Introduction

Rediscovering the Indispensable Man

UNABLE to sleep, I slipped down the hallway and into a spare bedroom that doubled as my library. I pulled down a black buckram-bound, gold-stamped volume of the *Official Records of the Union and Confederate Armies*, and randomly flipped through it. When I came across "Confederate Powder Works" and "Col. Geo. W. Rains," I paused, intrigued. What exactly was a "powder works" and who was Colonel Rains? I turned to the index. It was early 1988. I was a young California attorney about to strap in for a journey that would last thirty-eight years. Who knew?

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Every era of history has fascinated me for as long as I can remember, the Civil War in particular. After earning a bachelor's degree in American history from the University of Northern Iowa and spending a year there working toward a master's degree in the same subject area, I attended the University of Iowa College of Law and graduated in 1986. I drove to California, passed the bar, and began my practice in Silicon Valley. I frequently traveled to the East Coast—sometimes for work, often for pleasure—which made conducting research considerably easier.

After devouring secondary sources, I flew to Washington, D.C., to visit the National Archives. I spent a week digging through everything Rains-related. Imagine my delight when I discovered an extensive cache of daily powder works operational records, together with other bits of related arcana. Archivist Michael Musick (who I soon learned knew more about Civil War records than anyone and was always ready to help) assured me that, to his knowledge, no one had ever asked about them. I copied the collection onto microfilm (that was the only option) and later hired a specialized service to make paper copies. The oversized stacks rest near me as I write.

The first tangible result of my efforts was a 1990 article in the *Journal of Confederate History*. "The Life-Blood of the Confederate War Machine: George Washington Rains and the Augusta Powder Works" garnered a few letters, one from Robert Turbyfill of Augusta, Georgia, who enjoyed the article and informed me he was the head of the George Washington Rains Sons of Confederate Veterans camp and would be more than happy to help with anything I might need. The real odyssey was about to begin, but I had no idea it would take nearly three decades longer than Odysseus's journey home to Ithaca.

Rains noted that he kept Civil War diaries. Were they buried away in Augusta? Robert had no idea, but he believed the original oversize color plates, blueprints, and drawings of the powder works were stored in the Augusta-Richmond County Museum. Only a handful had ever been published or seen by the public. When I visited the museum that April, I soon learned its director Richard Wescott was more interested in dinosaurs than history. He was a pleasant man, though intentionally unhelpful. I made it to an upper floor and, to his chagrin, discovered several large drawers jammed with the oversize color documents. Wescott professed to know little about them. I explained they were "the Rosetta Stone of Confederate industry," that they were priceless in both a historical and pecuniary sense, and critical to my research. My excitement stood in opposition to his hostile reaction. He steadfastly refused to allow me to use them in any way and after I left, locked them in a local bank vault. (The museum also had Rains's sword and, hanging unprotected from the ceiling in the lobby, the giant garrison flag that had once flown over the powder works.)

Bob Turbyfill suggested I contact Thomas Heard Robertson, a prominent Augusta native and engineer who had once sat on the museum's board of directors. Tom generously stepped up to help me after I reached out and explained the problem. He promised me action. "Please allow me to apologize for our community's lack of hospitality in this case," he wrote, "and express my regret that you will have to make a second trip to our city for your research purposes." Tom's intercession, with the help of board president Duncan Wheale, gained me access inside the bank vault, where Wescott limited me to a yellow pad, one pencil, and one hour. You can imagine my frustration. It was a waste of time. The drawings remained there for years, mostly forgotten.

I published another couple of articles and was invited to speak in Augusta in May of 1992 at a talk that was well attended and well received. I traveled a lot back east in those days and there was something Rains-related everywhere I went, so I haunted museums and archives large and small and filled yellow pads with notes and manila files with copies of everything I could get my hands on. By this time I was a father, as I would be again in 1996. My law practice was heating up, and I was living on the wrong coast. Rains took a backseat to life.

