

1855-1955

The Story of
The First Transcontinental Railroad

Foreword

ON THE 100TH ANNIVERSARY of the completion of the Panama Railroad, the author offers this narrative as a modest tribute to that distinguished triumvirate—Stephens, Aspinwall and Totten—whose vision and enterprise, indomitable courage and perseverance, conceived, financed, and built the Isthmian railway.

This was the first transcontinental line. It also has the distinction of being the first railway to be built by Americans in a foreign land. The project was carried out under conditions difficult for the engineer of this generation to comprehend; lack of communications, of transport and of labor; slight knowledge of deadly tropical diseases; en suma, lack of virtually everything required in building a railway. It is against this background that the undertaking must be appraised. It is perhaps doubtful if any construction project in Latin America, in the century which followed, struggled against and overcame so great a number of adverse factors.

The author acknowledges his reliance on the many authoritative works on the subject published since 1850. The indulgence of the reader is requested for the grammatical and other errors appearing in the text.

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References Consulted

Capt. Miles DuVal, U. S. N. Ret.	AND THE MOUNTAINS WILL MOVE . . . AND CADIZ TO CATHAY	1944 1939
Victor W. VonHagen	MAYAN EXPLORER <i>The Life of John L. Stephens</i>	1947
Philippe Bunau-Varilla	THE GREAT ADVENTURE OF PANAMA AND THE CREATION, DESTRUCTION AND RESURRECTION	1920 1914
John L. Stephens	INCIDENTS OF TRAVEL IN CENTRAL AMERICA	1842
F. N. Otis	HISTORY OF THE PANAMA RAILROAD	1861
John H. Kemble	THE PANAMA ROUTE	
Tracy Robinson	PANAMA; A PERSONAL RECORD OF FORTY-SIX YEARS	1861-1907
Joseph B. & Farnham Bishop	GOETHALS, GENIUS OF THE PANAMA CANAL	1930
Robert Tomes	PANAMA IN 1855 <i>An Account of the Panama Railroad</i>	
Gerstle Mack	THE LAND DIVIDED	1944
Salvador Camacho Roldan	NOTAS DEL VIAJE EN COLOMBIA Y ESTADOS UNIDOS DE AMERICA	1885
HARPER'S WEEKLY MAGAZINE	<i>Various Numbers</i>	1857-1858
PANAMA STAR AND HERALD	<i>Various issues of early 1855</i>	

The Panama Railroad

Part I

THURSDAY, JANUARY 27TH, 1955, marks the Centennial of the completion of the first transcontinental rail line in this hemisphere, the Panama Railroad, traversing the Isthmus of Panama from the Atlantic port of Colon (formerly Aspinwall) to Panama City on the Pacific. Measured by mileage, the 48-mile Panama Railroad makes an unimpressive comparison with the great transcontinental lines in the United States, but appraised by all the immense difficulties of every description encountered in its 4½ years' construction period, and reflected in its excessive cost, the enterprise assumes high rank as an outstanding achievement in man's ability to overcome a series of immense difficulties of all kind including climate and terrain.

These difficulties were typical of construction in the American Tropics, and were a forerunner of those later to be met (and not overcome) by the French Canal Company in the 1880's, and in a lesser degree by the Americans in the canal work commenced in 1904.

It has been said that few railways ever built received less in the way of supplies and assistance from the country traversed. Native labor was non-existent and thousand of workers from the West Indies, principally Jamaica, and Colombia, were brought to the Isthmus, as well as Chinese and Irish. The continuous fight against malaria and other tropical diseases took heavy toll of all regardless of color. An American doctor visiting the Isthmus in 1854 wrote that he never saw one human being that did not show the effects of tropical disease. Although the Isthmus was a vast forest of tropical woods, labor was so scarce that it was cheaper to bring railway ties from South America and the United States. The Isthmus supplied tropical fruits only; all other food was brought from the U. S. The torrential tropical rains prevalent for over 6 months each year were always a major detriment to progress, destroying in a few hours embankments representing weeks of hard labor.

THE FOUNDER—JOHN LLOYD STEPHENS

The Panama Railroad was from its inception wholly an American enterprise. It was conceived, promoted, financed and built by a courageous and far-sighted group of New York businessmen, the guiding spirit of which was John Lloyd Stephens, whose name will always be associated with the Panama Railroad, although he did not live to see its completion. His death was due to the ravages of tropical fever which gradually had wasted this commanding figure, who had given of himself without stint for years in his tireless efforts and devotion to the successful realization of the enterprise of which he was the founder, leader, and to which he ultimately gave his life.

Stephens was a well known world traveler, author, and diplomat before he became interested in the Isthmian railway. His travels in the 1830's had taken him to Egypt, the Near East, Europe and even Russia. Returning to New York from Europe in 1841, he was appointed by President Van Buren as American Minister to Guatemala. The Guatemalan capital was reached in those days by disembarking at one of the nondescript Caribbean ports, and travelling the 200-mile trail to the capital city, lying 5000 ft. above sea level, by mule. From here, Stephens' thirst for travel and exploration later took him to El Salvador, Nicaragua and Costa Rica.

Sometime thereafter Stephens wrote his well known book "Incidents of Travel in Central America", which although penned over one hundred fifteen years ago, is considered today by the informed as perhaps the best book ever written on Central America. It was in this book that there appears in his report to President Van Buren covering his first few months in Guatemala, then in constant civil war and revolution, the comment that notwithstanding his most diligent efforts, he had not been able to find the Government! It was on this trip to Central America that Stephens, who was accompanied by Frederick Catherwood, a well known artist of the day, visited and rediscovered near Copan (Honduras), the famed Maya ruins. The site was completely obliterated by dense tropical jungle, and its very existence long had been forgotten even by those who lived in its shadow. Later they traveled to the ruins of the ancient Mayan cities of Southern Mexico and Yucatan. Catherwood's drawings of the various Mayan monu-

ments with their undecipherable hieroglyphics which had been standing for over a thousand years, were reproduced in Stephens' book and attracted universal attention, especially in the scientific world. Although no archaeologist, Stephens was actually the father of modern Mayan archaeology, and all of the renowned explorers and scholars in this little known field over a half century later, Morley, Spinden, Sevell and others, have paid high tribute to his pioneer work.

Stephens made his last trip to Europe in the summer of 1847 in the capacity of Vice President of the newly formed Ocean Steamship Navigation Company inaugurating a service between New York and Bremen. He had long cherished the desire of meeting the world-famous traveler and geographer, Alexandre Humboldt, and this was realized in July by a long visit with Humboldt, then residing at the Royal Palace in Potsdown. Humboldt was then 78 years of age, but keenly interested in all of the explorations which Stephens had made in Central America.

THE PRELIMINARY WORK

It was during this year (1847) that apparently Stephens' interest in a highway or railway across the Isthmus of Panama was awakened by the information reaching him of the riches and potentially great future of California and the Pacific Coast. This it should be noted was before the discovery of gold in California in January, 1848. Shortly after, Stephens made his first trip to the Isthmus in the winter (dry season) of 1847-48 in company with James Baldwin, a well known Civil Engineer. They spent several weeks on the Isthmus and explored the route following the valley of the Chagres River to the Continental Divide, where a pass less than 300 ft. above sea level was found. From this point the line descended the valley of the Rio Grande to the Pacific at Panama City.

