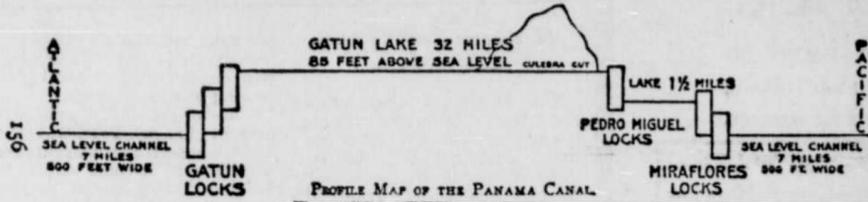


# The Americans In Panama

## Story of the Panama Canal From Start to Finish

By WILLIAM R. SCOTT

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### CHAPTER I.

#### The Land Divided—the World United.

It should have been said in 1904 that in nine years we would have removed more than 200,000,000 cubic yards of earth and rock, laid 5,000,000 cubic yards of concrete, made dams and fills of more than 50,000,000 cubic yards, relocated the Panama railroad, spent no more than \$300,000,000 and put the first ship through from the Atlantic to the Pacific. Europe would have smiled at our youthful temerity! Yet in 1913 we will have done precisely that.

During the first two years and a half the canal was in its first phase. It was the period of pioneering, preparation and adjustment. Two chief engineers were tried from the ranks of civil life, accomplishing the main preliminaries to canal construction before their departure.

The second phase of the canal was from the beginning of 1907 to the spring of 1912. During these six years the heart of the task was accomplished. President Roosevelt had found the man who was to take the organization built up by the men from the ranks of private industry and hurl it against the natural obstacles that stood in the way of success. Colonel Goethals was to take the blueprints and a head full of theories and work them out into the locks, dams and cuts in concrete mold today.

The third and last phase began in 1912, when the chief engineer set October, 1913, as the date for the substantial completion of the canal. It is distinguished by the gradual dispersion of the army of workers, by the reverse process of the first two years and by the creation of a permanent operating force with the detail finishing work that attends every large project.

The east has furnished the canal with its chief engineers—Wallace from Massachusetts, Stevens from Maine, Goethals from New York. But every state in the Union has furnished the rank and file, as well as every nation in the world.

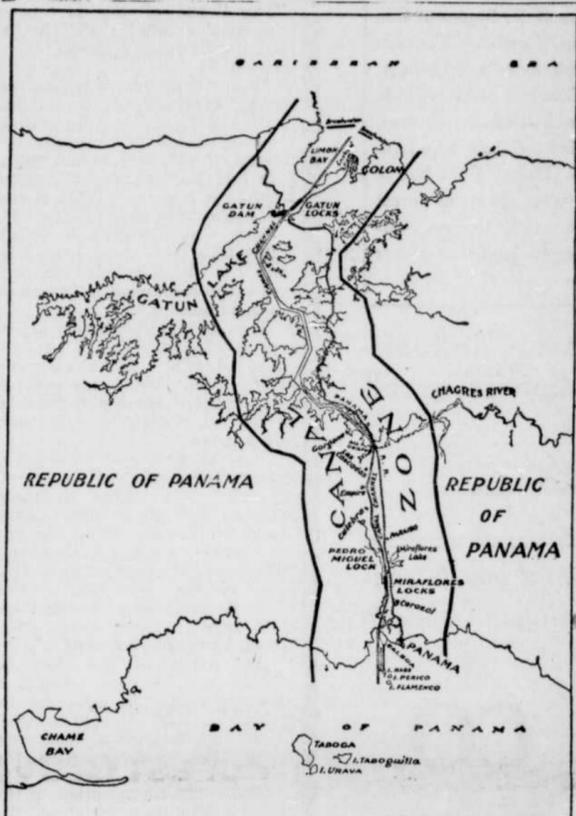
Standing out distinctly from the construction phase of the enterprise is the figure of Colonel Gorgas, the chief sanitary officer, now, as in the critical days of 1905, quiet, alert, confident. The last days of the canal find a perfect mechanism of his creation recording his ideas with dispatch and precision, receiving the plaudits of this and secure in the admiration of succeeding generations.

The locks may grow too small, the Gatun dam may break, a caving in of the foundations of the colossal structures may occur and other convulsions of nature may disable the canal, but nothing can rob the Americans of a wonderful achievement, nor will the work have been without glory and justification no matter what the future holds. We still could rejoice in the sheer courage, persistence and indomitable ability that have wrought the work in Panama.

Just as the civil war developed Grant and the Spanish-American war Dewey and Schley, so has the Panama canal developed Goethals. He justly is celebrated in the periodical and daily press and in books as a splendid embodiment of Americanism—the ideal combination of ability and integrity.

