From CodeMaking To PolicyMaking



Lieutenant Russell Willson Flag Secretary to Rear Admiral Aaron Ward Four Decades in the Memorable Career of Russell Willson

By Raymond P. Schmidt





his is the story of a bright young man from a family of modest means who became a star in the U.S. Navy of the 20th century.

As a seasoned junior officer, Russell Willson received the Navy Cross in 1918 as the trailblazing inventor of a critical secret cryptographic device and manager of a complex and secure Navy-wide communications system during World War I. Willson then resumed his career at sea and was elevated to command destroyer divisions and a powerful battleship and a battleship

division. During the interwar years, Willson also served abroad in two key shore postings that expanded and honed his operations and diplomatic skills.

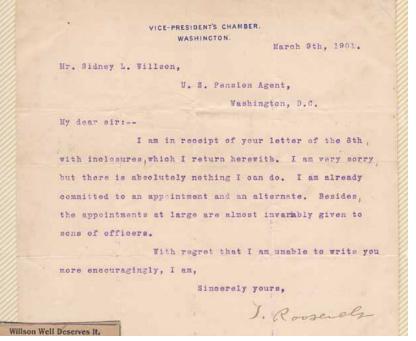
Shortly after the United States was attacked at Pearl Harbor in December 1941, Navy senior leadership wrenched him from his brief assignment as Naval Academy Superintendent and promoted him to the second-highest uniformed job in the Navy. After failing health forced him to retire at the end of 1942, President Franklin Roosevelt's administration tapped him for major roles that shaped international relations in the postwar world. In those roles, Willson made possibly his greatest contributions to world and national security during the 40 years he served as a Navy officer.

Willson's Roundabout Path to a Navy Career

Russell was born in 1883, the son of Sidney L. Willson, an enlisted Union soldier from New York who, at the age of 18, lost both legs below the knees at the Battle of Gettysburg in July 1863. In 1884 Sidney moved his family from Fredonia, New York, to Washington, D.C., where he served as a pension agent. Although Sidney lived in pain every day, his sacrifice inspired Russell early in life to seek a career in the Army. According to a newspaper account of

Opposite: Lt. Russell Willson during World War I. For his work developing the Navy Cipher Box, he received the Navy Cross. Above: Russell Willson at age 16, one year before graduating from high school. Top: Willson's medals include the Navy Cross, the Navy Distinguished Service Medal, the Army Distinguished Service Medal, and the Order of the British Empire.

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Russell Willson's path to West Point was blocked when he could not get a nomination to the academy. Vice President Theodore Roosevelt wrote to Sidney Willson explaining that his own appointments were already taken.

the time, "Young Willson is conspicuous for having made the highest scholarship record ever made by any cadet pupil in the High Schools of Washington."

Mentored by Sidney, when Russell graduated in 1901 from Washington Central High school he sought to enter the U.S. Military Academy at West Point, New York. Unfortunately, he ran into an insurmountable roadblock—all nominations from all sources were already awarded. Instead, Russell spent a year studying engineering at the Massachusetts Institute of Technology. The next year, he tried to enroll at the U.S. Naval Academy but found this path to a commission blocked as well. Other applicants had locked in all congressional nominations from states in the eastern part of the United States.

Denied but undaunted, young Russell sought a Naval Academy nomination from Wyoming. He had spent a previous summer working there at his cousin's ranch, and fewer students in the less-populated Rocky Mountain state sought admission to the Naval Academy.

On the train to Cheyenne to take the examination for the Naval Academy, Russell wisely wore Western boots, jeans, and hat rather than a suit and tie. At the stop before his final destination, a small group of young men in similar garb boarded. They

had somehow learned of a competitor from out of state and stormed through the cars searching for the "Eastern Dude" who was rumored to want "their" nomination. When challenged, Russell denied having seen an interloper, but quickly and wisely joined the group searching in vain for the "dude."

The next day, his competitors were surprised to see him in the examination room. Willson excelled on the test and received a nomination from Wyoming Senator Francis E. Warren.