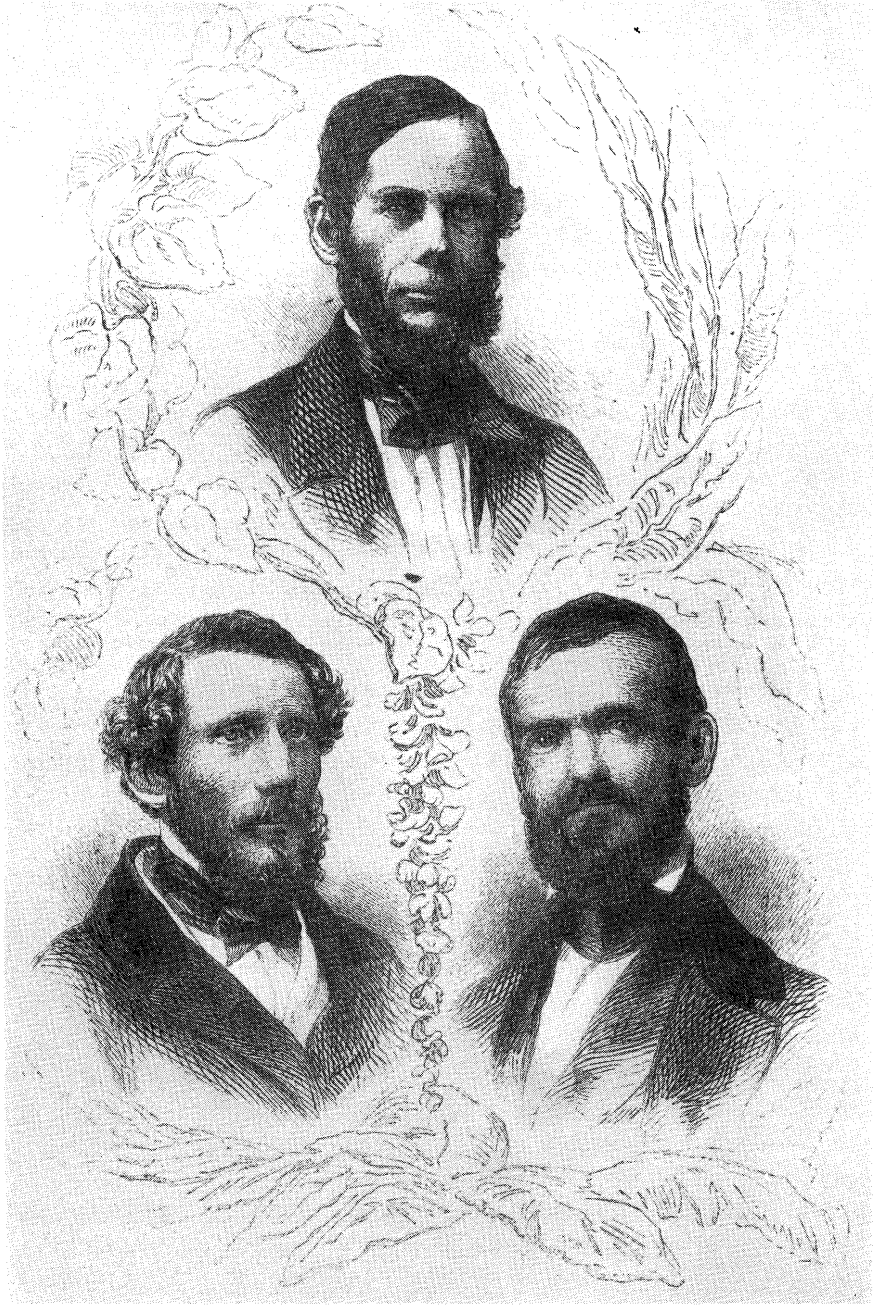
Stephens returned to New York with the conviction that the building of a railway across the Isthmus was entirely practicable. With his associates, William H. Aspinwall, President of the Pacific Mail Steamship Company, and Henry Chauncey, prominent New York capitalist, an exclusive concession was now obtained from the Republic of Nueva Granada (later Colombia) which was signed

in Washington on December 28, 1848, and down payment made in the sum of \$120,000. As the group considered the project of national interest, their thoughts turned toward a subvention from the U. S. Government, based on the importance of the proposed Railroad for "military and naval purposes, as well as for assistance to commerce and travel to California."

In December, Stephens and Aspinwall dined with President Polk at the White House, all members of the Cabinet being present. There was discussion of a railway or highway across the Isthmus of Panama. Shortly after, Senator Benton of Missouri, then a powerful figure in the Senate, introduced a Bill by the terms of which the Panama Railroad would be given a subsidy of \$250,000 per annum for twenty years. President Polk was unimpressed by the arguments advanced by either the Railroad promoters or the sponsors of the Bill, and later recorded in his Diary, "I consider the Government possesses no Constitutional power to apply public funds even within or without the country to enable these people to construct a road across the Isthmus of Panama and that I would veto the Bill if presented." The Bill never came to a vote.

THE INCORPORATION OF THE COMPANY

Undiscouraged, Stephens and his associates determined to raise the funds required in New York. In April, 1849, Stephens made his second trip to the Isthmus, accompanied by J. L. Baldwin and Colonel Hughes of the U. S. Topographical Corps. In April of the same year, Stephens, Aspinwall and Chauncey obtained a Charter from the New York State Legislature to construct and maintain a railway across the Isthmus of Panama. In the following June the books were opened for subscription to purchase 10,000 shares of Panama Railroad Company at \$100 each and all were subscribed. Later an additional \$1½ million of Convertible Bonds were sold, as well as additional stock. The capitalization of the Company was authorized in the sum of \$5 million, and in 1855 this was increased to \$7 million. The preliminary legal steps and first financing having been consummated successfully in the United States, the theater of action was now to move to the little known Isthmus of Panama—2000 miles and 10 to 12 days' travel distant from New York.



JAMES L. BALDWIN.

GEORGE M. TOTTEN.

JOHN C. TRAUTWINE.

THE ATLANTIC TERMINAL

The question of location of the Atlantic terminus at either Porto Bello or Limon Bay was the first decision to be taken. Limon Bay was finally chosen and was later given the name Aspinwall. An eye-witness description of Manzanillo Island, in Limon Bay, has come down to us by one of the early workers in these words: "The island is one of dense jungle, reeking with malaria and abounding with almost every species of wild beast, poisonous reptiles and venomous insects. It was impossible to work without covering face and hands with gauze, and impossible to reside ashore." This then was the location chosen as the Atlantic terminal of the railway, and from which the small band of hardy pioneers began to cut their way and to build an "iron road" for 48 miles through swamp, jungle, and a low mountain range before reaching the Pacific.

THE ENGINEERS

A search was made for engineers familiar with tropical construction and labor, and there were few. Colonel George M. Totten and John C. Trautwine, two of the leading engineers of the time in the United States, and who had had experience in Nueva Granada on canal construction, were given a contract to build the entire railway. The plan at this time was to commence work on the Pacific side and at Gorgona on the Chagres River, half-way between the two oceans, and to which point small boats could navigate.