What I did not know was that Augusta's museum had a new curator, Gordon Blaker, and he was working with Georgia anesthesiologist and Civil War enthusiast Cordell L. (Chip) Bragg to assemble a team of experts to collaborate on a comprehensive book based on Rains and the architectural drawings. Dr. Bragg, who eventually became the project's lead author, brought me into the fold in the early 2000s to pen the biographical chapters. The final team included Civil War historians, a physics professor, and an architectural historian. We worked well together, and the effort paid off with the publication of the award-winning oversize full-color book *Never for Want of Powder: The History of the Confederate Powder Works in Augusta, Georgia* (Univ. of South Carolina Press, 2007). The research and source material inside this extraordinary collaborative effort is first-rate and I cite it often throughout the book you are now reading.

I decided two chapters in that book (plus a joint one with Bragg) meant my duty was done. I put Rains behind me. Thirteen years later in early 2020, I discovered three large plastic totes stored in my garage closet marked "RAINS." Each was stuffed with research. I had a cabinet in my library with several thick Rains-related files but had forgotten I had so much. A couple of hours reminiscing with the index cards, yellow pads, and thousands of copied pages sprawled around me as if a tornado had swept through the room convinced me that I was not yet finished with my elusive subject. The man had led an extraordinary life, and he deserved a full biography. Who else if not me?

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George Washington Rains led five very different lives. His fourth, as a Confederate ordnance officer during the Civil War, changed history.

His first life began in 1817 in New Bern, North Carolina, where he was born to a father who built beautiful furniture and cheap caskets, went broke, and fled with the family to Alabama one step ahead of his creditors. At sixteen, after failing to gain entry to West Point, George traveled to the Oklahoma territory and Fort Gibson to visit his older Army officer brother Gabriel. He spent many months there, likely took part in at least one expedition, and met a young lieutenant named Jefferson Davis. He made the arduous 700-mile return journey home alone in a dugout canoe down the Arkansas River to Little Rock and then into the Mississippi. From there, he paddled south to Vicksburg, sold his canoe, and journeyed overland back home to Linden, Alabama. George wanted nothing more than to be a soldier, but his effort to enter West Point was again denied. He marshaled through four painful annual rebuffs before finally entering the academy on his fifth try in 1838. By this time he was twenty-one.

The commencement of his second life began along the scenic Hudson River, where four years later he graduated third in the prestigious class of 1842 that included such notables as James Longstreet, William Rosecrans, D. H. Hill, and A. P. Stewart. Rains was now a U.S. Army engineer (and soon-to-be artillery) officer.

Garrison duty and a short stint teaching at West Point preceded his Mexican War service—which was nothing short of astounding. After overseeing a logistics depot in southern Texas, Rains escorted prisoners by ship to Vera Cruz. He was the first American to enter the city, ostensibly to exchange POWs, though his primary purpose was to spy for a commodore and Gen. Winfield Scott. He came under artillery fire in a small boat while rubbing shoulders with four future Civil War army commanders, assisted with the landing and siege of Vera Cruz, and enjoyed a long stint as a combat staff officer in the battles inland all the way through the capture of Mexico City, during which he was wounded and breveted twice. His firsthand accounts of this phase of his life are rich in detail not found elsewhere.

A long decade of dreary garrison duty and service against the Seminoles in Florida followed. Eventually, the U. S. Army dropped Rains into Fort Columbus in the harbor of New York City. There, in 1856, the frustrated and broke 39-year-old captain married Frances Josephine, the daughter of Homer Ramsdell, one of the richest and most powerful men in America. The ceremony ended his second life.

Warmly embraced by the wealthy and powerful Ramsdells, Rains moved upstate to a mansion in Newburgh and stepped into an entirely different world. Homer put him in charge (and made him part owner) of the large and profitable Washington Iron Works nestled against the Hudson River. Rains spent most of the next five years accumulating wealth, a new daughter, and a multitude of talents managing a complex operation, employees, deadlines, and production issues. Secession tore it all asunder when his home state left the Union and he left his family. The Ramsdells told him to never return. His third life ended much sooner than he had originally envisioned.