So, in the fall of 1902 Russell embarked on his career at a dynamic time for the Navy.

Roosevelt's Navy: Modern Ships, Wireless Technology

Theodore Roosevelt had become President in September 1901 upon the assassination of William McKinley. At age 42, Roosevelt led the United States into playing an active role in international relations. His aggressive national security strategy required possessing a modern, powerful, and professional Navy.

Roosevelt announced that he would "speak softly and carry a big stick" in dealing with other nations. A one-time assistant secretary of the Navy, he created a Navy "big stick" by rapidly broadening and accelerating its shipbuilding program, adding 1,000 more officers, and doubling the number of enlisted men. All of this required higher pay and bigger operating budgets.

Before he completed his second term, Roosevelt had moved the Navy from being the sixth largest in the world to second, behind Great Britain's Royal Navy.

At the end of 1907, the United States had 16 new battleships with numerous escort ships manned by 14,000 sailors. They comprised the "Great White Fleet" of the U.S. Navy that steamed around the world from December 1907 to February 1909, one month before Roosevelt left office. He demonstrated American naval might and led the way to improved ship design, with faster speeds, greater firepower, and a longer range of operations.

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Roosevelt's use of updated shipbuilding technology had its counterpart in rapid advances for communications electronics. Radio became essential to world powers that needed wireless communications to direct their fleets deployed farther from home ports.

These "signals in the ether," however, were exposed to interception by the receivers of opposing nations. Germany used radio intelligence to defeat Russia at the land Battle of Tannenberg in the first months of World War I and would use it later against signals emitted by other Allies, including those of the U.S. Navy.

Roosevelt Selects the Navy to Lead in Developing Radio

In 1906 Roosevelt gave the Navy major responsibility for the government's use of radio. Nine years later, Congress created the Office of the Chief of Naval Operations (CNO) and transferred the new Radio Service to that office. When Naval Communications replaced the Radio Service in 1916, its director placed it in a state of war readiness.

Concerned about the war in Europe, President Woodrow Wilson signed legislation in 1916 that

Above: Willson sat for the Naval Academy examination in Wyoming, where he would have less competition than in an eastern state. He excelled on the test, and Senator Warren offered him a nomination. Below: President Theodore Roosvelt sent the "Great White Fleet" around the globe in a show of American naval might. Ensign Willson sailed with the fleet between San Francisco and the Philippines.



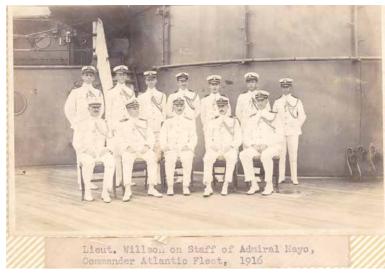


authorized construction of 156 new ships over three years. Kaiser Wilhelm's military advisers convinced him that his navy could defeat Allied fleets and starve Great Britain into submission by the fall of 1917—before the U.S. Navy completed its shipbuilding program.

This confrontational German strategy risked certain war with the United States by renouncing the Sussex Pledge of May 1916 not to sink merchant and passenger ships indiscriminately. Nevertheless, on February 1, 1917, Germany resumed unrestricted U-boat warfare in the Atlantic.

Thus, even as the U.S. Navy embarked on expanding and modernizing its ships and radio facilities, the German High Command lost its gamble that Allied shipping would remain vulnerable to its submarine fleet for six months.

Germany also lost its gamble of attacking American codes and ciphers to obtain vital information. Thanks to improvements in U.S. Navy communications security, Germany was unable to use radio intelligence to learn American plans.



Left: Lieutenant Willson on board the new battleship USS New York off Veracruz, Mexico, during the crisis in late April 1914. Above: Lieutenant Willson served on the staff of Adm. Henry T. Mayo, Fleet Commander-in-Chief, U.S. Atlantic Fleet, on board the flagship in 1916. Willson is second from left in the back row.

Willson Creates a Secure Communications System

Just as the convoy program ultimately protected Allied shipping against submarine attacks, Navy leaders placed confidence in a new message encryption system invented by Willson to protect the contents of its messages.