DISCOVERY OF GOLD IN CALIFORNIA

During this period a sensational event having wide repercussions occurred—the discovery of gold in California in early 1848, and the news spread around the world with astonishing rapidity. The tide of emigrants now crossing the Isthmus enroute to California dislocated values and made the fulfillment of the contract with Totten and Trautwine impossible. It changed the nature of the undertaking from one based on long range planning to one which could produce immediate profits. Col. Totten and Trautwine were now appointed Associate Chief Engineers and the task of procuring labor and materials commenced. Time was now the most important factor, and the slogan was "full speed ahead".

THE CHAGRES ROUTE

Many descriptions have come down to us through the years of the dreaded, hazardous journey across the Isthmus of Panama and which, although short in distance, probably had few parallels anywhere. All stressed the utter lack of any accommodation on the Atlantic side or elsewhere—the dangerous and highly uncomfortable three to five days' trip up the Chagres River in cayucos or small boats—the overnight stops in the filthy and disease ridden settlements along the river—finally to be thrown off in the mud at the little Indian village of Cruces—the haggling and bargaining for animals when available—the tropical fevers and endless rains—the remainder of the trip across the Divide following the old Spanish Trail afoot or by mule—the ever present risk of holdups and robbery by the dreaded Cimiarones Indians—until at long last the tunneled jungle trail opened out on the rolling plain, and against the rich blue of the Pacific arose the massive stone walls, red tiled roofs and twin Cathedral towers of Panama—and still distant El Dorado.

PANAMA IN 1850

The Panama City of 1850 was a startling contrast to the one with which the Americans were to become so familiar fifty years later. The entire mixed population of white, indian and negro, some 4000 souls, resided in the restricted area between San Ana Plaza and the Bay. The houses were nearly all of primitive and cheap construction, the streets unpaved, and the main Plaza facing the great Cathedral was a deplorable sight. It was described by an American traveler in 1849 in these words: "Bare and desert-like, nearly devoid of life, a few shackled mules cropping the parched grass, groups of naked negro children playing on the steps of the Cathedral, a gang of galley slaves clanking their manacles as they were driven to the prison hardby, a water carrier on his mule crying, '*agua—agua—quien quiere agua?*'" Many churches in the city were abandoned and disfigured by debris and tropical growth.

From San Ana Plaza to the present location of the Panama Railroad station there were only a few nondescript shacks. The town was in a state of utter and complete stagnation, with little or no resemblance to its former grandeur. A Panamanian wrote in 1849

to a friend in Bogota, "If you want to see Panama again as you wrote me last, come quickly, as the city is rapidly dying and may perish in another few years." The sole U. S. "enterprise" was The Boston Panama Ice Company which had erected a storehouse adjacent to the Bay and periodically brought ice from Boston by sailing vessels around Cape Horn. The loss in weight enroute was about 50%. In the beginning the natives refused to touch the ice, considering it dangerous and unhealthy. Finally they grew to like it in preparation of drinks and for which they gladly paid 10¢ a pound when available.

The notorious Aspinwall Hotel was located on Central Avenue two blocks from the Cathedral Plaza—later the site of Lyons Hardware Store. The flea-bitten hostelry, patronized extensively by travelers, consisted of several large bare rooms which were devoid of glass windows or furniture of any kind. In each of the rooms cots were stacked against the walls. For \$3.00 per day the guest could choose his cot, set it up, and in company with a dozen others, obtain his privacy and rest.

THE MISSION TO BOGOTA

It was now found that a modification of the railway concession obtained from the Government of Nueva Granada was essential to the enterprise. Stephens volunteered to make the long arduous trip to Bogota, capital of Nueva Granada. No capital in the world was more isolated or time consuming to reach than Bogota in 1850. Even 70 years later travelers were taking 15 to 20 days for the trip up the Rio Magdalena alone, depending always on the state of the river, and to which there was no practical alternative route. No account has been left as to the time that Stephens spent on the river, but he reached Honda on the Upper Magdalena, and from there the traveler took to mule for the 3 to 5 days' hazardous journey through the rugged towering Cordillera to reach Bogota 8500 ft. above the sea.

Here a serious accident occurred to the hardened world traveler who had covered thousands of miles by mule in Central America and Europe. Half-way on the journey he was thrown from the animal, seriously injuring his back, an injury from which he was never

completely to recover. He instructed his Indian guides to make a litter and on this, always in great pain, he entered the capital city days later.

SANTA FE DE BOGOTA IN 1850

Bogota, capital of the Republica de Nueva Granada, and ancient site of the Chibehen Indian Empire, was a drowsy, slow and easy-going city, of some 50,000 inhabitants, little changed from the Spanish colonial period or the days of Simon Bolivar only thirty years before. Lying on a high plateau surrounded by the towering Cordillera, Bogota was about as remote and isolated from the world as Llasa. European and American newspapers reached the city months old. Few foreigners were courageous enough to attempt the long hazardous journey to Bogota, and by the same token, few Bogotanos ever left their own country, or even their city. It was a center of culture and leisurely life, polished orators, priests, writers and politicians, and was frequently referred to as the "Athens of South America." Both men and women dressed in sombre black. Perhaps the purest Spanish in all South America, uncorrupted by foreign influence, was spoken here. The great Cathedral towered over the Central Plaza and the city was dotted with churches, convents, monasteries large and small. The people, including the large Indian population, were deeply and many even fanatically religious. Church holidays were numerous, and spectacular religious processions, unchanged in form and pattern from the 18th century were frequent—all reminiscent of the medieval period.

THE NEW CONCESSION

It was here then, brushing by trains of pack-laden Indians and ox-carts, that Mr. Stephens was carried on the litter by his faithful Indians along the narrow streets to make his first call on the Minister of Foreign Relations. There were other similar official visits, and on June 2, 1850, still incapacitated and in great pain, he and the Minister signed at the Presidential Palace the new contract which in effect was an all-exclusive concession for transportation in any form across the Isthmus of Panama. This was the basic contract by the terms of which the Panama Railroad was built and operated until 1867. Returning to New York via Jamaica, Stephens

found that he had been elected President of the Panama Railroad Company.

COMMENCEMENT OF WORK

Limon Bay in 1850 was a swamp unfit for human habitation. Due to this condition, both the laborers and engineers were compelled to live on small boats anchored in the Bay for the first several months before lumber was obtained for the erection of houses. In August, 1850, the grading and filling work finally got under way and activities in all directions were accentuated. One year was required to complete the line to Gatun, 8 miles distant. Continuing up the valley of the Chagres and through miles of all but bottomless swamp, Bohio, 8 miles farther, was reached early in 1852. The Panama Railroad published its first timetable in the "Panama Herald" on March 23, 1852, announcing daily train departure, Aspinwall to Bohio,—the fare \$2.50, the distance 16 miles. Barbacoas, where the Chagres River was to be bridged, was reached late in the same year. The cost of the first 16 miles had been excessive, far and beyond the original estimates, but the Directors lacked nothing in the way of courage or vision and additional funds were supplied.

