

Officers Mess, Willets Point, New York

Beginning at Willets Point

Since the Army's first Engineer School was founded at Willets Point, New York, in 1867, the Army has trained engineer officers in practical engineering subjects. Many changes in curriculum and several changes in location have occurred during the school's 130-year history. This article describes the school from its founding through the move to Washington Barracks (now Fort McNair) in 1901. In some ways today's Engineer School mimics that earlier one: The curriculum is continually modernized to keep it relevant to Army doctrine, and the school recently changed location to improve training opportunities.

After the Civil War, the Battalion of Engineers was ordered to Willets Point to construct a new post and establish a depot for engineer equipment left in Virginia. In 1866 Brigadier General Andrew A. Humphreys, Chief of Engineers, determined that the battalion needed a large detail of officers to command and instruct engineer companies. He believed that all engineer officers should be exposed to troop command, and that young officers should extend their West Point training with theoretical and practical engineer subjects.

Humphreys envisioned a practical school of application, as opposed to strictly classroom work. He instructed Colonel Henry L. Abbot, the battalion commander, to establish a training program for new officers, non-commissioned officers, and the battalion's enlisted men.

Instruction began in the summer of 1867, with students working on sextants and the construction of model "fronts" of forts, at a scale of 1 to 12. During the first 18 years growth was piecemeal. Training in meteorological observations, reconnaissance, and surveys were added in 1868. Meteorological observations included hourly listings of barometric pressure, temperature, and humidity. Students performed reconnaissances and surveys to develop information for military maps. Later, each officer carefully surveyed and prepared contours for one square mile of territory using ordinary surveying equipment.

A field astronomical laboratory added in 1869 enabled officers to use an astronomical transit, zenith telescope, a telescope for occultations, sextants, and chronometers. Weather permitting, officers in the battalion devoted the hours of sunset to midnight to regular observations. Results of these observation were published annually in Battalion Orders.

A modern observatory replaced the old one in 1879. Using updated equipment, students learned how to determine latitude and longitude, and registered unusual astronomical events such as sun spots. As a result of the school's latitude records, scientists discovered a new oscillating motion of the earth on its axis.

Study also included hypothetical enemy invasions. In the summer of 1872, all commissioned officers prepared a detailed line of field works that stretched from Willets Point to Jamaica Bay. The field works were to protect Brooklyn against a hypothetical invasion of 100,000 men along the east end of Long Island. Forces available for defense consisted of 30,000 militia infantry, three companies of engineers, a full regiment of artillery, plus field artillery.

Practical instruction in submarine mining began in 1872, when responsibility for seacoast defense was assigned to the Corps of Engineers. By 1874, the Corps had acquired 600 miles of torpedo cable and 300 mines. To accommodate this training, the school added a Torpedo Laboratory for officers and a building for the instruction of enlisted men. Students worked with torpedoes that were steered by electricity from shore—electrical transmission of power was new technology at that time.

The name "School of Application" was officially applied in 1875. The school continued to expand, and in 1884 Secretary of War Robert Todd Lincoln increased the enlisted men in the battalion to 400. The next year the school reorganized into five

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departments: Military Engineering, Submarine Mining, Civil Engineering, Practical Astronomy, and Military Photography. The academic staff included the battalion's field officers, senior staff officers, and company captains. As part of their training, officer students were assigned to instruct enlisted students in military and engineering subjects.

During this period, officer students arrived at the battalion from West Point in the October following graduation. The first two months were spent becoming familiar with routine military duties. Then they began a program lasting two and one-half years, with the school year divided into winter and summer courses.

Starting in 1880, the school conducted a 6-month course in submarine mining for engineers plus two artillery officers. Ten years later, infantry and cavalry officers, in addition to artillery officers, began attending a new 9-month submarine mining course for non-engineer officers.

When the War Department reorganized the school again in 1898, they officially designated it the United States Engineer School. Its objective was to increase the professional qualifications of officers assigned to the Corps of Engineers. Under this reorganization, the program was shortened to two years and the departments of instruction were reduced to three: Military Engineering, Electrical Engineering, and Civil Engineering.

The program of instruction for Military Engineering included reconnaissances of routes and positions; maps, plans, and military photography; explosives; military bridges; campaigns; and land and coast defenses. Electrical engineering included the application of electricity to seacoast and land defenses, power transmission, and torpedo instruction. Civil engineering included surveying and practical astronomy, preliminary examinations of navigable waterways, river and harbor improvements, detailed studies of building materials and methods of construction, and river and harbor works. Lectures by Army and Navy officers and civilians, and visits to military and manufacturing establishments supplemented the course work.

The school suspended operations from April to November 1898 due to our war with Spain. This was the only time the school closed except for the period 1917-1919, in World War I.

When the school moved to Washington Barracks (now Fort McNair) in 1901, the name changed again—this time to the Engineer School of Application, United States Army. Instruction methods used in the two-year program included lectures; readings, with the students taking notes that were graded; and student theses and projects. Instructors examined the students at the end of each course and rated them "proficient with honor," "proficient," or "deficient."

One part of the school did not move to Washington Barracks. By an act of Congress, the care and operation of torpedo defense reverted to the artillery, and all torpedo materiel transferred to them in 1902.

Throughout its history, the United States Engineer School has expanded and reorganized to maintain a highly trained force of Army engineers. The Engineer School of the 1870s and 80s proved to be a stepping stone for the establishment of a modern school for training engineers through the 1890s and into the 20th century. Today, at the threshold of the 21st century, we continue to build on this tradition.

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Torpedo Laboratory, Willets Point, New York.