His Navy Cipher Box device—the NCB—became a vital part of U.S. strategy to secure communications controlling deployment of American ships to Europe with troops and supplies for the Allied cause.

President Wilson directed the Navy Department to take over all coastal commercial stations needed for its communications and to close all others. The Navy also took over almost all commercial radio stations in the United States. Thus, after the United States declared war in April 1917, the Navy controlled radio stations ashore and on board all ships at sea, including communications with merchant ships.

By the time the armistice ended the war in November 1918, Willson had established a solid reputation with his seniors and among his peers by distributing his secret NCB throughout the Navy and by creating a message system that ensured the Germans could not exploit vulnerabilities in U.S. communications.



Above: The State-War-Navy Building (now the Eisenhower Executive Office Building) in 1917. Right: In 1918, two Willson brothers served in the military. The older brother, Capt. Prentiss Willson (left), served in the Army Medical Corps, while Commander Russell Willson worked on Navy codes.

Significantly, during Willson's first decade after graduating from the Naval Academy, he gained broad exposure to combat ships and their maneuvers, as well as to the operational need for rapid, reliable, and secure communications among ships and with commands ashore.

Willson's Star Rises as Navy Reaches World Power Status

Within weeks of entering the Naval Academy, Russell was called home to attend his father's funeral. In October 1902 Russell found himself enrolled with the Class of 1906 in Annapolis, Maryland, but without the guidance of Sidney for the first time in his life. Ironically, this timing swept him into a Navy opening up opportunities that were made possible by the same Theodore Roosevelt who had been unable to offer him a nomination to West Point. He responded to the challenge.

The urgent need for junior officers for Roosevelt's growing fleet forced the Naval Academy to graduate classes in February from 1903 through 1906. Immediately after graduation, Willson reported to his first ship, the *Pennsylvania*, and served on board for the required 24 months at sea before earning his commission as an ensign.



Captain Prentiss Willson, U.S.A.M.C. Commander Russell Willson, U.S.N.

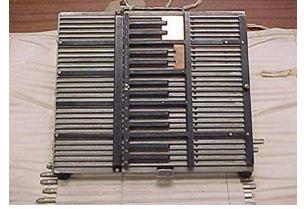
His sea service continued without shore duty for another 44 successive months, giving him experience on a new cruiser and two battleships, including one of Roosevelt's newest ships placed in service the previous year. These valuable assignments enabled him to steam with the First Division of the Great White Fleet on its third leg from San Francisco to the Philippines in 1908.

Ensign Willson then spent time aboard a refrigerated supply ship for the Great White Fleet and assisted in establishing wireless communications among U.S. Navy ships off the Chinese coast. This led to duty as aide to commanders in the Atlantic fleet operating in European waters and exposed him to their need for reliable and fast secure communications.

His final division commander was second in command of the Atlantic Fleet who had recently been an aide to the Secretary of the Navy. Thus, Russell gained his sea legs and a solid grounding in naval codes and signals before he detached for shore duty in the fall of 1911, where he viewed naval communications from the broader perspective of the Navy Department headquarters in Washington.

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Above: Willson's Navy Cipher Box, with the rack closed, rests on the canvas case containing additional alphabetic strips. Right: The act authorizing "relief" in the form of \$15,000 for Capt. Russell Willson was approved and signed by FDR.

These successive assignments as an aide exposed Russell, newly promoted to lieutenant junior grade, to the thinking of senior officers as well as to developing new technology in a growing Navy. They also helped him qualify in December 1911 for promotion to lieutenant—two promotions in a matter of months. In June 1911 Russell had married Eunice Westcott. In May 1912 Eunice gave birth to a daughter, also named Eunice. Lieutenant Willson's career and personal life had passed important milestones.

The next assignment in April 1914 took him to the battleship USS *New York*, then preparing for commissioning. Within days the ship arrived off Veracruz, where the U.S. fleet blockaded that Mexican port. The *New York* served as flagship for the commander of the landing force, solidifying Willson's understanding of Navy communications and the varied information needs for conducting naval operations.