STEPHENS' LAST DAYS

During the summer of 1852 Stephens returned to the Isthmus where he followed with close attention and satisfaction the progress of the rail line through the Chagres Valley. His last official act was personally to conduct Jessie Benton Fremont, heroine of "Immortal Wife", and her husband, General John C. Fremont, then Senator-Elect from California, in their crossing of the Isthmus enroute to Washington. Both of the distinguished travelers were in poor health and under Stephens' direction a palenquin was prepared and the best Indians available carried them across the rugged, tortuous trail to the rail head, then at Barbacoas. This was to be Stephens' last visit to the Isthmus. The malarial fever contracted years before in Central America had wasted and debilitated his naturally strong body until he was but a shadow of his former self. Following a collapse, he returned to New York and died in October at the age of 47 years. His passing was universally mourned by the public and his associates; "a remarkable man in a remarkable age."

CAPT. U. S. GRANT AND THE 4TH INFANTRY

It was during 1852 that the Railway undertook the transportation of eight companies of the U. S. 4th Infantry, enroute New York to California for garrison duty. Reaching Barbacoas by rail safely and "on time", the troops were poled up the Chagres River to Cruces and Gorgona and were forced to make the remaining part of the journey across the Divide on foot. Cholera and jungle fever attacked the troops while making this march. The undisciplined soldiers drank promiscuously of native liquors and consumed freely of everything found in the way of tropical food and fruits. The forced march developed into a mob scene, each man for himself. Days later the Regiment was again mobilized in Panama City and after a month's sojourn there awaiting transportation, California was finally reached with a loss of over one hundred men. The young Captain, U. S. Grant, Quartermaster of the military contingent, was forced to take the brunt of the criticism for a good part of the disaster. General Grant later said that the crossing of the Isthmus of Panama in 1852 was one of the toughest experiences of his long and eventful career, not excluding the Civil War, while he was Commander-In-Chief of the Union forces.

THE RIO CHAGRES BRIDGE

The first major upset in the construction—there had been scores of minor ones—occurred when a portion of the nearly completed bridge across the Chagres was carried away in flood. Reconstruction of the 625 ft. bridge was completed in a matter of months. It was a masterly engineering job and was to endure for fifty years until the Line was abandoned. The first train crossed the Barbacoas bridge in November of 1853 and was the occasion for wild rejoicing on the Isthmus. The completion of the Railroad was now assured.

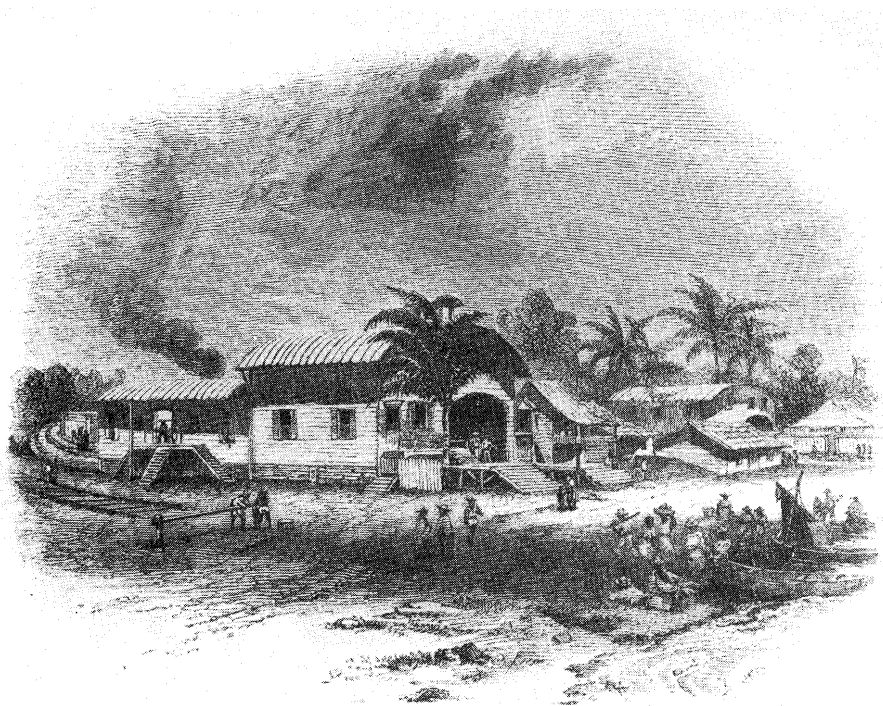
Work was started on the Pacific side, and the first heavy excavation now lay ahead—the seven mile section through the Continental Divide. In September the Railroad reached Summit 11 miles from Panama.

THE ATLANTIC AND PACIFIC UNITED

Following a series of further delays and vicissitudes of every description, the two track laying crews, one working from the Atlantic and the other from the Pacific, met on the night of January

27, 1855 and, under the light of the blazing torches, and in a heavy rain, the rail connection was made. On the following day, a Sunday, Colonel Totten crossed with the first train. Fragmentary accounts have come down through the years of this historical event. The train was received with wild, unrestrained cheers and enthusiasm on the part of the army of workers, the people gathered along the Line and in Panama City to see the first transcontinental train as it came "thundering over the Divide and speeding downgrade from the Summit to Panama as a chariot of fire." The speed was perhaps 15 miles per hour.

The Panama "Star & Herald" on January 29th reported, "The whistle of the railroad engine has at length woke up the slumbering echoes of the woods of Panama; away through hill and dale, over the quiet bay, and amidst the ruins of the ancient city has the first wild shriek gone forth, proclaiming the advance of commerce and civilization on the Pacific coast of South America. On Sunday afternoon, January 28, about half past three o'clock, thousands of



TERMINUS AT PANAMA.
(Present site of the Panama Brewery)

people were collected along the line to witness, for the first time, the appearance of the iron horse as he rattled over the track to the station, and many were the expressions of surprise and wonder at his appearance, and the facility with which the wild creature was managed. Mules and packsaddles are now and forever supplanted by the steam engine, and the mud of the Cruces Road is exchanged for a comfortable seat in a railroad car."

The Editor continues, and pays perhaps the first recorded tribute to American enterprise in a foreign land; "But what British money and French ingenuity could not accomplish in upwards of a quarter of a century, Yankee enterprise has undertaken and carried through in five years, and has given to the world a monument of what a few determined spirits of the United States can do. The name of William H. Aspinwall and his associates who headed this great scheme, of Colonel Totten and those who with him practically carried out the work, now stand before the world more worthy to be immortalized than the greatest heroes who ever lived; and it is to be hoped that such men may long be spared to witness the benefits which they have conferred on the commerce of the world by their indefatigable zeal and unflinching determination in building the Panama Railroad."

Daily train service was now established between Aspinwall and Panama on a schedule of four to five hours for the journey. This was later reduced to three hours and eventually to two hours.

THE BUILDER OF THE RAILROAD

Colonel Totten was one of the few engineers who had started with the enterprise in 1850 and saw it through to successful completion. It was due in major part to his courage, perseverance and ability that the railway finally was completed. He was to continue active for many years and served as Chief Engineer until 1875. Later he was a valued consultant to the French Canal Company in its early years. He fully deserves the title, "Builder of the Panama Railroad." Colonel Totten survived during his thirty years on the Isthmus a severe and nearly fatal attack of yellow fever, as well as other tropical diseases. He died in 1884 at 75 years of age. Totten was the first American engineer to plan and successfully carry

through to completion a major construction project in a foreign country.

