Harbinger of the Future: The Suez Canal (Part 1)

This month's History Lesson is the first of two parts, the second to be published in the October issue. In this part, we examine the construction of the Suez Canal and the events leading to its control by the British. In the October issue, we will examine Egypt's recovery of control and efforts to modernize the canal.

"AS AN INTERCONTINENTAL crossroad Suez is so important that the great World Powers must, of necessity, either establish a foothold in it or at least make sure of its availability to them," wrote André Siegfried in 1953 about the Suez Canal in Egypt ("The Suez: International Roadway," *Foreign Affairs*, Vol. 31, No. 4, July 1953). "If I knew who was to be its master 10 or 25 years from now, then I should know who had mastery of the whole world as well."

The canal, a human-made, sea-level waterway that traverses 100 mi to connect the Mediterranean and Red Seas through Egypt's Isthmus of Suez, is a true modern marvel. Opened in 1869, the canal was a "triumph of the mid-nineteenth century," according to writer Zachary Karabell, a spectacle that awed "jaded royalty" and united the global East and West (*Parting the Desert: The Creation of the Suez Canal*, New York City: Vintage Books, 2003).

At its peak, the construction of the canal employed tens of thousands of Egyptian peasants who had been forced into labor. It led to advancements in mechanization and became a crucial cog in the global economy, pouring raw materials into Europe and shipping mass amounts of finished goods back out.

Before the Suez Canal could be created, a freshwater canal, begun north of Cairo, had to be dug through the desert to supply drinking water for thousands of people who would build the main canal.

While Siegfried's conclusion that the owner of the canal would master the world may no longer be entirely accurate, the Suez Canal was one of the most important pieces of infrastructure in the 19th century. And its impact on the geopolitics of the world—as will be explored next month in the second part of this special two-part article—continued throughout the 20th century.

According to the Suez Canal's English-language website (bit.ly/SuezCanalEnglish), the idea of establishing a canal linking the Red and Mediterranean Seas dates to ancient times. Egypt dredged the world's first artificial canal at least as early as the Sixth Dynasty of the Old Kingdom (c. 2407–2260 BCE).

In modern times, the push to build a canal at Suez was first considered by Napoleon Bonaparte, who occupied Egypt between 1798 and 1801. But his engineers miscalculated the difference in sea levels between the Mediterranean and Red Seas. "Napoleon was told that the Red Sea was 30 feet higher than the Mediterranean," the website states.

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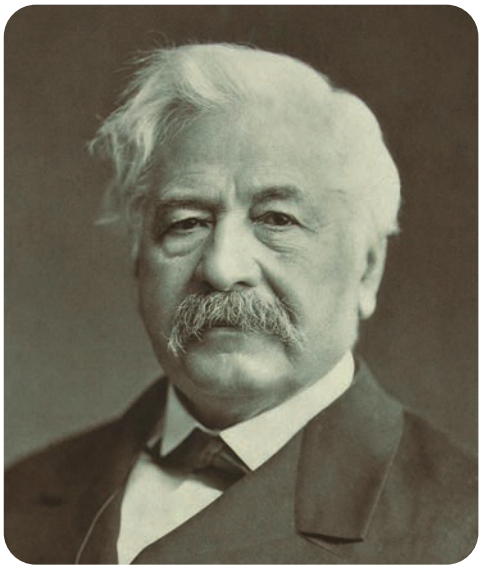
"Dig a canal, his surveyors said, and the Red Sea will hemorrhage into the Mediterranean."

However, Napoleon did assemble a complement of scholars and engineers to study the region, and the result was *Description de l'Égypte*, a massive series of written works, published between 1809 and 1829, that helped keep the idea of a major canal project in Egypt alive among the French.

In the 1830s, a group of French intellectuals, inspired by the ideas of the late Henri de Saint-Simon, became interested in the canal. The group, known as the Saint-Simoniens, was committed to the idea of science and industry leading the way to a new era of prosperity. For one member of the group, Barthélemy Prosper Enfantin, the canal would "consummate the marriage" between the "female" East, represented by the Red Sea, and the "male" West, represented by the Mediterranean, according to Karabell. The French visionaries who dreamed of the canal had a similarly romantic view of their goal, hoping to usher civilization into a grand era of progress and prosperity.



French diplomat Ferdinand de Lesseps was the chief visionary behind the creation of the Suez Canal—though fulfilling his dream took decades.

But nobody was more determined to build the canal than Ferdinand de Lesseps, whose father had served Napoleon as a diplomat and who was a diplomat himself. While stationed in Cairo during the 1830s, he had read *Description de l'Égypte* and began to dream of linking the two great seas. But it would take another 20 years before Lesseps had his chance.