After two years on the New York, Lieutenant Willson reported in April 1916 as flag lieutenant and aide on the staff of Vice Adm. Henry T. Mayo, second in command of the U.S. Atlantic Fleet. Two months later, when Mayo stepped up to the position of Fleet Commander-in-Chief and was promoted to admiral, he took Willson with him as an aide on his personal staff and flag lieutenant on board the super-dreadnought (after World War I typically just battleship) USS *Pennsylvania*. As before, his aide duties required handling communications for the commander, thus giving him an invaluable fleet-wide communications perspective.



Cumulatively, these tours prepared Willson to devise and test his innovative and more secure NCB cryptographic device for the Navy.

In December 1916, Willson left sea duty for OP-58, part of the Division of Operations in the Office of the CNO. His new responsibility as Officer in Charge, Code and Signal Section, left no question as to his duties: update Navy signals and secure Navy communications.

Willson understood that fleet radio signals to and from ships were clearly vulnerable to interception, that current encryption of messages was slow and cumbersome, and that the process was likely to cause errors compromising security. It remained for him to prove the merits of his new cryptographic device and demonstrate its promise for overcoming these deficiencies.

Code-Making: Lieutenant Willson Has a Better Idea

OP-58 squeezed into the Old State-War-Navy Building next to the White House. Later in 1917, the Code and Signal Section was redesignated a branch of the Naval Communications System. Willson's title then became "Assistant to the Director of Naval Communications for Codes and Signals."

A month after Willson and his wife welcomed their second daughter, Mary, in May 1917, he earned promotion to lieutenant commander. This higher rank was helpful to him in integrating elements of Navy Department Intelligence and Operations with Communications in the Code and

Signal Branch during the war. He learned from our British allies, taking advantage of their leadership in naval signals and radio communications and their experience dealing with codes and ciphers.

Willson's Navy Cipher Box encrypted five-letter groups selected from Navy Code A-1, a new two-part code book, which provided greater security than its outdated predecessors. Willson's NCB allowed cryptographers systematically to enter letters of code groups in one column and then read their cipher replacements down another column.

When the NCB Mark II (second model) was perfected, the Navy produced 1,000 units in 1918 and distributed them to stations ashore and to ships, along with the vital associated alphabet strips, appropriate keys telling users which strips to use, and new, more secure A-1 code book. Ships and shore stations were grouped into eight classes for distributing different strips and keys governing their selection, thereby gaining added cryptographic security.

Thus not only did Willson create the first mechanical cryptographic device adopted for operational use by the U.S. Navy, but his expanded system for sending different keys to various levels of command and classes of ships also markedly upgraded its overall communications security.

Willson managed the expansive wartime program that updated fleet signals as well as antiquated Navy codes and ciphers.

For his contributions, he received the Navy Cross, ranked second only to the Medal of Honor. The citation applauded his "exceptionally meritorious service" as a lieutenant commander fulfilling a "duty of great responsibility" during the war. It stated that he earned this medal for "the preparation, handling, and distribution of war codes and for devising a new and very efficient system of such communications."

With the fighting in Europe still raging during September of 1918, the Navy pinned the silver oak leaf of a commander on his collar, adding monetary gain to his Navy Cross. These were welcome recognitions of his accomplishments and prospects for the future, of course, but Russell Willson chafed to return to sea duty.



The Willson family lived in Rio de Janeiro, Brazil, from March 1927 through the fall of 1930 while Willson served as a member of the U.S. Naval Mission.

Willson Finally Completes His Communications Duties

Commander Willson sailed from New York in October and, on the day the armistice was signed—November 11, 1918—reported to Vice Adm. William S. Simms, commander of U.S. Naval Forces in London.

After meeting briefly with the U.S. Sixth Battle Squadron attached to the British Grand Fleet for discussions "in connection with signal book work," his orders were modified, diverting him to Paris for "duty in connection with codes and cyphers." This modification may have related to the arrival of President Woodrow Wilson in Paris in December for meetings preliminary to the Peace Conference.