THE OFFICIAL CELEBRATION

February 17, 1855, was chosen by the Directors of the Railroad for the official celebration. The Company invited a number of New York guests to go to the Isthmus, and after a two days' inspection of the rail line, the great banquet was held on that night at the Aspinwall Hotel in Panama City. Accounts of this function have come down to us through the pen of one of the invited guests who was present. The banquet was attended by officials of the Nueva Granada Government, various foreign Consuls, the Bishop, members of the Railroad staff and invited guests. The menu was in French and speeches and toasts were given in English, French and Spanish, and great quantities of food and liquor were consumed. Robert Tomes, one of the guests, recorded in his book, "The banquet was prolonged far into Sunday; the noisy conviviality increasing as the wine was diminishing."

THE EXPLOITATION OF THE RAILROAD

The Railroad enjoyed a very prosperous business for 15 years following its completion. Its tariff was, as to be expected, very high. Passengers paid \$25.00 for the one way trip across the Isthmus, and this tariff was to remain in effect for many years. Wharves were built in both the Atlantic and Pacific terminals, additions made to the rolling stock and the physical condition of the railway greatly improved. The imported ties were now replaced by those of native hardwood, which were to endure for over half a century. Stations were erected at several points across the Isthmus and around each, little settlements arose, which were not to disappear until submerged by Gatun Lake sixty years later.

THE COST

The cost of the Panama Railroad has been a very controversial subject for many years. In his authoritative book "And The Mountains Will Move" by Capt. Miles DuVal, U. S. N. Ret., the author places the cost at \$7 million, or in excess of \$140,000 per mile; an extremely high figure even giving consideration to the many unfavorable conditions prevailing during the construction. Colonel

Totten wrote to the Directors at the conclusion of the work, "I am ashamed that so much has been spent in overcoming so little, and take no credit for any engineering science displayed in the work. The difficulties have been of another nature and do not show themselves on the Line." In this comment Col. Totten no doubt refers mainly to the continuous struggle and excessive cost to obtain laborers and keep them fit to work. During the same period and for some fifty years later, railway lines were being built in the Middle West states at from \$15,000 to \$40,000 per mile. Heavy expenditures were, of course, made on the Railroad following 1855, and it was not until 1859 that the construction account was closed and established on the Balance Sheet in the sum of \$8 million.

Any reference to the Panama Railroad was, of course, accompanied over the years by extravagant and utterly unrealistic fabrications, many of which were to endure for over half a century, and perhaps even until today. The most repeated was the canard gaining wide acceptance that the loss of life during the construction of the railroad equalled one person for each tie laid in the line. Col. Totten's records evidence that the total working force was some 6000 men, and fatalities from all causes at less than 1000. There were 140,000 ties in the Panama Railroad.

THE NEW CONCESSION

During 1867, a highly prosperous year for the Railroad, the Directors took note that the railway concession obtained by Mr. Stephens from the Government of Nueva Granada in 1850, was for a period of 49 years only. Furthermore, the concession stipulated that 20 years after the commencement of operations, the Bogota Government could acquire the railway by payment of \$5 million. This meant that in 1875 the Company could be compelled to give up an enterprise earning in excess of one-half million dollars net annually, for only \$5 million.

To avoid this potential disaster, the Chief Engineer, Colonel Totten, and William Nelson, General Agent of the Railroad in Panama, clothed with full legal power, were sent to Bogota to obtain a modification of these terms. The route and means of travel to Bogota then were the same as those used by Stephens in 1850—river boat and mule. The Bogota of 1867 differed little from that visited

by Stephens. A radically different official atmosphere, however, was encountered by the two Railroad ambassadors. Stephens, seventeen years before, had received a sympathetic and understanding reception in Government circles as he was petitioning in effect only for the right to spend several millions of dollars of foreign capital in a railroad project of doubtful value, even if actually built, across the Isthmus of Panama—a place almost unknown in Bogota, in fact, little more than a geographical term. The risk involved was wholly with the concessionaire.

Messrs. Totten and Nelson, however, were representing an Empresa now known far and wide as a “gold mine”; exaggerated reports of profits had preceded them and from which the former Government of Nueva Granada, now the Republic of Colombia, received a mere pittance annually. The two Americans, no novices, were now to face some sharp shrewd South American negotiators who knew what they wanted and were fully aware that they held the trump cards.

There was, of course, no telegraph and mail would have required months to reach New York and obtain an answer by any means then available. Messrs. Totten and Nelson were then strictly on their own and unable to consult the Directors in far-away New York. After protracted negotiations, the railway concession was extended for a period of 99 years dating from 1875, but the Company was obligated to pay \$1 million in gold at once to the Bogota Government, an annual payment of \$250,000.00, and to extend the railway line to the nearby Pacific Islands, Naos, Culebra and Flamenco, in Panama Bay. It was a costly new contract for the Panama Railroad. When news reached New York of the onerous terms imposed by the Colombian Government, the shares of the Panama Railroad fell sharply from the \$300 level on the New York Exchange, but later recovered a good part of this loss as Net Earnings continued high for the next few years. It was soon realized that even under the newly imposed “burden” the enterprise could operate profitably.

FINANCIAL REVIEW OF THE RAILROAD

The Panama Railroad was one of the most financially successful American enterprises ever carried out in the foreign field. Before completion, the Railroad had actually earned over \$1 million from

passenger and miscellaneous traffic; a stock dividend was declared in 1852, and a total of dividends in stock and cash of 25% before completion of the railway. Those who had purchased the Railroad Company shares during the early years at \$100 were to recover through dividends their entire initial investment in less than eight years. In 1868, one of the most prosperous years, dividends totaling 40% were paid. The 50th dividend was declared in September of 1869 and dividends for that year totaled 24%. The 75th dividend was paid in 1876, during which year four quarterly dividends each of 3% were paid.

During the 1860's the market price of the railway stock reached \$348 per share and was highly rated in investment circles. It was at that time the highest priced stock on the New York Stock Exchange, its closest rival being the New York Central Railroad shares quoted at \$188. In 1880, twenty-five years after the inauguration of the railway, the stockholders were to receive \$250 for each share from the French Canal Company.

The low level of business was reached in the year 1870 following the inauguration of through rail service New York to California—the time 6½ days. In September of that year in a general circular to the stockholders, the Directors stated, “Revenues were barely sufficient to cover working expenses and interest during the year. Although for causes beyond our control, the stock of the Company has undergone a serious and powerful revulsion; yet the Directors cannot but look back with pride and pleasure to the fact that since 1849, \$20 million have been returned to the stockholders in the form of dividends.” In April of 1872, however, the Directors took occasion in a general circular to “congratulate the stockholders on the improved outlook and prospects for the future.”

The decline in traffic, however, had been foreseen by the Directors of the Panama Railroad, and efforts were made in developing business along the West coast of Central and South America. As early as 1856 the Company had placed in service two small steamers which plied between Panama and San Jose, Guatemala, making calls at all of the Central American ports. The population of California at this time was some 500,000 whereas the population of the Latin American Republics bordering on the Pacific was 10,000,000 people. The Central American coffee production, all

grown along its Pacific coast, and that of Colombia, greatly increased as it could now readily reach American and European markets. Exports from the United States and Europe to this area doubled and tripled. Vast quantities of bullion were transported from California, Peru and Chile with surprising little loss. During the 1870's the Directors could proudly point to the fact that traffic originating in Latin America was nine times greater than that of California.

