, 1918. Matz expressed his pleasure to Moorman, writing “I think that shows that even if we never solve another code message we still have a right to live.”¹⁴

There are many reasons why this clear-cut contribution of radio intelligence to success at St. Mihiel has been forgotten in the history of this pivotal American engagement. The St. Mihiel offensive itself quickly began to slip from memory followed, as it was, by the massive and bloody seven-week Meuse-Argonne offensive and the November 11 armistice. St. Mihiel, the first major US-led operation of the war has been neglected by historians until recent years.¹⁵ Contributions of radio intelligence at St. Mihiel appear in many articles and lectures during the 1920s, but start to disappear from accounts of the battle, and the war, in the 1930s. Even Dennis Nolan, the Chief of the AEF G2, who seems to have been impressed by the G2A6 effort at the time, by 1933 placed

emphasis on role of captured documents rather than radio intelligence. The decline in discussion of radio intelligence success is perhaps attributable to the chilling effect of the government reaction in the form of changes to the Espionage Act in 1933 that resulted from the revelations of Herbert O. Yardley’s *The American Black Chamber*.¹⁶

Radio intelligence also provided operational support during the St. Mihiel offensive itself. Although German radio stations showed great disorganization on September 13, the next day Matz and his team

10. Matz to Moorman, September 16, 1918. NARA CP, RG 120, E105, Box 5767.

11. While a few post-war accounts of the meeting imply that Matz was there, Matz’ own account does not.

12. L. W. Comstock, “Radio Intelligence and Security,” Lecture to Post-Graduate Students, June 22, 1926. NARA CP, Records of the Office of the Chief of Naval Operations, RG 38, E1029, Box 32.

13. Matz to Moorman, September 16, 1918 ; the same conclusion is drawn by many others including RG Comstock, Lecture, June 22, 1926; Krumm and Taylor, “Wireless in the AEF,” *The Wireless Age*, 7, no. 4 (January 1920), 12; William E. Moore, “The Crisis of St. Mihiel,” *The American Legion Weekly*, Volume 4, No.23 (June 9, 1922) 7 – 8; 26; Thomas M. Johnson. *Our Secret War: True American Spy Stories 1917-1919*, Indianapolis: Bobbs-Merrill Co., 1929, pp. 15-6.

14. Matz to Moorman, September 16, 1918.

15. See Mark E. Grotelueschen, “The Doughboys Make Good: American Victories at St. Mihiel and Blanc Mont Ridge,” *Army History*, no. 87 (Spring 2013), pp. 7-16. and that author’s forthcoming book on the St. Mihiel offensive. Also see Donald A. Carter, *St. Mihiel 12-16 September 1918*, (Washington, D.C., Center of Military History, 2018) for a concise examination of the offensive; the publication can be found online here: https://history.army.mil/html/books/077/77-7/cmhPub_077-7.pdf.

16. Betsy Rohaly Smoot, “The Cryptologist’s War: How World War I Helped Weave the ‘Cloak’ of Cryptologic Secrecy,” *Cryptologic Quarterly*, 2017-13, pp. 31-9.

reconstructed new divisional networks and provided the G2 Order of Battle section with valid divisional boundaries and locations of command posts.¹⁷

Another success was the successful warning of troops, three hours prior to a German counterattack. At 9:15 pm on September 14, the radio intercept site at Toul intercepted a message that was probably in the three-number code.¹⁸ When broken, the message revealed Germans would counter-attack in the area of the Souleuvre Farm, outside of Rembercourt. This attack was expected near midnight, and American forces were warned.¹⁹ This intercept was a critical piece of information in First Army Field Orders No 12:

The enemy has made a considerable aeroplane [sic] concentration near Conflans. There has been considerable railroad activity today on the lines leading south through Mars-la-Tour, Conflans, and Chambley, indicating a possible enemy concentration. An intercepted message stated he will counterattack tonight near Rembercourt. Our patrols have crossed the Hin-

denburg Line in numerous places. The French Second Army has occupied the towns of Wadronville, Saulx, Fresnes, Manheulles, Avillers, Riaville, Rinthewille, and St-Hiliare. The army corps report further capture of enemy officers, soldiers, guns and materiel.²⁰

Although the attack appears not to have materialized,²¹ the First Army Radio Intelligence Section continued to monitor the situation as the AEF worked to consolidate operations in the salient. The First Army would soon move on toward the Verdun sector to prepare for their next offensive. Confident that their work was making a difference in the fight, the First Army Radio Intelligence Section did the same.

Betsy Rohaly Smoot retired from the Center for Cryptologic History (CCH) of the National Security Agency in 2017. *From the Ground Up: American Cryptology During World War I* will be available from CCH in mid-2022. Her book *Parker Hitt: Father of American Military Cryptology* was published by the University Press of Kentucky in late March 2022.

17. Matz to Moorman, September 16, 1918.

18. Daily Code Section Report, September 17, 1918. NARA CP, RG 120, E105, Box 5757.

19. "Functioning of the Radio Intelligence Section During the St. Mihiel Operation, August 10 – September 16, 1918," undated G2 Report. NARA CP, RG 120, E105, Box 5761.

20. *The United States Army in The World War 1917-1919*, Volume 8, 262.

21. James H. Hallas, *Squandered Victory: The American First Army at St. Mihiel*, Westport, CT: Praeger, 1995, 202.