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Ambassador Joseph P. Kennedy (right, in top hat) and his party depart to present his credentials to George VI. Captain Willson is the third person to the left of Kennedy.

And then he sailed back home in early December on USS *Leviathan*, a Navy troop ship that carried more than 119,000 members of the American Expeditionary Forces to Europe during the war. Fittingly, those AEF troops made safe transit thanks in part to communications secured by the NCB.

Once home, Willson again reported to USS *Pennsylvania* concerning the new signal books. He offered heartfelt advice to his detailer in the Navy Department never to "get mixed up in writing a signal book—it is a hell of a job!" The detailer placed Willson in line for his first command at sea, and he was finally relieved of all his rewarding but wearying code and signal duties.

The year 1919 brought Commander Willson the additional twin pleasures of assuming command of a new destroyer, USS *Southard*, and the birth of his son, Russell Jr. Over the next two years he commanded two other destroyers and a destroyer division in the Atlantic Fleet.

In September 1921 Willson returned to the Office of the CNO. His following tour at the Naval War College for the senior officer course allowed him to take Eunice and their young son and two daughters with him to Newport, Rhode Island.

But his following command of the destroyer USS *Lawrence* was cut short because Eunice had become

seriously ill and was not expected to live through the ship's six-month winter cruise. The Navy authorized Willson to exchange billets with the executive officer of the battleship USS *Florida*, which was undergoing modernization in the Boston Navy Yard.

During months of Eunice's medical uncertainty, the Navy again took advantage of Willson's mastery of naval communications and, in June 1925, sent him on temporary duty to assist the Navy Department with final preparation of the General Signal Book.

The next month, with Eunice's health stabilized, in July 1925 he was sent to the West Coast in the enviable billet as executive officer of the battleship USS *Pennsylvania*. Willson had gained valuable experience on the super-dreadnaught just prior to the war, and this ship would figure again in his prospects for a future that remained promising.

Then Willson's career abruptly changed course as the Navy detached him in January 1927 to become a senior representative of the U.S. Naval Mission to Brazil. After operations officer duty with the Brazilian Squadron for three and a half years, Willson was able to translate and conduct technical and social conversations in Portuguese.

Near the end of his tour in Rio, Willson was promoted to captain—a welcome promotion after more than a decade as a commander.





Left: Rear Adm. Willson and his son, Russell Jr. at the Naval Academy main gate one day before commissioning in February 1941. Right: Rear Adm. Russell Willson (right) reported to Adm. Ernest J. King at the end of December 1941. The demanding King simultaneously filled billets as the Commander in Chief, U.S. Fleet, and Chief of Naval Operations, an unprecedented combination of those posts.

The Navy honored his next request for duty and sent him to sea in January 1931 in command of a Pacific destroyer division. Eighteen months later in July 1932, Willson returned to shore duty at the Naval Academy as head of the Department of Seamanship and Navigation. His experience in command and in-depth knowledge of shipboard duties led the U.S. Naval Institute to ask him to revise the Watch Officer's Guide, which he kept updated over the next decade. As duty in Annapolis rolled to a close, the NCB came up again in a financially rewarding way.

Congress Recognizes Captain Willson and His Navy Cipher Box

A closed congressional hearing in early 1935 disclosed telling facts about the NCB and its part in helping Allies win World War I. The secretary of the Navy personally asked Congress to approve monetary compensation for Willson in lieu of a patent for his device. Adm. Joseph K. Taussig testified for the secretary that the NCB had been widely employed

in the war and was still in use in 1935. It had, he added, protected the Navy's most secret communications, specifically those with Vice Adm. William S. Sims, commander of U.S. European Naval Forces.

In fact, testimony revealed that the Naval Communications System provided secure radio communications for virtually all departments of the U.S. Government. This included War Department messages to France concerning movements of troops and cargo and those from the State Department, as well as some by "Colonel" Edward M. House (President Wilson's personal representative) and the President himself.

