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The Building of the Panama Canal

Abstract

This research paper looks into details the building of the Panama Canal, one of the most ancient canals in the world. The paper starts by providing a brief history about the building of the Panama Canal and then reviews various challenges and obstacles that were experienced during the construction of the Panama Canal. Factors that led to the building of the canal are also reviewed.

The Building of the Panama Canal

The Panama Canal is ship canal situated in Panama. The canal links the Atlantic Ocean with the Pacific Ocean through the Caribbean Sea. It is approximately 81.8 kilometers (51 miles) long (McCullough 27). The building of the Panama Canal was started in 1882 by the French government and successfully completed in 1914 by the United States government after a forceful takeover in 1903. The canal was officially opened in late 1914. Operations at the canal started immediately after the official opening, with the first ship sailing through it on December 4, 1914 (McCullough 61). The site for building the Panama Canal was identified by European colonists in Central America who drew various construction plans and schemes for the canal.

Bennett asserts that the construction of the Panama Canal was inspired and aroused by the successful completion of the Suez Canal in 1868 by the French government (39). In 1971, the Columbian government gave the French government a concession to burrow and excavate a

canal across the Isthmus. The building process of the canal was spearheaded by Ferdinand de Lesseps, who was also the leader of the Suez Canal during its construction.

According to Bennett, most investors were impressed by the leadership, fortitude and commitment of Ferdinand de Lesseps, thus they were certain that after successfully completing the Suez Canal, Ferdinand would be able to complete the Panama Canal successfully as well (55). This led to a massive investment of more than four million U.S. dollars into the project.

In 1819, the Spanish government consented to build of a canal. Various research studies and surveys were carried out to determine the best location for building the canal. The existence of a narrow land-bridge between North and South America provided a unique opportunity to create a waterway that connects the Atlantic Ocean and the Pacific Ocean. According to Cameron, the first attempt to build a canal on this land-bridge by the colonists from France had failed (84). Panama, Nicaragua and Isthmus were selected as the most suitable routes for a canal. In 1975, it was decided that the canal should be located at Panama. Moreover, German scientist Alexander von Humboldt revived the interest of building the shipway by suggesting that the canal should be constructed at Panama.

The construction involved use of a huge labor force of more than twenty thousand men. Ninety percent of these workers were drawn from afro-Caribbean and West Indies. According to McCullough, the building of the Panama Canal also attracted the best engineers from France (130). However, the high death rate made it practically impossible to retain most of the engineers. Most of the engineers left or died shortly after contracting diseases.

Due to increased financial constraints, infections by tropical diseases and political interferences, the building process was temporarily stopped between 1887 and 1889. In 1891, the construction process resumed and by the beginning of 1903, only forty percent of the work had

been completed. More than two hundred and thirty million U.S. dollars had also been spent on the project (Cameron 103). In 1889, the French company constructing the canal collapsed due to unidentified reasons. After the collapse of the first French company, a new company called Compagnie Nouvelle du Canal de Panama was founded in 1895 to conclude the building process.

The new company started by excavating Culebra and building locks at Panama. A great amount of excavation was carried out at Culebra Cut to pave way for building of the Panama Canal. By the end of the building process, a total of sixty million cubic meters of material was excavated from the construction site. Out of this, approximately fifteen million cubic meters were excavated from the Culebra Cut. The Gaillard Cut was also lowered from sixty-five meters to fifty-nine meters above sea level (ASL). The width of the Cut was also narrowed (Noel & Carlos 91). A channel was also dredged between Panama bay and Balboa port to facilitate transportation of sand and other building materials in and out of the construction site.

Additionally, the new company revised the plan of the canal and eventually decided to construct a sea-level canal, and not a lock-based canal that was initially proposed. In this second phase of the building process, lower labor force was employed. For example, Cameron claims that only three thousand six hundred laborers were employed in the project as of June 1899 (173). Furthermore, the new French company deployed heavy machinery and divided the construction work into three divisions; namely the Atlantic Division, the Pacific Division and the Central Division.

