

The Weather Helped Win the Revolutionary War for America

On an October day in 1781, General George Washington, commanding a force of 17,000 French and Continental troops, started the Battle of Yorktown against British General Charles Cornwallis with a contingent of 9,000 British troops at Yorktown, Virginia, in the most important battle of the Revolutionary War. It was a stroke of luck for the Patriots that the French fleet commanded by Francois, Count de Grasse, departed what is now Haiti for the Chesapeake Bay, just as Cornwallis chose Yorktown, at the mouth of the Chesapeake, as his base.

Washington ordered Marquis de Lafayette and an American army of 5,000 troops to block Cornwallis' escape from Yorktown by land while the French naval fleet blocked the British escape by sea. By September 28, Washington had encircled Cornwallis with the combined forces of Continental and French troops.

Cornwallis was surrounded for about three weeks before he tried to escape but the weather prevented Cornwallis' escape on the night of October 16th and 17th. A squall line and storm separated his men into three groups during the attempted escape. At this point he knew he was defeated and was forced to surrender on October 17th, 1781. (Read the following pps.62-64 from David M. Ludlum's book which tells the story. [The Weather Factor](#), Boston 1984.

Pleading illness, Cornwallis did not attend the formal surrender ceremony, held on October 19. Instead, his second in command, General Charles O'Hara, carried Cornwallis' sword to the American and French commanders. Although the war persisted on the high seas and in other theaters, the Patriot victory at Yorktown ended fighting in the American colonies. Peace negotiations began in 1782, and on September 3, 1783, the Treaty of Paris was signed, formally recognizing the United States as a free and independent nation after eight years of war.

Siege of Yorktown: Won by a Line Squall

Early autumn in tidewater Virginia can produce different weather regimes that either favor or hinder outdoor activities. At one extreme, when a trough of low atmospheric pressure persists along the Atlantic seaboard, cyclonic storms — either coastal northeasters or, more rarely, tropical disturbances — cause unsettled conditions with rain and gales continuing for two or three days at a time, and these types may repeat their performance several times over a period of two or three weeks. Outdoor activities are restricted. On the other hand, September and October often find high pressure prevailing for days at a time with settled weather featuring clear skies, light winds, and a hazy atmosphere. Now known as “Indian Summer,” these pleasant periods favor outdoor work and play.

The investment operations against General Cornwallis and his troops at Yorktown peninsula, continuing over the 22-day period from September 28 to October 19, 1780, enjoyed the more favorable of Virginia’s autumnal weather types. There were only two noteworthy breaks in the atmospheric serenity, and both turned out to be advantageous to the Franco-American cause.

No meteorological records employing scientific instruments were known to have been maintained in the Chesapeake region during the autumn of 1781. The British invasion earlier in the year had halted the observations of the Reverend James Madison at Williamsburg. He later wrote Thomas Jefferson: “The British robbed me of my Therm and Bar.” Furthermore, his prior records of daily thermometer and barometer readings were destroyed when his home was consumed by fire in the winter of 1781–82. Our source of weather information for the campaign comes from the many diaries and memoirs of the participants.

The investment of Yorktown followed the classical methods of siege warfare. The French were well schooled in these and

had the required tools and weapons. The operation entailed digging parallels or deep trenches so that the attackers could approach closer and closer to the defensive redoubts of the enemy under cover of their own protective earthworks. The digging of the first parallel, scheduled to commence on the evening of October 6, required a dark, moonless night so the men at work would not be targets for the British gunners located only about a half-mile away.

The desired conditions began to unfold during the day of the sixth, when a southeast rainstorm set in. General David Cobb noted the day as "rainy at times." The following night was described by Colonel J. B. Wright as "dark and rainy, perfect for the purpose in view." Timothy Pickering recalled: "It was fortunately cloudy, and it rained gently; otherwise the moon (just passed the full) might have proved very injurious, by discovering us to the enemy." And Surgeon James Thacher struck a familiar theme: "We were favored by Providence with a night of extreme darkness." The first entrenchments were started that night.

In the final stages of the siege, an unforeseen weather event played a most decisive role in thwarting a British attempt to break out of their encirclement. On the night of October 16–17, in a bold effort to save them, Cornwallis decided to ferry his regulars to Gloucester Point on the north shore of York River, where a small perimeter was being held by Lieutenant Colonel Banastre Tarleton. Here the opposing allied force was thought to be vulnerable to a determined attack. If successful in breaking out, Cornwallis hoped to work his way northward through tidewater Virginia and join British troops operating out of New York City.

Cornwallis estimated that sixteen flatboats, each making three round trips, would be able to transport the core of his best troops across the York River estuary. Each trip would require about two hours for the boats to cross, unload, and return. Accordingly, the selected regiments assembled on the evening of the sixteenth. The first trip began about an hour before midnight and accomplished the crossing without incident. The boats returned, again loaded, and put off. "But at this critical moment," Cornwallis recalled in his campaign report, "the weather from being moderate and calm, changed to a most violent storm of wind and

rain and drove all the boats, some of which had troops aboard, down the river." Other accounts mentioned thunder and lightning accompanying the storm. "It was," wrote Elias Dayton, "almost as severe a storm as I ever remember to have seen."

The direction of the wind must have been from the northwest, as the flatboats of the second crossing were blown downriver in a southeasterly direction. Some came ashore about a mile below Yorktown, but two were carried as far as 5 miles and captured by the French at the mouth of the York River.

Though meteorological details are lacking to make an exact judgment, the storm was probably the result of a line squall thunderstorm passing through the area. Line squalls often precede a cold front passage by several hours and can create even more turbulent conditions than the front itself. Tarleton recalled that the storm continued for about two hours, with the strong winds ceasing about 2:00 A.M. David Cobb mentioned cold conditions on the night of the eighteenth continuing through the twentieth, indicating a large polar air mass with colder-than-normal temperatures as the dynamic driving force behind the line squall and cold front.

The adverse turn of the weather completely disrupted the attempted breakout. With his best troops split in two groups by the river, Cornwallis found himself in an extremely vulnerable position and was forced to recall the men who had already crossed to Gloucester Point. "Thus expired the last hope of the British army," Colonel Tarleton commented.

Next day about midmorning a drummer boy appeared on the British parapet to roll out a call for a parley, and soon an officer carrying a white flag joined him. The American guns ceased firing and negotiations on terms of surrender commenced. The formal surrender took place on October 19; the weather must have been so normal that no one thought to mention it in his diary.

Upon receiving the news from America, Lord North, the King's chief minister, declared while pacing up and down his apartment at 10 Downing Street: "Oh God. It is all over. It is all over."