PERSONNEL

The Directors of the Panama Railroad Company were from the beginning men of ability, wealth and prominence, unafraid to risk their private fortunes in a hazardous enterprise. In this period a private fortune of \$300,000 was considered substantial wealth. Henry Clews and Russell Sage, financial giants of their day, both served as President of the Company in the 1870's. William H. Aspinwall was to serve for fifteen years as Director and was Stephens' invaluable and loyal collaborator during the early years.

During its entire century of operation, the Panama Railroad has been under American management, including the years of French ownership, 1880-1904. Several of the former Managers and employees of the railroad during the American period were to attain distinction in higher posts after leaving the railway service. Dr. Manuel Amador, Chief Medical Officer for the Railroad company for many years, was elected first President of the Republic in 1903. W. G. Bierd, General Manager 1905-1908, became President of the Chicago & Alton Railway. Ralph Budd, Chief Engineer during the same period, was later President of the Great Northern Railway, and subsequently served as President of the Chicago, Burlington & Quincy Railway for some twenty years. He is at present Chairman of the Chicago Transit Authority. Glen E. Edgerton, following his graduation from the U. S. Military Academy in 1908, was assigned to duty on the Isthmus, and served as Assistant Engineer on the relocation of the Panama Railroad. With the rank of Major General, he served as Governor of the Panama Canal during the World War II period. Following other important assignments in the Government service, Gen. Edgerton is currently Chairman and President of the Export-Import Bank of Washington, D. C., and a Director of the Panama Railroad.

Part II

THE FRENCH CANAL COMPANY

An event of great import to the Railroad enterprise and Panama was now approaching. M. Ferdinand De Lesseps, famed builder of the Suez Canal, and associates, had formed in Paris the *Compagnie Universelle du Canal Interoceanique de Panama*, known to the world as the French Canal Company, for the purpose of building a sea-level canal across the Isthmus of Panama. The route of the canal was naturally to follow that of the Railroad.

M. De Lesseps, accompanied by his young Egyptian wife and three of their nine children, made his first visit to the Isthmus, arriving in Colon on the last day of 1879. He was then 75 years of age. The "great Frenchman" as he was known throughout Europe, was accorded a royal reception and his affable, dynamic personality and unlimited contagious optimism captivated all whom he met.

The first sale of stock in the French Canal Company took place shortly after his return to France, and in another year the Isthmus was a beehive of general activity. Thousands of laborers from the four quarters of the world, including African negroes, were brought to the Isthmus. Vast supplies of construction material and equipment, mostly from Europe, began to arrive at the Atlantic port. A number of contracts were awarded to prominent French and European contracting concerns; also a dredging contract to a U. S. company. The estimated cost of the sea-level canal was taken at \$150 million, to be completed in six years.

THE PURCHASE OF THE PANAMA RAILROAD

It was soon realized by M. De Lesseps and associates that the acquisition and control of the Panama Railroad were essential to the success of the canal enterprise. Accordingly, 68,534 of the 70,000 outstanding Panama Railroad shares, nearly all held in New York, were purchased by the French Company for the sum of \$17,133,500 equal to \$250 a share. The outstanding sterling and dollar railway bonds were assumed by the purchaser, and \$1,102,000 was paid to the Directors. The total amount paid, a sum in excess of \$20,000,000, represented one-third of the limited resources of the French Canal Company at that time. The price exacted by the



[From a picture by Bonnat]

FERDINAND DE LESSEPS
1805-1894

Directors of the Panama Railroad Company was considered by many as exorbitant at the time, and described by the French as "sheer extortion." As perspective lengthens, this does not seem to have been an overstatement in view of the later payment of \$40,000,000 only to the French Company in 1904 by the U. S. Government for all the works, materials, equipment and properties on the Isthmus, including the Railroad itself.

THE VICISSITUDES OF THE FRENCH

The French Canal Company was plagued from the beginning and during its entire life with inadequate finance, gross underestimate of the difficulties to be encountered in building a sea-level canal, with consequent under-estimate of cost, as well as the ravages of tropical diseases. The deadly scourge, Yellow Fever, the origin and transmission of which were then unknown, was to take a heavy toll, and from which the higher officials and their families were not exempt. The wife, daughter and son of Director General Jules Dinglaire, all died of yellow fever during 1884. Maurice Hutin succeeded M. Dinglaire, and died in 1886. Philippe Bunau-Varilla, successor-Director General, survived a severe attack of yellow fever and was invalided home to France in early 1886. He was succeeded by Leon Boyer who also died of the fever a few weeks later. Director General Vanneau died of the same malady in the following year.

The French contracting companies who had made enviable records at Suez were to soon learn that the experience gained and methods employed there were of little or no avail at Panama. The two undertakings with their vastly different problems bore no resemblance one to the other. Yet, considering the tools employed and conditions under which they worked, an immense effort was made, by no means devoid of results.

The anticipated long pending crisis was reached in 1888. Following strenuous efforts by De Lesseps, now 84 years of age, to save the canal enterprise from bankruptcy and "preserve the honor of France", climaxed by the failure of the last offering of Lottery Bonds in June 1888, the Company was declared bankrupt early in 1889. Work at Panama was suspended. Perhaps one fourth of the sea-level canal as originally planned had been completed.

THE COLLAPSE

The failure of the French Canal Company created dismay and consternation throughout France and Europe. The French people during a period of eight years had furnished over \$252 million to the Company, an immense sum for that period. They were now faced with a total loss of their investments. It was estimated that over 600,000 families were involved in the disaster. Charges of all kinds from betrayal of trust to downright corruption were made in the press and in the *Chambre des Deputes*. Later a French Minister of Public Works was tried, found guilty of accepting bribes and given a prison sentence. Charles De Lesseps, son of Ferdinand, was convicted of alleged bribery and given a prison sentence, which he was not compelled to serve. Baron De Reinach, financial adviser to the Canal Company, later committed suicide. Ferdinand De Lesseps, broken in spirit and body, died in La Chesnaye in December 1894 at 89 years of age.

THE GREAT FRENCHMAN

Ferdinand De Lesseps is today a legendary figure, but his magnetic personality, amazing energy for a man of his age, his ability to sway and influence people, his inexhaustible optimism in the face of calamitous developments plus the great triumph at Suez, fully establish him as one of the great figures of the second half of the century. On the very eve of the collapse of the French Canal Company, De Lesseps was travelling through the provinces of France expressing unfaltering determination and repeating his favorite phrase that "The Canal will be built." He continued tirelessly and to the very end to exhort the people to have faith and subscribe to the shares of the Canal Company. His immovable adherence to the sea-level canal until the very end was, of course, a grave error of judgment, and for which he, his family and associates were to pay a terrible price.

A massive monument of the Canal Builder at Port Said, erected by the French Nation, looks down on the traveler passing through the Suez Canal. But the Canal itself is, of course, his greatest monument. The *Compagnie Universelle du Canal Maritime de Suez* has been a great success financially, exceeding the fondest hopes of the promoters. Under French management it has been considered

since its inauguration in 1869 as the best administered European enterprise.