Factors that led to the Building of the Panama Canal

The building of the Panama Canal was fuelled by commercial pressure from prominent American investors such as JP Morgan and Teddy Roosevelt. According to McCullough, the

Panama Canal provided considerable trade benefits such as cost savings to traders situated along the American coast (195). The building of the canal also led to increased economic growth and development, and generated numerous economic benefits to America. McCullough also cites technological development and the discovery of gold in California in 1851 as major factors that stimulated the need for waterways and motivated the building of the Nicaragua and Panama Canals (207).

Challenges faced during the Building of Panama Canal

Various challenges such as political interference, lack of professional expertise, improper planning and outbreak of diseases were faced during the building of the Panama Canal. During the construction period, thousands of workers died from infections caused by tropical diseases such as malaria, yellow fever and cold feet (Isthmian Canal Commission, U.S. Health Department 147). The death tolls were high because there were no known prevention and treatment methods for the diseases. The total number of deaths recorded between 1883 and 1890 was estimated to be twenty-two thousands (Isthmian Canal Commission, U.S. Health Department 227). The working environment also increased the exposure of the workers to hazardous conditions that increased their chances of contracting tropical diseases. Housing of workers was also a significant problem at the initial stages of the construction due to lack of habitable buildings in the region.

The building of the Panama Canal was also challenged with lack of engineering expertise. Although an international engineering congress was convened in Paris in 1879, most of the delegates were not engineers. For example, out of the one hundred and forty delegates, only forty were engineers. Even Ferdinand who was the leader of the congress was not a

professional engineer. The congress was largely composed of politicians (Cameron 255). This led to increased political interferences.

Similarly, the building of the Panama Canal also led to the separation of Panama from Columbia, and consequently creation of the state of Panama. According to Cameron, the separation of Panama from Columbia was illegal and involved various outrageous political interventions such as supporting the pro-autonomy movements in Panama by the U.S. government (271). According to Bennett, former U.S. President Roosevelt promised that the United States Navy would provide support to the rebel movements if they revolted against the Columbian government (186). In late 1903, Panama became independent and returned favors to former President Roosevelt by allowing the United States to control the Panama Canal Zone as from February 1904 at a cost of ten million U.S. dollars (McCullough 218). The zone finally became a territory of the U.S. Moreover, more than one hundred U.S. legislators were found guilty for involvement in the mismanagement and frauds that led to the collapse of the first French company. In 1899, the U.S. government constituted the Isthmian Canal Commission which reportedly recommended that a canal should be constructed through Nicaragua if France was not willing to sell out the Panama Canal to America. Consequently, the new French company was forced to sell the facility to America in 1904.

The Panama region also had a mountainous and rocky terrain that hampered the progress of building activities. Landslides also led to suspension of the building process between 1910 and 1911 (McCullough 304). Additionally, the presence of rivers such as Chagres River also posed considerable challenges to the building of the Panama Canal. The rivers often flooded, thus interfering with construction activities.

Lastly, poor planning and inadequate budgeting also affected the building process. For example, the initial estimated budget for the entire project was estimated to be two hundred and forty million U.S. dollars by engineers on February 14, 1880 (Bennett 361). However, six days later, Ferdinand revised the estimated costs one hundred and thirty million U.S. dollars, and finally to 120 million U.S. dollar a month later. Similarly, the estimated completion period for the project was eight years. However, Ferdinand reduced the period to six years.

Present Expansion Activities at the Panama Canal

The Panama Canal has been under expansion since September 2007. The budget for the expansion is estimated to be five billion U.S. dollars, and it is scheduled to end by December 2014 (Ward & Bruce 29). The expansion project aims at improving the capability of the canal to handle more ships.

Conclusion

Despite the numerous challenges that were faced during the building period, the Panama Canal was successfully completed. Moreover, most people also believed that construction of a sea-level canal was impractical by then. The Panama Canal project also formed a suitable ground for research studies in the engineering field. In addition, the Panama Canal has been acting as a guideline for many building and construction projects. For example, knowledge gained from the building of the canal has been used in construction of railways, roads and ports. The Panama Canal also led to increased shipping and trade activities at the coast, thus leading to economic growth and development in the United States of America.

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