Taussig quoted a "[German] diplomatic agent in Copenhagen [who] reported that copies of all cables" exchanged between the U.S. and Europe were being read by Germany, "except for those [encrypted] in the Navy cipher"—Willson's NCB.

Then Taussig told the committee that, as the war ended, the State Department wanted to take possession of the NCB to protect its vulnerable transatlantic cable communications. Secretary of the Navy

To learn more about

- Another Navy intelligence officer in World War II, go to www.archives.gov/publications/prologue/2008/summer/.
- Breaking the Enigma encryption in World War II, go to www.archives.gov/publications/prologue/1997/fall/.
- Researching service records of military personnel, go to www.archives.gov/publications/prologue/2002/fall/.

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THE SECRETARY OF STATE WASHINGTON

October 7, 1944

My dear Admiral Willson:

At the close of the successful and historic Conversations in Washington, at Dumbarton Oaks, in which you have so helpfully participated as a representative for the United States, I want to take this opportunity to thank you most cordially for your wise counsel and the valuable assistance you have given.

I feel that the results which you helped to achieve have exceeded what we would have been bold indeed to hope for several weeks ago. You have rendered to your country, and to the vital cause of international peace and security, a signal service for which both the President and I are deeply appreciative.

Sincerely,

Vice Admiral Russell Willson, U.S.N., Joint Strategic Survey Committee, Public Health Building, 1901 Constitution Avenue.

Secretary of State Cordell Hull expressed his appreciation to Vice Admiral Willson for his assistance during the successful Dumbarton Oaks meetings.

Josephus Daniels and Chief of Naval Operations Adm. William S. Benson appealed to President Woodrow Wilson. In the face of these strong objections, Wilson directed instead that the Navy assume full responsibility for securing and handling every dispatch to and from the Paris Peace Conference, even those for the President himself.

"President Wilson had his own special cipher and used to operate this machine himself" in Paris, Admiral Taussig told the committee. Thus, the NCB and Naval Communications System also served the nation and the President during the 1919 Peace Conference.

The committee questioned Admiral Taussig because the cash award for a cryptographic invention was unprecedented. Taussig requested that the secure proceedings not be made public, burying this matter for decades. Finally, Committee Chairman Carl Vinson asked Willson whether he wished to make a statement concerning the bill that would award him \$15,000.

His terse and priceless reply: "I am in favor of it." The mid-1930s were good years for Captain Willson and his family. In April 1935 the Navy again detailed him to the battleship USS *Pennsylvania*, now in command of this flagship of the commander-in-chief, U.S. Pacific Fleet. In July, Congress and the President paid him \$15,000 for the Navy Cipher Box. Their older daughter, Eunice, began working for the Office of Naval Intelligence in 1934, and their son would soon be headed to the Naval Academy in 1937.

Attaché Duty, Flag Officer Command, and Academy Superintendent

Over the next six years, Willson's personal life and career appeared to hold even greater promise. He left the Pennsylvania in the fall of 1936, headed for the coveted post of naval attache and naval attaché for air to the Court of St. James in London.

When he departed England in January 1939, he was ordered back to the Pacific Ocean, where, in May, he was promoted to rear admiral and relieved Rear Adm. Chester W. Nimitz as commander of Battleship Division One at Pearl Harbor, Hawaii. When he left 20 months later, everyone in the Navy was aware of the looming Japanese threat in the Pacific.

It was time for a joyful homecoming: Willson reported as superintendent of the Naval Academy in early 1941. He arrived in time to preside over the graduation with distinction and commissioning of his only son, Russell Jr., in the abbreviated class of 1941—35 years after his own February 1906 graduation. He had returned "home" to warm greetings from the academy and Annapolis communities. But this and his next tour soon proved to be bittersweet.

Policy-Making at the Highest Levels

On Christmas night, several weeks after the Japanese attack on Pearl Harbor, the telephone in the Naval Academy superintendent's residence rang. Adm. Ernest J. King was calling, and Willson's heart sank because he knew that his chances of command at sea during the war had been reduced to zero.

