

# The Written Foundations of Signal Excellence

*MG George Squier*

**Sgt. Maj. Noel DeJesus**  
*Sergeants Major Academy*

Professional military writing has always been central to how the U.S. Army learns, adapts, and preserves its institutional wisdom. Nowhere is this more evident than in the history of the Signal Corps, a branch built not only through technological innovation but also through the written word.

From its inception, the Signal Corps depended on leaders who could articulate ideas, codify lessons, and translate scientific discovery into doctrine. This legacy reflects a broader truth about the Army as a whole. Writing has consistently served as a bridge between innovation and application, allowing individual insight to transform into organizational capability.

Maj. Gen. George Owen Squier stands as one of the most compelling examples of this tradition. His career demonstrates that writing remains one of the Army's most enduring and influential instruments of professional development.

## **Origins of the Signal Corps**

The origins of the Signal Corps reveal that writing was never a secondary task but a foundational requirement. The earliest history of the Signal Corps shows that Brig. Gen. Albert Myer's wigwag signaling system grew directly from his scholarly work, particularly the written "system of sign writing" he first developed in his 1851 medical dissertation. His academic study of telegraphy and his correspondence with scientific and naval experts demonstrated that the Corps' founding innovation emerged from deliberate intellectual inquiry and written conceptual design rather than field improvisation (Coker and Stokes, 1991).

## **Post-Civil War Expansion**

The post-Civil War expansion of the Signal Corps reflected a growing reliance on written documentation to guide the Army's adoption of new communication technologies. Under Brig. Gen. Adolphus Greely, the Signal Corps introduced heliographs, field telephones, and photographic techniques into Army practice, each supported by formal instruction, experimentation reports, and published technical material that enabled Soldiers to employ emerging systems effectively. Greely institutionalized written technical guidance by adding a photography course to the curriculum at Fort Riley, Kansas, and overseeing the publication of the Army's first *Manual of Photography* in 1896, demonstrating how written doctrine translated scientific innovation into operational capability. His initiatives also standardized communication practices across the

force, from placing telephones in lighthouses and life-saving stations to supervising a nationwide network of weather observatories. These developments show that the Signal Corps depended on written doctrine and technical manuals to integrate new technologies into Army operations, and that this written culture became a defining feature of its intellectual identity (Coker and Stokes, 1991).

## **Maj. Gen. George Owen Squier**

Into this environment stepped George Owen Squier, an officer whose professional identity was shaped as much by scholarship as by field service. Squier's biography illustrates the intellectual discipline that defined his career. He became the first American military officer to earn a doctoral degree, completing a doctorate at Johns Hopkins University, Maryland, while assigned as a young artillery officer and later a signal officer (Taint, 2022). His pursuit of graduate education during an era when such academic depth was rare for military professionals demonstrated an early recognition that intellectual rigor was inseparable from operational competence. Throughout his career, Squier used writing as the primary mechanism for influencing doctrine, guiding modernization, and shaping Army thought.

Historical records show that Squier's written contributions predated many of the technological advances that now define the modern Signal Corps. His early publications in scientific journals explored wireless communication, telegraph multiplexing, and materials research, allowing him to translate emerging scientific discoveries into military applications long before World War I demanded them (Taint, 2022). During the war, Squier oversaw massive growth in Army communications capability and authored doctrinal guidance that integrated telephones, radios, and wire systems into the American Expeditionary Forces. The Army's official histories note that Squier's leadership and writing transformed the Signal Corps from a small technical specialty into a modern communications enterprise capable of supporting large scale operations (Terrett, 1954).

## **Importance of Professional Military Writing**

Professional military writing serves several essential functions that remain vital today. First, writing preserves institutional knowledge at a depth that no briefing or discussion can replicate. Jamieson's work on the Army Library Service demonstrates that written knowledge has long provided Soldiers with intellectual resilience and a means for understanding the broader context of their service during periods of conflict (Jamieson, 1950). The ability to read, write, and reflect has historically shaped how the Army maintains its professional

identity under conditions of stress.

Secondly, writing advances the Army as a profession. Clark and Sloan's analysis of early military classrooms shows that structured reflection and written scholarship were early markers of professionalization, linking leader development to intellectual engagement (Clark and Sloan, 1964). This professional discourse continues in modern journals such as *Military Review*, the *NCO Journal*, and the *Army Communicator*, where writing functions as an instrument of debate, learning, and organizational renewal.

Thirdly, writing connects innovation to application. The Army's modernization efforts during the first half of the 20th century, including the development of FM radio and radar, succeeded because technical experimentation was accompanied by rigorous doctrine and detailed written instruction (Terrett, 1954). Innovation becomes meaningful only when it is communicated clearly to those who must employ it.

### **Army Learning Concept 2030-2040**

Modern doctrine reinforces these themes. The Army Learning Concept for Training and Education 2030 to 2040 emphasizes a need for Soldiers who can think critically, communicate clearly, and engage in continuous learning to meet demands of future operational environments (TRADOC, 2024). These imperatives are not new. They reflect the same intellectual commitments that guided Squier and his contemporaries.

Writing remains an essential element of readiness because it forces leaders to interrogate their assumptions, articulate their reasoning, and offer insights others can use. This is particularly important for the Signal Corps, a branch defined by rapid technological change

and complex operational requirements. When communicators write, the entire Army benefits.

### **Model of Excellence**

Squier's legacy provides a model for today's signal leaders. He demonstrated that writing is not an optional endeavor but a professional responsibility. His publications influenced how the Army understood early aviation, wireless communication, and large-scale network integration. His work shows that the most enduring contributions of signal leaders are often found not in equipment or technical systems but in the ideas that shape their employment.

Professional military writing allows Soldiers to transform individual experience into shared understanding and ensures that lessons learned are not lost to time. It links generations of practitioners, sustains the Army as a learning institution, and strengthens the profession of arms.

The Signal Corps has always been a branch of thinkers and innovators. From Myer's wigwag manuals to Squier's scientific articles to the doctrinal writing that underpins digital networks today, the Signal Corps has advanced through the disciplined act of capturing knowledge in written form.

As the Army confronts the challenges of multidomain operations, contested electromagnetic environments, and rapid technological acceleration, the need for thoughtful professional writing has never been greater. Squier's example reminds us that communicators serve the Army not only through technical mastery but also through intellectual leadership. Writing remains the most powerful way to ensure that the Army continues to learn, adapt, and thrive.

### ***About the author***

Sgt. Maj. Noel DeJesus is a Bronx, New York, native and graduate of the United States Army Sergeants Major Academy, Class 74. He currently serves as a Sergeants Major Academy Fellow, attending Penn State University. DeJesus is a distinguished member of the Lieutenant General (Retired) James M. Dubik Writing Fellowship and holds a Master of Arts in Administrative Leadership from the University of Oklahoma.

### ***References***

- Clark, J. A., & Sloan, M. (1964). *Classrooms in the military*. Waveland Press.
- Coker, K., & Stokes, C. (1991). *A concise history of the U.S. Army Signal Corps*. Office of the Command Historian, U.S. Army Signal Center and Fort Gordon.
- Jamieson, J. (1950). *Books for the Army: The Army Library Service in the Second World War*. Columbia University Press.
- Taint, M. (2022). Major General George Owen Squier, father of American airpower and military technocracy. *Proceedings of the Ohio Academy of History*.
- Terrett, D. (1994). *The Signal Corps: The emergency to December 1941*. Center of Military History, United States Army.
- United States Army Training and Doctrine Command. (2024). *Army learning concept for training and education 2030 to 2040 (TP 525 8 2)*. U.S. Army Training and Doctrine Command.