A perspective view of the whole enterprise shows that Theodore Roosevelt by his individual actions on at least three occasions vitally affected the canal and its successful consummation. When he cut the Gordian knot of diplomacy and took the canal zone he made the first long stride toward inter-oceanic communication. When he threw his weight into the scale for a lock type canal he decided the most critical question that ever arose in the career of the enterprise. The third time his judgment prevented a great mistake was when the project definitely was taken from the possibility of private construction and placed in the hands exclusively of government supervision. There were lesser decisions of great moment, notably the order for widening the locks and the Culebra cut, and his whole connection with the project was such as to rank as the most brilliant phase of his administrations.

To July 1, 1913, the canal had cost eight months before its completion, \$298,000,000. This was divided as follows: Canal zone, \$10,000,000; French purchase, \$40,000,000; engineering and construction, \$184,000,000; general expenditures, \$87,000,000; sanitation, \$16,



MAP OF THE ISTHMIUS OF PANAMA.

000,000; civil administration, \$6,500,000; fortifications, \$3,000,000.

At the San Francisco exposition some compensation will be found for a failure to see the canal by an exhibit of every kind of machinery used by the French and the Americans in the thirty-five years of construction, or from 1880 to 1915. When the government finally sold off the old French machinery that had littered the canal zone for three decades the best specimen of each kind of apparatus was reserved for this graphic exhibit.

### CHAPTER II.

#### The Life Cost.

MEASURED in money, the Panama canal was to cost \$375,000,000. This is impressive, but there is another item of cost more important—namely, "the life cost," or the cost in human lives of digging the canal.

Contemplating the record of the Isthmus for unhealthfulness, it could not but be anticipated in 1904, when the Americans took charge, that this cost would be heavy. That it should be surprisingly low constitutes a more significant achievement than any saving in the money or time cost of the project.

On July 1, 1913, the Americans had been nine years in the actual work of building the canal. In that period of nine years there were:

Deaths from disease..... 4,675  
Deaths from violence..... 1,151

Total deaths..... 5,826

Another full year before the practical and continuous operation of the completed canal will bring that total of deaths, estimating on the average of previous years and not considering unprecedented increases, to less than 6,200 by July 1, 1914. The sanitary department makes the following report for the nine year period ending July 1, 1913:

Year.	Number of employees.	Deaths.	Rate per 1,000.
1904	6,212	82	13.26
1905	16,512	47	2.86
1906	26,547	1,116	41.73
1907	25,228	1,131	38.74
1908	43,891	571	13.01
1909	41,157	502	12.20
1910	50,902	558	10.98
1911	48,876	539	11.02
1912	48,000	457	10.50
1913 (July)	50,000	246	

The foregoing figures not only cover those actually at work on the canal, but as well include those who, while not regularly employed, are the wards of the commission when idle. From 1907 onward health has been normal on the Isthmus within the canal zone.

with a death rate among the Americans frequently lower than in large centers of population in the United States.

President Roosevelt selected Colonel William Crawford Gorgas to clean up the Isthmus because of his record in sanitary work in Cuba and elsewhere. Chief Engineer Wallace doubted his capacity, and so did Secretary of War Taft, but by 1906 the latter was ready to acknowledge his mistake. Colonel Gorgas is a southern man, a native of Alabama, and so naturally quiet and reserved in demeanor and deportment that men accustomed to measure a man by bluster and self assertiveness make the mistake of assuming that he is not strong. His manner and methods suggest General Robert E. Lee.

There were two prime needs, as Colonel Gorgas viewed the Isthmus in 1904, in any campaign for improved health conditions. One was to make the Isthmus clean and the other was to kill the mosquitoes, which he considered a means of propagating disease. Practically everything done by the health department had been along these main lines of theory.

The United States profited by the mistakes of the French to the extent of reserving, in the treaty with the republic of Panama, the exclusive right to control the sanitation of Panama and Colon.

So in 1904 the engineers immediately went to work on a sewer, waterworks and street paving plan that would make of these two characteristically filthy Central American cities, clean, decent, sanitary places of abode.

The native population dumped all garbage and matter usually consigned to sewers into the streets. These streets were mudholes, which, with the admixture of refuse, made a condition inconceivably dirty and naturally unhealthful. The Americans made a reservoir in the mountains a dozen miles away for the water supply of Panama, dug sewers and forced the native houses to connect with them and then paved the streets with brick. A system of garbage collection was organized, and the city was cleared of all rubbish. Today the tourist sees some evidence of slovenly living, but conditions generally are surprisingly smart.

