

Nicaragua, Panama and the dream of a canal (part 2)



Sean Brady concludes his tale of the Panama Canal and looks ahead to the potential challenges of building the proposed Nicaragua Canal.

The Americans

When day broke on 2 November 1903, the *Nashville*, a US warship, lay at anchor in Limon Bay¹. News of its arrival reached Amador Guerrero and he knew everything was in place for revolution. Over the course of the coming days, Colombian control of the Isthmus of Panama came to an end. The local Colombian garrison was overpowered, further US warships arrived and the last Colombian troops departed. The Republic of Panama was declared and on 6 November it was formally recognised by the USA. Over time, Amador Guerrero would be elected president, and Panama would appoint its “confidential agent” or Envoy Extraordinary and Minister Plenipotentiary to the USA¹. It would be none other than the engineer who had worked so tirelessly on the Culebra Cut: Philippe Bunau-Varilla.

The events that led to Bunau-Varilla’s appointment almost defy belief. In late 1900, when interest in building a canal was rekindled, Bunau-Varilla – who had never given up on the dream – travelled to the USA. He discovered Nicaragua was the US Senate’s preferred route, so he began canvassing for Panama. But the shadow of French failure was long. Nicaragua’s opponents cited its seismic volatility as an issue – earlier that year there had been a number of eruptions in the region, one of which killed an estimated 30 000 people. (When Bunau-Varilla heard the news, he wrote: “What an unexpected turn of the wheel of fortune!”²) Then, just days before the Senate vote on selecting a route, Bunau-Varilla, ever resourceful, sent each of the senators a one-centavo Nicaraguan stamp showing Lake Managua with a volcano violently erupting in the background. Panama was selected by a margin of just 42 to 34,

and the USA acquired the French company for \$40M^{1,2}.

Almost immediately, there was an issue: the Colombians. They were reluctant to ratify the treaty with the USA. Bunau-Varilla again seized the initiative. He arranged to secretly meet the spokesman for the Panamanian rebels, Amador Guerrero, at the Waldorf-Astoria hotel in New York¹. Guerrero said revolution was possible: the local Colombian garrison on the isthmus could be easily overpowered, but the issue was to prevent Colombia landing fresh troops. (An overland march from “mainland” Colombia required crossing the Darien wilderness – an impassable swamp.) So Bunau-Varilla travelled to Washington and met with President Theodore Roosevelt. Bunau-Varilla asked if US warships could be used to prevent the Colombians landing fresh troops? If so, Panamanian revolution could be successful and such a grateful new nation would no doubt ratify a canal treaty.

The idea appealed to Roosevelt, who was an advocate for the USA becoming a world power. Bunau-Varilla departed with what he believed was an unspoken “understanding” that support would be forthcoming should the Panamanians rise². Bunau-Varilla passed on the assurance to Guerrero, along with funding, the wording for an independence declaration and the design for a flag very similar to the Stars and Stripes². The revolution was a complete success and Bunau-Varilla, as “confidential agent” in Washington, negotiated the Hay–Bunau-Varilla treaty on behalf of the Panamanians, securing the USA’s right to build a canal and essentially giving it sovereign rights over the canal zone.