The three decades Rains spent living his fifth and final life began in 1865 with the close of the Civil War and ended with his death in 1898. He spent nearly all those years living in Augusta, teaching in the Medical College of Georgia, serving as its dean, writing papers, and publishing books. He especially enjoyed participating in Confederate Survivors Association events and working with his students. This was a personally difficult time for him because the strain of his life's choices had worn down his marriage; the horrific death of his daughter Fanny in 1883 pushed it over the edge. His wife moved back to New York permanently (as his daughter had done years earlier). The aging prodigal son retired and returned to Newburgh in 1894 just one month after Homer Ramsdell's death. The family welcomed him with open arms. His was a bittersweet homecoming, rich with might-have-beens.

Were it not for the life tucked between his third and his fifth, this book would never have been written. Rains broke apart his family to travel to Richmond in June of 1861, not hoping for a commission but for a prearranged purpose. He could have easily held out for a brigadier general's commission and the glory of action, but instead accepted a thankless task in the shadows that would prove to be much more important than the command of a regiment, brigade, or even an army. His new duty was to locate, plan, build, and manage a central government gunpowder works "of sufficient magnitude to supply the armies in the field and the artillery of the forts and defences."

In a personal meeting with President Davis, Rains learned the Southern states had almost no gunpowder, that producing military-grade powder at scale was very difficult, and that there was not a single mill in the Confederacy capable of manufacturing it. A factory of that magnitude would take most of a year to build, if it could be built at all, but the president assured him he would do all he could to buy him the time and the space he would need. Failure would abruptly end the nation-building experiment. Rains, who felt the weight of this responsibility and would write of it often, requested and received *carte blanche* to do as he saw fit without outside interference. He was not about to take on this obligation if others could meddle with the details and influence its outcome. He had years of experience enduring the inefficiencies of government bureaucrats.

Rains spent months riding railcars across the Confederacy, during which he sketched out plans for his brilliant architect, C. Shaler Smith, who, together with others, turned them into the colorful pieces of oversize art used to erect the complex that would stretch for nearly two miles along the Augusta canal. The buildings comprising the Augusta (Confederate) Powder Works were the only major permanent structures completed by the Confederacy during the Civil War. The sprawling factory began formal operations on April 10, 1862, halted production weeks after Appomattox on April 28, 1865, and produced in the interim more than three million pounds of quality gunpowder. The math does not lie, and the records tell the story: without Rains and his impressive accomplishments in both Tennessee and Georgia, the war would have ended as early as the autumn of 1861—and no later than early 1862.

His unheralded service in Tennessee during the second half of 1861 remains even less known to history than his role building and managing the powder works. General Albert Sidney Johnston, explained Rains, "had not sufficient ammunition at that time for an extended skirmish, and there was no remedy until I could manufacture it for him." Rains carefully selected his lieutenants and went to work. He expanded and upgraded the old Sycamore blasting powder mill and oversaw the construction from scratch of a second private mill. After organizing and training teams across several states to scrape niter from caves, he erected a refinery in Nashville to purify it, without which the gunpowder could not have been produced. None of this powder was made until late in

the autumn of the war's first year. Most of it, in the form of ammunition, trickled to Johnston's Western Theater forces and slowly stocked Forts Henry and Donelson, Columbus, Kentucky, the defenders of Bowling Green, and other locations. Without these unheralded accomplishments, no defense of Kentucky or the inland rivers would have been possible. There would have been no Shiloh and no fighting in the Mississippi River Valley. The wartime story of George W. Rains was just getting started.

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I eventually discovered that much of what has been written about Rains is only correct in broad strokes, and the sources—few and repetitive—rely on one another and thus lead nowhere. Secondary history books barely mention him, even in passing, and often confuse him with his older brother Gabriel. The firsthand letters, telegrams, diaries, and reports of those times, written by the men who lived them, put flesh on the bones and paint a completely different picture. Gathering those puzzle pieces and figuring out how they intersected proved to be quite difficult.

