

U.S. Army Signal Corps, 150 Years Old and Still Breaking New Ground

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Congress created the U.S. Army Signal Corps on June 21, 1860, assigning Albert James Myer as the first and only Signal Officer. Myer was an Army doctor and the first to come up with the idea of a separate, trained, professional military signal service. Throughout its history, the Signal Corps had initial responsibility for a number of functions and new technologies that are now being managed by other organizations, including military intelligence, weather forecasting, and aviation.



The Wright Brothers test fly their aircraft on the parade field of Fort Myer, VA. This series of test flights resulted in the Army purchasing its first aircraft. (Photo courtesy of Fort Myer.)

In 1870, for example, the Signal Corps established a congressionally mandated national weather service, the Division of Telegraphs and Reports for the Benefit of Commerce.

The electric telegraph had become the responsibility of the Signal Corps in 1867. Within 12 years, the Corps had constructed, maintained, and was operating some 4,000 miles of telegraph lines along the country's western frontier. The weather bureau became part of the Department of Agriculture in 1891 while the Corps retained responsibility for military meteorology. For more than a century, the term "Signal Corps" referred to units involved in visual signaling, telephone and telegraph wires, and cable communications. Shortly after the Spanish-American War in 1898, the Signal Corps constructed the Washington-Alaska Military Cable and Telegraph System, developing the first wireless telegraph in the Western Hemisphere.

Contracting with the Wright Brothers

The Wright brothers' first flight, performed in a powered heavier-than-air machine near Kitty Hawk, NC, on Dec. 17, 1903, marked the dawn of a new age. But a trip of 59 seconds for a distance of 852 feet did not convince anyone, let alone the military, of the commercial viability of air travel.

By late 1907, the U.S. Army showed renewed interest in the Wright brothers, however. Rather than offering them a contract, the U.S. Signal Corps announced an advertisement for open bids to contract and fly an airplane. The design and performance specifications



SSG Dennis Hoffman of the 112th Signal Battalion (Special Operations, Airborne), Fort Bragg, NC, explains the function of the Special Operations Forces Deployable Node-Medium. (U.S. Army photo.)

were such that the Wright brothers were the only responsible bidder. A price of \$25,000 was established for the airplane if the brothers could meet the design specifications in actual flight trials.

On Aug. 1, 1907, an Aeronautical Division was established within the Corps. The first Army contract within the division was in December 1907 for the purchase of an aircraft. The contract was awarded by U.S. Army Signal Corps CPT Charles S. Wallace, on behalf of the United States of America, to Wilbur and Orville Wright, trading as Wright Brothers of 1127 West Third Street, Dayton, OH.

The Corps and the Wright Brothers entered into an agreement for the purchase of one heavier-than-air flying machine, in accordance with Signal Corps Specification No. 486, dated Dec. 23, 1907. The contract called for a machine that could fly at a speed of 40 miles per hour (mph) and could carry two people a distance of 125 miles. It had to be steered in all directions without difficulty, stay aloft for a 1-hour endurance demonstration,

and land undamaged at the takeoff point. The machine had to be disassembled easily and transportable. The agreement was two pages long and included 12 articles.

The Wright Brothers' trials began in late summer 1908 at Fort Myer. Orville Wright did the flying accompanied by an Army observer, 1LT Thomas Selfridge. Unfortunately, the plane crashed, causing fatal injuries for Selfridge and injuring Wright. The Wrights returned to Fort Myer in 1909 to complete the Army trials. Over several weeks, the brothers fulfilled each requirement in Signal Corps specifications, the final one being a flight of 10 miles with a passenger. This flight also served as the official speed trial. The contract stipulated that the Wrights would receive a 10-percent bonus for every full mph above 40.

Their average speed was 42.5 mph, which brought them a \$5,000 bonus. That made the final purchase price of the airplane \$30,000.

The Wrights presented the Army with an entirely new airplane in 1909. The Army purchased it that year, used it to train pilots in 1909–1910, then donated it to the Smithsonian Institution in 1911 after acquiring other aircraft. Designated as Signal Corps No. 1 by the Army, it was generally referred to as the Wright Military Flyer, the world's first military airplane.