Almost immediately the USA faced the

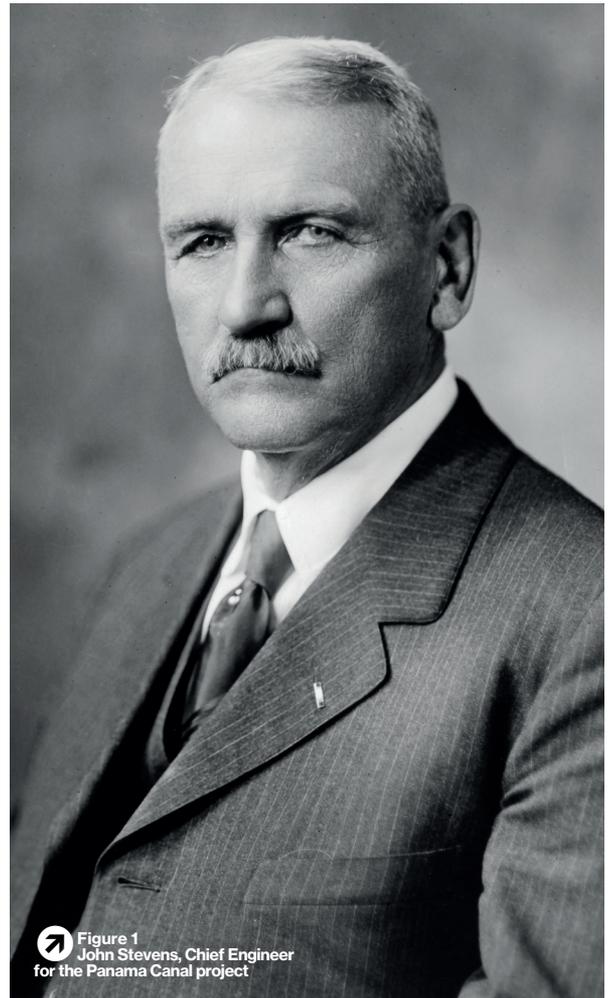


Figure 1
John Stevens, Chief Engineer
for the Panama Canal project

same challenges as the French, but it had one critical advantage: Colonel William Crawford Gorgas. He wasn’t an engineer, but a doctor who had worked extensively in Cuba and was an expert on tropical diseases. The prevailing wisdom at the time was that yellow fever was spread by the “miasma” – the gas from decaying tropical vegetation. Gorgas, however, believed a different theory – the disease was spread by mosquitoes. He proposed a radical plan to control the disease by controlling the mosquito population.

Despite its scepticism, with workers already dying, the USA backed his plan. Gorgas directed his team of several hundred to fumigate every private house

in Panama. Mosquito screens were put up in the hospitals, and all standing water was sprayed with a film of oil to prevent mosquitoes depositing eggs and reproducing. It is considered to be the most expensive eradication program ever undertaken, but it was immensely successful¹. Within years of arriving in Panama, Gorgas had eradicated yellow fever.

With the disease under control, the work began in earnest. The chief engineer, John Stevens (Figure 1), was instructed by Washington “to make the dirt fly”¹. And he did. He industrialised canal construction by using modern US earthmoving equipment and modifying the existing train system to transport spoil away from the Culebra Cut. By 1906, 24 000 workers were on the job. By 1907 there were 32 000. In 1910 there were almost 40 000¹.

Perhaps the most important technical decision Stevens made was that Panama would no longer have a sea-level canal. The canal would climb through a series of locks, being carried up through the Culebra Cut and reducing the amount of material necessitating excavation. The Chagres River would be dammed, creating Lake Gatun, the largest man-made lake in the world at 164 square miles¹. Damming the river would manage its flooding and the lake's water would gravity-feed the locks, at the same time running turbines and generating electricity. Tucked away in this fledgling country, the canal would be self-sufficient.

By the time it was completed it had taken a total of 35 years, cost \$639M, and would become known as the “longest 50 miles in history”¹. The total volume excavated was 200M cubic metres – enough to build a wall 10m high by 5m wide that would stretch for 4000km in length². It opened on 15 August 1914, but what should have been a day of triumph went largely unnoticed. Two weeks previously, the world had gone to war.

Panama today

Fast-forward 100 years and the canal's saviour is its very Achilles heel. There are only two sets of locks at each entrance, and they can't cope with the number of vessels wishing to use them. Congestion results, with commercial shipping experiencing delays of up to seven days in high season.

To address the bottleneck, the Panama Canal expansion project commenced in 2007. It will deliver a third set of locks, which is expected to double the canal's throughput. The winning consortium, Grupo Unidos por el Canal (GUPEC), was awarded the tender with a price of \$3.1bn, more than \$1bn lower than the next highest tender. With allegations it was a “low-ball” bid, the inevitable disputes have arisen³. At the time of writing, claims are in International Chamber of Commerce arbitration in Miami. Time will tell how much the expansion will cost overall.