Rains kept extraordinarily interesting and opinionated "pocket" diaries throughout his life, including during the Civil War, but other than fragments from the Mexican War and garrison duty, none have come to light. He corresponded often with his Confederate brigadier brother Gabriel (associated with "subterra" landmines), but only two or three letters have surfaced. We have but a single letter from his wife (as a young teenager), and none from him to her. Most of his correspondence and telegrams are scattered between countless institutions and embedded within scores of compiled service records, citizen files, adjutant and inspector general records, and the various arsenal and armory letter books. Newspaper accounts by the score describe his exploits and travails and include lengthy and fascinating interviews with him.

I was fortunate during the early years of my research to make the acquaintance of Ruth Ramsdell Holden, the delightful great-niece of Rains's wife Frances Josephine Ramsdell. Ruth was well-versed in the family's genealogy and history, loved to talk on the phone, dropped me invaluable letters and postcards, and helpfully passed along copies of important family documents (including an unpublished biography of Rains's ill-fated daughter Fanny Powell penned by her Aunt Leila, whom you will meet soon). Ruth also shared oral family history, passed generation to generation, that dovetails well with other records, dates, and events.

The advancement in digital research tools significantly changed the course and scope of this project. What began as a straight biography years before the existence of the internet morphed into something different on a chilly Northern California day in January 2020 when I began using keywords to search through the *Official Records*. This

set approaches 140,000 pages in 128 separate volumes. The index was excellent for its time, but it is also byzantine in its arrangement and incomplete. If something appears in one of the volumes but is not in the index, it is nearly impossible to find. Gunpowder, for example, is buried under the "munitions" umbrella, and reviewing hundreds of pages produced little or nothing of value for my study. My methodical digital search for "powder" and other related terms changed all that. I pulled out a fresh yellow pad and prepared my own index and subject headings for each volume.

The human mind excels at gradually discerning patterns that are not obvious at a glance, especially when it returns to the same material from different angles. What initially seemed, during the war's first year, to be disconnected letters, telegrams, and reports resolved into a coherent pattern of events that, so far as I can determine, has never been discussed by another historian. The picture of what was really going on during the first twelve months of the war began to take shape.

Also important was a previously unpublished and little-known memorandum penned by Rains near the end of the war. The undated, thirty-page, handwritten document ends mid-sentence. Who knows how much more he had to say? What I do know is that this indispensable report outlines his entire service in deeply personal prose, from the receipt of his commission in Richmond on July 10, 1861, through his efforts to find the right location for the powder works, and on to his extensive work in Tennessee and across the Confederacy. His eyebrow-raising description of the true state of Albert Sidney Johnston's ordnance woes is chilling. That, coupled with the passivity of the enemy at a time when Johnston's men could not pull triggers for any prolonged period, sheds a completely new light on what I thought I knew. The pieces I was assembling also revealed that this deficiency was not limited to the Western Theater, but extended to the entire Confederacy, including Virginia. And the Lincoln administration knew it.

How did all this affect strategy? When it comes to the war, most historians and general students have engaged in what I call reverse-engineered thinking—that is, they start at the end and work backward. For example, because the war lasted four years, they assume the Confederacy always had the means to wage it. The fact that they were occasionally short on arms and ammunition is treated as irrelevant, because they fought a long war to absolute exhaustion and defeat. While this is partially true, the details tell a very different tale.

The final piece that tied everything together and revolutionized how I now view the first year of the war was found inside the *Official Records of the Navies*. Someone had misfiled the important document. To my understanding, the key portion that turns much of what I had been taught upside down by binding the scores of telegrams, letters, reports, and various writings into a cohesive narrative has never, until now, been

published, mentioned, or utilized. Read alongside Rains's wartime assignment, letters, and other writings, it points to a Civil War strikingly different from the one recounted in the history books or heard on the lecture circuit.