THE LIQUIDATION

In February 1889 the French Canal Company was dissolved and a Receiver appointed. The liquidation of the Company now proceeded. It was to be long and painful, and was a *cause celebre* during this period. The revelations of official misconduct and corruption, charges and counter-charges, were to shake the French Government to its very foundation. The morale of the French people, barely recovered from the devastating defeat in the Franco-Prussian War of 1871, had now suffered a further blow. In 1894 the *Compagnie Nouvelle du Canal de Panama* was formed. Strenuous efforts were now made to obtain financial support from abroad in that the enterprise could be resuscitated, the Canal completed, and the "honor of France preserved." Bunau-Varilla, confident and undaunted, was now prepared to dedicate his energy, no mean ability and time to this objective; but his efforts were not to be crowned with success until a decade later—1904.

In March 1894 Bunau-Varilla travelled to Russia in the hope of inducing France's ally to lend financial support to the Canal enterprise. In St. Petersburg he had several interviews with M. De Witte, famed Minister of Finance of the Imperial Government, and obtained his promise of support. Returning to France greatly elated, he gained the invaluable collaboration of M. Casimir-Perier, powerful French Premier, as well as M. Burdeaux, Minister of Finance. The hopes of victory, however, were short-lived. Misfortune still pursued the French Canal. In May the Government fell. The following month of November was to see the assassination of the French President Carnot, and the passing of Czar Alexander. Burdeaux died at the end of the year and Casimir-Perier was elected to the Presidency of the Republic, a position devoid of power or authority. Thus ended all hopes of Russian intervention. The French were now reconciled to a holding operation until the interest of the U. S. could be enlisted.

Work was continued by the New Company on a small scale at Panama for the purpose of not invalidating its concession with the Government of Colombia. Following the French failure, a period of decay and general business stagnation prevailed on the Isthmus.

THE CAUSES OF FAILURE

In the years which have passed since the failure of the French Canal Company in 1889, engineers, historians, financiers and others have attempted to appraise and evaluate the very controversial subject—the causes for this failure. One is hesitant to take issue with the greatest authority on the French Canal, but it is not facile to accept the thesis of Philippe Bunau-Varilla that the collapse was due to the failure of the last offering to subscription in June 1888 of \$144,000,000 in Lottery Bonds. On the insistence of M. Germain, Founder and President of the powerful Credit Lyonnais, the entire issue was offered to the public as against partial issues favored by the Directors of the Canal Company. The offering was a failure.

The financial status of the enterprise in 1888 was one of near bankruptcy; the credit and prestige of the Company seriously impaired. It had been for years under fierce attacks by elements of the Parisian press and in the *Chambre des Deputes*. It was becoming increasingly difficult and costly to raise funds. All but Ferdinand De Lesseps and a few devoted associates had despaired of success.

An immense amount of work was yet to be done at the end of 1888 in opening any type of Isthmian waterway; even the so-called Provisory Lock canal reluctantly adopted in 1887 as a last resort. It remains a grave question whether this final project—a high level lock canal estimated to cost \$82 million and to be completed in 1891, could have been accomplished within these limits.

Nor is it possible to accept the belief held by many that yellow fever and tropical diseases were responsible, or that corruption played a decisive part in the failure. All of these factors, it is true, contributed to the collapse, but taken either separately or collectively, they were not decisive.

Viewed with the perspective of over half a century, it seems clear, as so convincingly brought out by Capt. Miles Duval in his book "And The Mountains Will Move", that the failure of the French Canal Company was due to the initial error. This was the adoption of a sea-level type canal, and rejecting with little or no consideration the one feasible, practicable plan submitted by Godin De Lepinay at the Paris Scientific Congress in 1879. All of the ills of the French—and they were legion—other than those of tropical diseases,

stemmed directly from this initial tragic ill-fated decision. It seems, in retrospect, incredible, that in 1880 a plan so simple, so understandable, so easily demonstrated—the creation of Gatun Lake with a level of about 85 ft.—could have been by-passed for a sea-level waterway with utterly insufficient knowledge or understanding of the vast amount of work involved.

This was a decision taken by a private enterprise, wholly dependent on the successful sale of stock periodically to the French people for its finance. Twenty-five years later a Government disposing of unlimited funds, holding absolute authority over the territory in which the Canal was built, with control of yellow fever, and possessing excavating machinery and modern mining equipment unavailable to the French, rejected the popular sea-level project, adopted the De Lepinay plan, and carried it through to successful completion within the limits of cost and time estimated as early as 1908.

THE FRENCH ACHIEVEMENT

Any reference to the French Canal would be incomplete without full recognition of the immense amount of work actually performed on the Isthmus under conditions greatly inferior in all phases to those prevailing a generation later for the Americans. All who saw in 1904-1905 the result of these efforts—then plainly visible—were astonished and deeply impressed. The immense gash made in the Continental Divide by primitive means and inadequate construction plant—the dwellings, hospitals, shops, the vast amount of construction and railway equipment all usable and later employed by the Americans, were in themselves eloquent, albeit mute, evidence of careful planning and execution.

The French engineers and supervisory staff merit the highest praise for their professional ability, personal courage and deep devotion to the heavy task entrusted to them. They were men of unquestioned integrity. The French engineers accepted service at Panama as a patriotic duty, as an opportunity to enhance the “glory of France”, as was so well proven by Dinglaire, Boyer, Bunau-Varilla and many others. Theirs was not the responsibility for the great failure.

Part III—The American Canal

THE BIRTH OF LA REPUBLICA DE PAÑAMA

The storied "Panama Revolution" by which the Province of Panama seceded from the Republic of Colombia took place on November 3, 1903. In this bloodless political maneuver the Panama Railroad was to play a major and perhaps decisive part. The Hay-Herron Treaty ratified by the U. S. Senate in April of 1903 was unanimously rejected by the Colombian Senate on August 12. This debacle was received with dismay and consternation in Panama and keen disappointment in Washington.

Hearing of intended revolutionary activities on the Isthmus during the following October, the Colombian Government dispatched late in the month a few hundred troops from Cartagena to Colon for the purpose of suppressing any revolt or serious political disturbance. The troops arrived in the port of Colon on the morning of November 3rd and General Tovar, the Colombian general in command, at once ordered the Panama Railroad to supply transportation for the troops across the Isthmus to Panama City.

The Railroad management had, however, anticipated this development and, as it happened, the entire supply of railway rolling stock was on the Pacific side of the Isthmus and not at Colon. Gen. Tovar was then politely informed of this misfortune and offered special transportation for himself and staff to Panama. This was accepted under protest and at noon they arrived in Panama City. Early in the afternoon the General and his staff made a visit to the military barracks where a Colombian battalion was quartered, and after being politely received by the Commanding Officer, General Esteban Huertas, all were promptly placed under arrest and held incommunicado, according to plan.

On the afternoon of the following day on the historic Cathedral Plaza the Junta de Independencia, headed by Dr. Manuel Amador, later first President of the Republic, proclaimed to the Panama people and the world the independence of Panama. Wild, unrestrained patriotic enthusiasm and excitement, tempered by certain forebodings as to what action Colombia might now take, reigned throughout the city. The U. S. Cruiser NASHVILLE was fortunately in Colon Harbor at the time, the Colombian troops

caused no trouble, and together with their released Officers returned to Cartagena. Official recognition of the newly formed Republic was promptly given by the United States and other countries. Panama now entered the society of nations.