This expansion, however, won't tackle Panama's big issue: the vessel size limitations of its existing locks. While massive when constructed – big enough for the *Titanic* – they are small compared to modern vessels, many of which are three times the size. And this is where Nicaragua comes in – it will have substantially bigger locks⁴.

Nicaragua Canal

Throughout its history the Nicaraguan route has been shut down repeatedly. It was overruled by De Lesseps and canvassed out of consideration by Bunau-Varilla. Its burial was ensured in 1914 when Nicaragua, during Panama's closing stages, signed a pact with the USA giving it the exclusive right, in perpetuity, to build a canal⁴. Whether or not the USA seriously intended doing so is debatable, but the pact ensured no one else could either – Panama would retain a monopoly.

The treaty was finally abolished in 1970, but no-one was leaping at the opportunity to build a canal⁴. Then enter Hong Kong billionaire, Wang Jing, and the Hong Kong Nicaragua Development (HKND) Group in 2013⁵. Wang Jing is an enigmatic figure, believed to have close ties to Beijing – many speculate this is, in fact, a Chinese canal⁴.

He has a strong supporter in Nicaraguan President Daniel Ortega, who views the canal as the economic saviour of Nicaragua – currently the second-poorest country in the western hemisphere after Haiti⁴. The arrangement is similar to what occurred in Panama – HKND Group will essentially have sovereign land rights over the canal's route. With allegations that Ortega is selling off parts of the country, numerous street protests have turned violent⁶.

The canal itself will be 172 miles long, 65 miles of which will pass through Lake Nicaragua⁵. Its locks will be considerably larger than Panama's (even taking into account the expansion), and they will accommodate the world's newest cargo supertankers⁷. The route will cut through virgin rainforest and ancient tribal areas, and while many political concerns have been raised – some of them constitutional – environmental concerns are dominating the debate. Ironically, while in Panama it was the environment that posed a serious threat to the project's completion, in Nicaragua the project's completion poses a serious threat to the environment.

The potential environmental damage to Lake Nicaragua is taking centre stage. The lake is a 3191-square-mile expanse of water that plays a critical role in providing drinking water and agricultural water to many Nicaraguans⁷. Disturbance of this ecosystem will have serious consequences. One issue is the shallowness of the lake – in places it is only 10–15m deep. The lake will require a 28m deep channel to be dredged in order for the canal to traverse it⁵. This process alone has set environmental alarm bells ringing. Then there are concerns once it becomes operational. Sea water will inevitably flow into the canal from the oceans and increase the salinity of Lake Nicaragua⁵. New species of flora and fauna will be introduced in a similar manner⁸. And then there are the spills: pollution from minor diesel spills from vessels will inevitably occur, while the consequences of a major spill could be catastrophic.

Environmental experts allege a glaring lack of planning regarding these questions and are calling for a more thorough environmental review of the canal, both during construction and for its lifetime⁵. They call for an assurance that international best practice standards will be applied to ensure an environmental disaster is averted.

Closure

Interestingly, construction of the Nicaragua Canal is occurring at a time of great change in global shipping. The Panama Canal is completing its expansion and there is exploration of the potential for a northern route above Canada – a route that may only be possible because of global warming and

the receding icecaps, although this may be decades away. And then there's the view that China's exports are at an unsustainable level and that growth in shipping is declining. Add to this the question of whether construction of the canal, which is currently suspended, will ever resume.

The geopolitical circumstances and the power of individual personalities involved in Nicaragua are reminiscent of Panama more than 100 years ago. In De Lesseps' day they had an amusing palindrome: *a man, a plan, a canal, Panama*. Of course, De Lesseps didn't have much of a plan, but there was no way of planning for the amount of material they would have to excavate, the climate they would face and the diseases that would destroy them. The USA didn't have much of a plan either – it's doubtful if Congress would have approved the project in the first place if it had known what it would actually cost in the end². And the USA had to change the fundamental nature of its canal by introducing locks in order to complete it. History tells us there is no plan that can anticipate the magnitude, or indeed the nature, of the problems that await us when we try and

reshape the world. While we may label the Nicaragua Canal as a construction project, it is much more – and the challenges in successfully completing it without irreparably damaging the environment will be immense.

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