The Saint-Simoniens continued to plan a canal in the intervening years. According to the Suez Canal's website, members created "an association in 1846 to study the possibility of the Suez Canal once again." The following year, the group confirmed that "there was no real difference in the levels between the Mediterranean and Red Seas."

Egyptian viceroy Mohamed Sa'id Pasha backed the Suez Canal as a means of modernizing Egypt and elevating its status in world affairs.

Egypt's rulers were not interested in such a canal until 1854, when 32-year-old Mohamed Sa'id Pasha took over as viceroy. (Egypt at the time was a semiautonomous state under the rule of the fading Ottoman Empire). Sa'id had a greater affinity for Europeans and a more progressive outlook than his father, who had ruled before him, and many hoped he would be the man to modernize his country. Additionally, Sa'id had known Lesseps since he was a child.

In 1854, the Frenchman traveled to Cairo and made his pitch to the young viceroy. According to Karabell, Lesseps promised Sa'id that the canal would strengthen the Ottoman Empire, elevate Egypt's status in world affairs, and prevent a European invasion because all nations would check the influence of the others to ensure the canal remained open to all. Perhaps more importantly, the canal would transform Sa'id from the governor of an Ottoman province into a potentate admired throughout the world. He would be "immortalized as a man who dared to do what others had said was impossible," Karabell wrote.

According to writer S. C. Burchell (*The Suez Canal*, New Word City, 2016), Sa'id and Lesseps signed a deal in 1854—the First Concession—decreeing that the canal would be open to all nations and that the profits would be apportioned between the initial investors (10 percent), the Egyptian government (15 percent), and a company that Lesseps created, called the Universal Company of the Maritime Canal of Suez (75 percent).

There was plenty of skepticism and opposition. The British, who enjoyed naval supremacy around the world, did not want a crucial asset to be controlled by their rivals, the French. The Ottoman sultan, who nominally needed to sign off on the deal, thought the canal could either be a boon to his fading empire or embolden Egypt to challenge him from within. Lesseps embarked on a goodwill tour of Great Britain that ultimately gained public support.

Lesseps's fellow Frenchman Enfantin tried to undermine the project, believing Lesseps had stolen his idea. The pair exchanged a series of bitter letters, in which Enfantin challenged Lesseps's technical acumen, according to Karabell. "We [Saint-Simoniens] are engineers," he chided. "Are you and Sa'id engineers?"

Lesseps was not, but he had brought in two experienced engineers to lead the efforts: Egypt's longtime chief engineer Louis Maurice Adolphe Linant de Bellefonds and hydraulic engineer Dieudonné Eugène Mougel; the latter, Karabell wrote, "had come to Egypt in the late 1830s to oversee construction of the Nile dams." (Bellefonds was replaced in January 1861 by François-Philippe Voisin.)

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Work finally began in April 1859, after the canal company pulled together 200 million francs, which today would be equivalent to more than U.S.$1.2 billion. The project was scheduled to last six years.

As Burchell described in his book, Lesseps's engineers routed the canal through five desert lakes: Manzala, Timsah, Ballah, Great Bitter, and Little Bitter. "De Lesseps's design was simple," Burchell wrote, "to link this chain of lakes by stretches of canal and fill them with seawater. The connected links were to be the Suez Canal." All the lakes were dry except for Manzala, which was "marshy and filled with water."

Burchell writes that before the canal itself could be dug, Lesseps had to bring in a supply of freshwater from the Nile for the workers building the canal and the communities that developed alongside it. This was accomplished by digging a canal north of Cairo, cutting it through the desert, from Port Said to Suez.

The 100 mi long Suez Canal—shown here on a stereograph card that would have been viewed through a stereoscope—linked East and West when it opened in 1869. The canal served as a key cog in international relations during the 20th century.

In addition to the canal, engineers had to devise a means for creating an artificial harbor at Port Said. Work began in 1864 on a pair of jetties—one 1.5 mi long and the other 2 mi long—to enclose the harbor. Four brothers from Marseille, France, the Dussauds, "developed a system for creating the immense blocks needed for the two long jetties into the sea," wrote Karabell. Between the two jetties would be "a triangular harbor area of 550 acres where ships entering and leaving the canal could safely anchor," he wrote. "Each of the blocks for the jetties weighed more than twenty tons [and] were produced on an assembly line on an island near the town."

The blocks, made out of a lime and sand cement mix, were "left to bake in the sun for two months; once hardened, they were lifted by hydraulic cranes onto trucks and rolled onto custom-built barges that were equipped with wooden runners that held the stone slabs at an angle. The barges transported the blocks out to sea, and then the stops on the runners were released to allow the slabs to slide into the water, one after another. In the end, the jetties contained thirty thousand blocks."