The second part of the program—killing the mosquitoes—was accomplished principally by the use of crude oil. Every stagnant pool of water and most of the running streams—except rivers—were treated with oil, and the rank grass and tropical growths were kept, cut by hundreds of scythe men. As a further war measure all houses were screened, the amount spent on

this item alone amounting to a sum between \$750,000 and \$1,000,000.

Having cleaned up within, rigid quarantine regulations were made to keep out persons who might be brought in a diseased condition from other ports. Vaccination of every person who enters the canal zone is compulsory unless a good scar can be shown. In 1905 a shipment of natives from

Martinique, imported to work on the canal, refused to land because they thought vaccination was a plan to brand them so they could never return to their home. They were forced out at the point of the bayonet and

It was before these plans had been matured that the first and only epidemic of yellow fever occurred in the canal zone. In April, 1905, an employee in the administration building in Panama became sick with the fever and from then on to September the canal zone was in the throes of a fear that was featured by the wholesale departure of employees. The newspapers gave the epidemic wide and oftentimes erroneous publicity, with the consequence that the government had to pay for the fear of the Isthmus thus created in greatly increased salaries and gratuities to secure American employees.

By October, 1905, Colonel Gorgas had mastered the epidemic, and, although isolated cases have occurred since, yellow fever was permanently banished as the bugbear of Panama. From July 1, 1904, to Nov. 1, 1905, forty-four employees succumbed to this disease. While the epidemic raged from April to September, 1905, there were thirty-seven deaths among employees, mainly among Americans, with whom the epidemic started.

There was a sledge with smallpox and the plague, but they, too, were eradicated in so far as epidemics are concerned, and malaria, pneumonia and tuberculosis remain as the most frequent attributed causes of death. Quinine has been bought by the ton for the canal zone dispensaries and hospitals. In 1908 each employee averaged about an ounce of quinine and was advised to take three grains daily.

The French had left hospital buildings in Colon and on the side of Ancon hill, just outside of Panama. The Americans renovated these and added to them until the present vast facilities came into form. They sometimes have more than 1,200 patients. A large asylum for the insane also is maintained. Hospital cars are attached to the passenger trains to bring in patients to the Ancon and Colon hospitals each day. In every town or settlement there is a dispensary with a physician in charge and a sanitary officer to inspect conditions of living. There are about twenty-four employees out of every 1,000 constantly sick.

For the canal zone, Panama and Colon, in 1905 the death rate was 49.94 per 1,000. In 1911 it was 21.46, or cut down more than one-half. In 1906 the death rate among the Americans from disease was 5.36, and in 1911 it was 2.82. In 1908 and 1910 there were more Americans killed in accidents or died from violence than died from disease.

It necessarily follows from an engineering task of this magnitude, where vast quantities of explosives are handled, where there is a considerable railroad mileage and other hazardous features of construction, that the death rate from accidents would be large.

Every month since the American occupation began in May, 1904, there has been an average of ten employees killed or have died from external causes. The total to July 1, 1912, was 995, and by the time the canal is completed, barring unusual catastrophes, the deaths from this cause will be around 1,100. Under the head of violence are included deaths by drowning, suicide, dynamite explosions, railroad accidents, poisonings, homicides, electric shocks, burns, lightning and accidental traumatism of various kinds.

**Dynamite Explosion In Culebra.**  
Scores of deaths have resulted from the practice of the native employees in using the railroad tracks as public highways. There have been bad collisions and wrecks with fatalities, and dynamite has claimed about one-tenth of the victims of external violence.

the handling of 25,259 tons of dynamite, or 50,517,850 pounds, to July 1, 1912, the following principal accidents have occurred:

May 22, 1908, in Chagres division, two killed; premature explosion of twenty-six tons, caused by lightning.

Oct. 8, 1908, at Empire, in the Culebra cut, five killed and eight injured, premature explosion.

Oct. 10, 1908, at Mindi, seven killed and ten injured, premature explosion; dredging in Atlantic entrance.

Dec. 12, 1908, at Bas Obispo, premature explosion of twenty-two tons in the Culebra cut, twenty-six killed and forty injured.

Jan. 10, 1909, at Paraiso, two killed, ten injured.

July 25, 1909, on Panama railroad, four killed, nine injured.

Aug. 30, 1910, at Ancon quarry, four killed, two injured.

July 19, 1911, at Ancon quarry, four killed, two injured.

Forty deaths from dynamite explosions are noted for the year 1908, the largest number for any one year of canal construction, and this does not take into account several individual fatalities. Chief Engineer Goethals issued stringent regulations to govern the handling of the dynamite, but it

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