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Harnessing Technology for War and Peace

The Signal Corps transferred the Aeronautical Division to the Army Air Service in 1918 but lost no time in meeting the technology challenges of World War I. Chief Signal Officer MG George Squier worked closely with private industry to develop radio tubes, creating a major signal laboratory at Camp Alfred Vail (later renamed Fort Monmouth), NJ. Early radio telephones were introduced to Europe during the war.

COL William Blair, a director of the Signal Corps laboratories at Fort Monmouth, patented the first Army radar (radio detection and ranging) device in May 1937. Mass production of two radar sets had begun before World War II. This radar became one of the most important communications developments of World War II, along with the production of tactical radios.

As of March 1942, the Signal Corps was one of the first organized components to supply both the Army Ground Forces and the Air Forces. It was responsible for establishing and maintaining communications service schools for officers and enlisted personnel at Fort Monmouth. The Signal Corps developed radar, a term used to designate radio sets and similar equipment. However, the SCR-268 and 270 were not radios at all, but for top-secret reasons were designated as such. Radar emerged historically from the defensive need to counter the possibility of massive aerial attacks. Radar technology continued to be developed and upgraded at the Fort Monmouth laboratories during World War II; development continued into the Cold War.

In 1946, the Signal Corps bounced radar signals off the moon, paving the way for space communications. The Corps also grew the first large quartz crystals used to manufacture electronic components, leading to the development

of the circuit card. In December 1958, with Air Force assistance, the Signal Corps launched its first communications satellite in space, demonstrating the feasibility of worldwide communications. This led to the development of the first military Very High Frequency radio, which was used extensively during the Korean conflict.

The Vietnam War required high-quality telephone and message circuits, leading to the development of troposcatter radio links that could support locations more than 200 miles apart in a tropic environment. The Signal Corps also developed a satellite communications service known as Synchronous Communication Satellite and a commercial fixed-station system known as Integrated Wideband Communications System, creating the Southeast Asia link in the Defense Communications System.

The escalation of the Vietnam conflict and the number of troops involved created an increasing need for an expanded communications infrastructure. In spring 1966, the assorted Signal Corps units were reassigned to the newly formed 1st Signal Brigade. By the close of 1968, this brigade consisted of six Signal Corps groups and 22 signal battalions.

Advancements Continue

Since the 1980s, development of communication technology has continued, upgrading older-technology radios and communications equipment with radios that send signals across many frequencies, “hopping” from one to another at lightning speed. Later generations of these radios were combined with encryption devices for improved security. By the advent of *Operation Desert Storm*, all Army units were deployed using the most secure communications equipment in the world.

On June 21, 2010, MG Randolph P. Strong, Commanding General, U.S. Army Communications-Electronics



Radio Operator CPL John Robbins, 41st Signal, 41st Infantry Division, operates his SCR-188 radio in a sandbagged hut at Station NYU, Dobodura, New Guinea, during World War II. (U.S. Army Signal Corps photo by T/4 Harold Newman.)

Command (CECOM) and Fort Monmouth, and a former Army Signal Corps Chief, said that with the closure of Fort Monmouth on the horizon, the day was one of both celebration and commemoration. “Fifty years ago, our predecessors buried this time capsule in honor of the 100th birthday of the U.S. Army Signal Corps,” Strong said. To commemorate the 150th anniversary of the Corps, Strong and others ceremoniously unearthed the capsule to prepare it for its move to the Army Signal Center and School at Fort Gordon, GA.

Command Historian Melissa Ziobro also commented, “I think it is really going to highlight just how far communication electronics technology has come; but I think it is also going to reinforce how little the Signal Corps mission will have changed.” The U.S. Army Signal Corps Museum has received the time capsule and is planning an interment ceremony. The capsule will be reburied at Fort Gordon until June 21, 2060, when it will be opened to commemorate the Corps’ 200th anniversary.

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