His tour as superintendent abruptly ended, 11 months after it began. King had selected Willson as his chief of staff. Several months later, King elevated him to deputy commander in chief of the United States Fleet and promoted him to vice admiral.

Tragically, overwhelming pressures from working tirelessly for months in these critical roles for King caused Willson's health to fail. He was forced to retire for medical reasons in December 1942. Nonetheless, King ensured that Willson received credit for his contributions, which had resulted in the "successful prosecution of the war." His "exceptionally meritorious service" earned him the Navy Distinguished Service Medal, the next highest decoration after the Navy Cross.

Wisely, the Navy immediately called him back to active service as a member of the Joint Strategic Survey Committee of the Joint Chiefs of Staff. He represented the JCS in working with the State Department to develop policies for postwar issues of national sovereignty and international security arrangements. He played a key role in a meeting of the Great Powers at the Dumbarton Oaks Conference in Washington, D.C., during August and September of 1944.

Undersecretary of State Edward R. Stettinius, head of the U.S. delegation, tapped Willson to chair the critical Special Informal Military Group of British, Soviet Russian, and United States uniformed military advisers who helped formulate provisions for maintaining international peace and security in the United Nations Charter.

Willson deftly handled difficult comprehensive negotiations on all questions of a military nature. His skill earned him thanks from Secretary of State Cordell Hull and President Franklin D. Roosevelt.

These and other contributions by Vice Admiral Willson prompted the State Department to retain him as a military advisor during the 1945 United Nations Conference on International Organization in San Francisco. In February of 1946 President Harry S. Truman authorized awarding Willson the Army Distinguished Service Medal for his "exceptionally meritorious and distinguished services in the performance of duties of great responsibility from December 1942 to December 1945."

Finally, in May 1946, Willson fully retired from all active service—exactly 40 years and three months after graduating from Annapolis.

One month later, in a gratifying final measure of recognition, King George VI appointed Willson an Honorary Knight Commander of the Military Division of the Order of the British Empire for his "distinguished service to the Allied cause."

Notes

Archivists Rodney Ross and Jane Fitzgerald at the National Archives and Matthew Brawn at the Law Library of the Library of Congress provided critical copies of Private Law 79 for the relief of Russell Willson and the "Red Line" bill signed personally by the Speaker of the House of Representatives, the Vice President of the United States as President of the Senate, and President Franklin D. Roosevelt.

Records of the Office of the Chief of Naval Operations (Record Group [RG] 38) and the Naval Records Collection of the Office of Naval Records and Library (RG 45) yielded useful technical information.

Willson's personnel records from the National Personnel Records Center in St. Louis, Missouri, were helpful.

Willson-Rice family albums and folders offered a wealth of materials. Countless hours of conversations and interviews and email exchanges over 12 years, as well as valuable guidance by daughter Eunice Willson Rice and granddaughter Rosamond Rice still continue to reveal new insights.

Jay R. Browne of the Naval Cryptologic Veterans Association provided critical support over the past decade.

Representative items listed here were useful in confirming events, places, names, and dates.

Robert Albion, *Makers of Naval Policy: 1798–1947*, ed. Rowena Reed (Annapolis, MD: Naval Institute Press, 1980).

Robert C. Hilderbrand, *Dumbarton Oaks: The Origins of the United Nations and the Search for Postwar Security* (Chapel Hill: University of North Carolina Press, 1990).

Linwood S. Howeth, *History of Communications Electronics in the United States Navy* (Washington, DC: U.S. Government Printing Office, 1963).

David Kahn, *The Codebreakers: The Story of Secret Writing* (New York: The MacMillan Company, 1967).

Naval History Division/Naval History and Heritage Command, *Dictionary of American Naval Fighting Ships*. Online and Navy Department for hardcover. Various.

AUTHOR



Raymond P. Schmidt earned a bachelors degree in history from the University of Nebraska and a masters in modern European diplomatic history from the University of Wisconsin. He served 14 years as the first civilian historian employed by the Naval Security Group and the first official historian of U.S. Naval cryptology

since World War II. He retired as a captain from the Navy Reserve after 40 years of combined active and inactive duty.

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