THE U. S. TREATY WITH PANAMA

The United States then negotiated a treaty with the Republic of Panama by which it obtained the right to build and operate an Isthmian canal. Panama was ably represented in this negotiation, conducted in Washington, by M. Philippe Bunau-Varilla, who had been a commanding figure in all that had occurred leading up to, during and following the events of November 3rd. Theodore Roosevelt was President of the United States, John Hay was Secretary of State, and William H. Taft, Secretary of War. It was under the provisions of the Hay-Bunau Varilla Treaty that the Panama Canal was built and operated until 1937, when the treaty underwent certain modifications.

THE NEW RAILROAD

On May 4, 1904, the United States on payment of \$40 million formally took over from the new French Canal Company all of their properties, works and assets on the Isthmus and elsewhere, and among which was, of course, the Panama Railroad.

The Isthmian Canal Commission was re-organized and the Panama Railroad became for all practical purposes a division of the Canal organization. The Railroad was now virtually rebuilt under the masterly direction of John F. Stevens, Chief Engineer of the Isthmian Canal Commission, and former Chief Engineer and General Manager of the Great Northern Railway. More powerful engines and modern rolling stock were placed in service. New docks were built at Colon and on the Pacific side, together with new terminal stations. By 1910 the Panama Railroad, one of the oldest in the two continents, could boast that it was as modern as any railway in the United States, and was now fully prepared to do its part in the building of the American canal, as it had for the French 25 years before.

THE LAKE-LOCK CANAL

The type of waterway adopted by the U. S. Government was a lake-lock canal, with the summit of Gatun Lake 85 ft. above sea

level. This was precisely the plan as presented to the Paris Scientific Congress in 1879 by Godin De Lepinay. The creation of Gatun Lake made necessary the relocation of the Railroad between Gatun and Miraflores, or three-quarters of its entire length. The Railroad was now to face its greatest challenge. Over its 5-ft. gauge line immense quantities of construction material and commercial cargo were handled, as well as millions of cubic yards of waste material from the Culebra cut excavation. A great army of labor was recruited for the Canal work from the islands of the West Indies, Spain, Italy and Greece. During the period 1910-1912 over 40,000 men were on the payrolls.

The construction of the Panama Canal by the U. S. Government was well planned, efficiently and economically executed, and represented an expenditure of \$375 million. The Americans had a number of advantages over the French in their work 25 years before. An extensive program of modern sanitation was carried out under the direction of Col. William C. Gorgas. Hospital facilities were greatly expanded. The last case of yellow fever occurred in 1907 and malaria was brought under control. By 1910 the Canal Zone communities and cities of Colon and Panama were considered as healthy places of residence as those in any country, and with the new houses, commissaries and clubs, life was as pleasant and comfortable as in most places in the United States. The labor situation was ideal and there was never any shortage of workers; nor was there any problem of finance. It perhaps could be said that during the 10 years' construction period there was hardly a major upset, whereas during the building of the Panama Railroad and the French Canal period, life was a series of never ending upsets of every description. The Americans also had, of course, the great advantage of modern excavating and mining machinery unavailable to the French.

THE BUILDERS

The Panama Canal stands as a monument to Chief Engineer John F. Stevens, who created the engineering organization for its construction and influenced the decision for the lock canal instead of the sea-level type favored at the time by many eminent engineers; and to George W. Goethals, Chairman and Chief Engineer of the Isthmian Canal Commission from 1907 to 1914, whose efficient and

masterly direction of the construction operations and administration of the enterprise to successful completion, deservedly give him the title of "Builder of the Canal." Both of these great leaders always gave generous praise and recognition to the army of workers who toiled over the 10-years' construction period with high morale and pride in the Canal itself.

THE OPENING OF THE CANAL

The Panama Railroad steamship "ANCON" was given the honor of making the first transit of the waterway on August 15, 1914. Thus the century-old dream of an Isthmian canal joining the two great oceans was finally realized. The event, representing a prodigious effort of man and immense sums of money, was given a few lines only in the world press, for on that day the newspapers were filled with the news of the German armies smashing through Belgium—destination, Paris.

With the passing of the Isthmian Canal Commission, George W. Goethals, now Major General, was inaugurated on April 1, 1914, as the first Governor of the Panama Canal, and served in that capacity, as well as President of the Panama Railroad Company, until July of 1916.

Four decades, which included two World Wars of nine years' duration, have passed since the opening of the Isthmian waterway to world shipping. The operation and administration of the Panama Canal under the successive Governors, all officers of the Corps of Engineers, and the trained civilian staff, have established a standard of overall efficiency not excelled by any enterprise in the foreign field; an achievement of which all Americans can take justifiable pride.

* * * * *

It would be pleasant and fitting to conclude this narrative by writing that the Panama Railroad, on the eve of its second century, faces a bright and prosperous future. This is not, however, the case. Today there is a first class concrete highway linking Colon and Panama, over which passes most of the freight and passengers previously handled by the Railroad. The amount of commercial

cargo formerly carried by rail has greatly diminished. Serious consideration is being given by the U. S. Government to the discontinuance of the railroad as a common carrier.

The last chapter in the 100 years' colorful history of the Panama Railroad may then be shortly recorded. This eventuality, however, will not erase from memory or the pages of history the enthralling saga of the first American enterprise in a foreign land, and all that is owed to the intrepid group of pioneer entrepreneurs and army of workers whose courage and perseverance triumphed and gave to the world the first transcontinental railroad.

THE PANAMA RAILROAD COMPANY

The first Board of Directors 1849 at the time of Incorporation:

HORATIO ALLEN	GOUVERNEUR KEMPLE
WILLIAM H. ASPINWALL	THOMAS W. LUDLOW
EDWIN BARTLETT	JOHN L. STEPHENS
JAMES BROWN	DAVID THOMPSON
HENRY CHAUNCEY	CORNELIUS VAN WYCK LAWRENCE
SAMUEL S. HOWLAND	JOSEPH B. VARNUM
PROSPER M. WETMORE	

* * * * *

Board of Directors 1955

HONORABLE GEORGE H. RODERICK, <i>Chairman</i>	Ass't. Secretary of the Army, Washington, D. C.
MR. KARL R. BENDETSSEN	Houston, Texas
REAR ADMIRAL RICHARD E. BYRD (Ret.) ..	Boston, Mass.
MR. RALPH H. CAKE	Portland, Oregon
HONORABLE T. COLEMAN ANDREWS	Commissioner of Internal Revenue, Washington, D. C.
GENERAL GLEN E. EDGERTON, <i>President</i> ..	Export-Import Bank of Washington
MR. T. H. MAENNER	Omaha, Nebraska
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MR. HOWARD C. PETERSEN, <i>President</i> ..	Fidelity Philadelphia Trust Co., Philadelphia, Pa.
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GENERAL J. L. SCHLEY	Washington, D. C.
GENERAL J. S. SEYBOLD, <i>President</i>	Panama Canal Company, Balboa Heights, C. Z.
HONORABLE ROBERT T. STEVENS	Secretary of the Army, Washington, D. C.