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I would like to take a moment to explain the scope and structure of this study and how to best digest it for maximum value and insight. This is not a Clive Cussler beach read, so you probably will not sit and breeze through fifty pages in one sitting. I always intended for it to be a complete accounting of Rains's life (as far as such a thing is possible), so a significant portion is dedicated to his pre-Civil War years. Those decades, chronologically presented, shaped the man he would become. It is impossible to understand who he was and what he was able to achieve from 1861 to 1865 (and beyond) without a full appreciation for how he built his incredible talent stack year by year, experience after experience, prior to the war. If you stick with it, I think you will find it fresh, original, and rewarding.

The rest of the book is not fully sequential, and Rains fades from view during stretches while others take center stage. These characters are important, and you must understand their roles and their relationships—personal and professional—to Rains. The *Dramatis Personae* helps flesh them out.

Understanding Rains, the role of the powder works, and his ties to all the arsenals and the armies requires a broad-strokes history of the major events of the war, so his daily responsibilities can be appreciated in context. Trying to weave an event in Virginia with an episode in Tennessee and a battle along the Atlantic seaboard into Rains's daily regimen would have interrupted the main storyline, which I have tried to keep as clean as possible. Except in the later chapters, as the war thunders toward its climax, military events are summarized, usually as the opening of a chapter. This allows you to follow, with fewer interruptions, the nuts and bolts of Rains's daily grind and momentous challenges as he struggled to keep the armies in the field and the seacoast guns operational. After reading a draft of this study, Dr. John Coski, former historian at the Museum of the Confederacy, described it as a unique history of the Civil War told through the lens of gunpowder. I confess I had not fully seen my own book that way.

A historian friend cautioned me that combining biography with strategic history is bad practice—two genres that do not fit comfortably together. He may be right by the usual rules. But Rains's achievements did not run parallel to the war's strategic turns; they drove them. To tell his story without also tracing how a scarcity he solved shaped decisions coming out of Richmond would not be a cleaner biography. It would be an incomplete one. Much of this documentation was available but stripped of its context,

understood in pieces rather than as a whole. Separating his biography from the course of the war would only perpetuate that same obfuscation.

Now let's talk about powder. You will learn more about it than you perhaps care to, but this is important because, like me at the outset of this project, most historians and general readers of the war have no idea how complex it was to produce or that there were different sizes and types of powder grains that were not interchangeable between weapons. These pages are replete with evidence of shortages everywhere, at all levels, nearly all the time, during the war's first year. I decided to err on the side of providing too many examples rather than too few, and I relegated a large percentage of this information to the footnotes. My hope is that you will wonder why you have never heard any of this before and that it will convince you to reconsider some of the beliefs you now hold.

If you want the least cluttered understanding of the man and his life, keep your eyes above the footnotes and keep turning the pages. The notes contain all the extra tidbits, side stories, tangential information, sources, and context for a better, deeper, and richer understanding. If you want the full story, I urge you to take the time to read the notes slowly and thoughtfully. Try a chapter a day, close the book, and contemplate. There is much here to digest, and much of it is new.

A quick note on the two appendices. The first, "Why Did Sherman Bypass Augusta?" is provocative, but it is also the product of decades of research, reflection, and writing. I strongly recommend that you absorb the main text *before* reading this essay. The second appendix, "Black Labor and Southern Powder: A Statistical Examination," analyzes the daily powder works records to evaluate the racial composition and skilled/unskilled makeup of the workforce. This, too, is best read after you have finished the primary narrative.

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The lessons of George Washington Rains's career are as relevant today as they were in 1865. As you will read, he drew on his knowledge of chemistry, engineering, military science, and organizational ability to innovate relentlessly under wartime duress. He always kept his word, earning the trust of subordinates and superiors alike through sound judgment and resourcefulness in times of scarcity. The challenges he navigated—improvisation, deprivation, and relentless pressure—are timeless. His adaptive strategies amid shortages parallel modern supply chain crises.

Once you finish this book, I believe you will recognize George Rains as one of the most remarkable figures in American history—and one uniquely equipped to achieve what he did. He was truly indispensable.