At the heart of the Suez Canal construction were the Egyptian farmers and peasants, known as fellahin, who worked as unpaid, forced labor in a system known as the corvée. Corvée labor for the project reached as many as 60,000. It was a long-accepted practice in Egypt, and conditions were difficult. Karabell noted that the company sometimes provided tents and blankets to workers for shelter, but "the fellahin were frequently left to sleep in the open near where they were digging"—a brutal situation in the heat of the Egyptian summer.

Sa'id died in 1863. His successor, his nephew Ismail Pasha, was less enthusiastic about the project. Months earlier, U.S. president Abraham Lincoln had issued the Emancipation Proclamation, freeing slaves in the Confederate states and effectively ending slavery in the nation. The news rippled around the world, including in Egypt, which had a cotton industry that had flourished during the American Civil War. Ismail (and the British), for reasons both altruistic and political, argued that the corvée practice needed to be eliminated, a development that threatened to kill the Suez Canal project.

Charles-Louis Napoléon Bonaparte (Napoleon III, the first president of France, from 1848 to 1852) resolved the issue by claiming that the Egyptian government would have to pay 38 million francs to compensate the French for ending the practice of using the corvée. The fellahin were gradually replaced by semiskilled workers from Europe and across the Middle East.

These events—and the crushingly slow pace at which manual labor progressed in carving out the canal—led to a shift toward mechanization. As Burchell noted, by 1862, "less than 10 percent of the sand that blocked the canal's path had been removed. At this rate of digging, it would take from fifteen to twenty years to complete the full 100 miles of the job."

By 1864, excavation machines had come into wide use, turning the canal project into not just a union of East and West but also a bridge between "the preindustrial world

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Port Said Harbor, at the north terminus of the Suez Canal, was enclosed by two jetties—with lengths of 1.5 and 2 mi—made of 30,000 lime-and-cement blocks that weighed more than 20 tons each.

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[and] the mechanical era," Karabell wrote. "For the first phase of its construction, it was a reflection of the past; during the second, it became a harbinger of the future."

The excavators were run by steam engine and positioned on barges in the canal. "From wooden towers, an endless chain of buckets scooped mud from the canal bottom," Burchell wrote. "Long chutes deposited the mud on the banks of the canal or onto other barges that carried it out to sea—whether at Port Said or at Suez."

At their peak, he noted, the excavators were able to generate approximately 10,000 hp "and were capable of digging out the canal at the rate of 6 million cubic feet [220,000 cu yd] a month."

But machines were not able to do everything. While excavating Lake Manzala, engineers experienced difficulty mooring the dredges along the shore. "And even when they scooped out soil from the lake bed," Karabell wrote, "the currents from the lake carried silt that rapidly filled in whatever holes had been dug. The dredgers could go for hours and have nothing to show for it."

The solution turned out to be the fishers whose people had worked the lake for thousands of years. They stood, Karabell wrote, "knee-deep in the water and scooped up as much as their arms could hold. They then rolled the mud, which stank of sulfur, into balls, squeezed out the water on their chests, and let these balls bake in the sun until they hardened."

Finally, workers conquered the rocky ridges at Shallufa, which stood between the Bitter Lakes and the Red Sea, using a combination of digging and explosives. The canal opened in November 1869, at a final cost of 500 million francs. Though Lesseps was feted as a hero for pulling off a project many believed impossible, the canal was not an immediate success. In its initial year, fewer than 500 ships passed through the canal, carrying, Karabell noted, around 400,000 tons of cargo. The company was expecting 5 million tons; the next year's total was 750,000, and the "company faced insolvency."

Eventually traffic picked up, though for the Egyptians, the project wasn't the godsend their leaders had hoped for. Ismail, desperate to rapidly modernize his country and his capital city so that it stood on equal footing with the rising industrial nations of Europe, had overextended the country's finances.

In one of the great ironies of the canal, the country that most wished to derail the project—Great Britain—benefited from it the most. As Siegfried noted, in the decade after the canal opened, 76 percent of its total tonnage "was under the English flag" (the French had only 8.3 percent). Gradually, Egyptian leaders, buried in debt, turned over control of the canal to Great Britain. First, Egypt sold its 44 percent stake in the canal company and then its 15 percent stake in the profit. In 1882, the British invaded the country and effectively gained control of the nation and the canal.

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Not quite 100 years later, in a very different world, the Egyptians would seize back control of a very different Suez Canal. Part 2, in the October issue, will delve into those events.

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