UNDER NEW MANAGEMENT:

U.S. ADMINISTRATION OF THE PANAMA CANAL ZONE, 1904–14

by

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(Under the Direction of Stephen Mihm)

ABSTRACT

This thesis studies the institutional structure of the civil government and leadership at the Panama Canal during the American construction period between 1904 and 1914. As the signal piece of global infrastructure of the Progressive Era, the canal substantially amplified the United States' diplomatic, trade, and martial presence in the Western Hemisphere. The organization of the Canal Zone marked a considerable shift in the role that the federal government played, as it began to take a much more active position than the mixed enterprise that characterized infrastructural projects of the nineteenth century. French failure and scandal played a crucial role in developing this administrative structure and marked an obsession with rapid construction of the canal to avoid similar failures. Preoccupation with efficiency created an autocratic civil administration in the Canal Zone that sacrificed individual rights and private profit.

INDEX WORDS: Twentieth-Century United States, Panama Canal, American Political Development, Central America, Federal Administration, Infrastructure, Public-Private Distinction, Progressive Era

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CHAPTER 1: INTRODUCTION

Upon its completion in 1914, the Panama Canal symbolized the growing pains of the United States federal government at the turn of the twentieth century. However, that facet of the canal has largely been obscured by the equally momentous advancements in commerce, engineering, and public health. While it unleashed commercial benefits on the global stage, the canal also affected the United States' domestic economy by restructuring comparative advantages and industrial capacities.[1] By 1912, *Scientific American* hailed the canal as "the greatest engineering work of all time."[2] And reproducing in the Canal Zone the epidemiological practices that tamed yellow fever and malaria in Cuba meant that the United States succeeded where a great European power failed, thereby cementing the nation's place as a world leader and conqueror of the tropics.[3] That the Panama Canal was culturally and geopolitically significant for these reasons seems obvious. The United States drastically reshaped the landscape, the local economy, and diplomatic relations in Central America during this time.

The experience on the isthmus also transformed the institutions of American governance, as the United States unleashed a level of state control unlike anything in its history. By 1907, the Isthmian Canal Commission—the administrative body tasked to oversee construction efforts—

[1] Noel Maurer and Carlos Yu, *The Big Ditch: How America Took, Built, Ran, and Ultimately Gave Away the Panama Canal* (Princeton: Princeton University Press, 2011), 313–15.
[2] "The Greatest Engineering Work of All Time," *Scientific American: The Weekly Journal of Practical Information*, November 9, 1912, 390. The magazine argues that simple quantification failed to demonstrate the amount of engineering ingenuity it took to construct the canal and resorted to visual comparisons to other marvels, such as the "great pyramid of Egypt" [sic] and the Great Wall of China.
[3] Mariola Espinosa, *Epidemic Invasions: Yellow Fever and the Limits of Cuban Independence, 1878-1930* (Chicago: The University of Chicago Press, 2009), 117–22; Julie Greene, *The Canal Builders: Making America's Empire at the Panama Canal*, The Penguin History of American Life (New York, N.Y.: Penguin Press, 2008), 1–13; Marixa Lasso, *Erased: The Untold Story of the Panama Canal* (Cambridge, M.A.: Harvard University Press, 2019), 51–91.

assumed total power and control over the Canal Zone. George Goethals, the chief engineer and chairman of the body, admitted that the reforms to the governing structures "resulted in the establishment of an autocratic form of government in the Canal Zone."[4] Limitless authority on the isthmus contrasted severely with the invisibility that characterized the federal government's relationship to infrastructure projects during the Transportation Revolution.

But this change was not an anomaly that emerged from thin air. A confluence of internal and external developments shaped the level of centralization in Canal Zone administration. The French experiment in the 1880s was the most evident external influence to weigh on the minds of American administrators. The French pursued a more decentralized pathway, which dispersed control over construction to private syndicates. Failures by the French pushed the United States toward an organizational model as different as possible: a highly consolidated regime. But this significant state control also emerged alongside an administrative state that was developing in the continental United States. Spurred by the disruptions to the social fabric caused by widespread industrialization, the United States underwent a period of state-building that replaced the local with the national. To compensate for the new responsibilities of this political reorganization, the national state was imbued with a sophisticated bureaucracy and new powers.[5] Similarly, the Isthmian Canal Commission accumulated powers to meet its objectives, no matter the cost.

This sudden upheaval in American administration, one that so vigorously departed from its economic and political traditions, is best explained by analyzing the institutional history of the

[4] George W. Goethals, *Government of the Canal Zone*, The Stafford Little Lectures (Princeton: Princeton University Press, 1915), 50.
[5] Stephen Skowronek, *Building a New American State: The Expansion of National Administrative Capacities, 1877-1920* (Cambridge: Cambridge University Press, 1982), 12–13; Richard Bensel, *Yankee Leviathan: The Origins of Central State Authority in America, 1859-1877* (Cambridge: Cambridge University Press, 1990), ix–x.

Canal Zone. This thesis will track the evolution of Canal Zone administration during the American construction period, 1904–14, and juxtapose those developments against the backdrop of the French experiment of the 1880s. I argue that the French example is crucial for understanding why the Isthmian Canal Commission experienced multiple waves of consolidation and centralization of power until it devolved into a one-man regime. By understanding the historical context in which the United States federal government was operating, it is possible to rationalize the departure from economic and political tradition that the Panama Canal represented.

The history of Panama is not necessarily anchored to the history of the United States. Completion of the canal and its opening marked the end of a centuries-long quest to bypass the American continent and connect the Atlantic and Pacific Oceans. A Spanish royal road in the sixteenth century prefaced any modern attempt to transport goods and people between the two oceans. This nexus of trade sat at the center of the Spanish Empire, carrying two hundred thousand tons of South-American silver and making Panama one of the most affluent settlements in the New World.[6] The next watershed event came with the opening of the Panama Railroad in 1855, a response by New York investors to facilitate transit from the East Coast to the California Gold Rush.[7] Through the nineteenth century, Panamanians capitalized upon their unique location at the continental crossroads. They facilitated trade with European merchants; transported people and goods on mules and boats before the construction of the railroad; and provided meals and lodging for visitors on layover.[8] By 1914, when the United States facilitated travel between its

[6] Walter LaFeber, *The Panama Canal: The Crisis in Historical Perspective, Updated Edition*, 3rd ed. (New York: Oxford University Press, 1989), 3–5.
[7] Aims McGuinness, *Path of Empire: Panama and the California Gold Rush* (Ithaca, N.Y.: Cornell University Press, 2008), 6–10.
[8] Lasso, *Erased*, 56–65.

western and eastern seaboards, Panama had its own extensive history separate from the canal. The Panamanian story did not begin when the French launched their unsuccessful trench in 1880, when the United States facilitated revolution in 1903, or with the completion of the canal in 1914. Nor should Western intervention define the country's history. Rather than interpreting the decade as a period of unidirectional influence from the United States into Panama, the construction period was arguably more meaningful for what Panama taught the United States, particularly regarding its governing apparatuses.

These effects are apparent when considering how the canal affected global commerce. Savings on transportation costs and social savings were highly concentrated in the United States, and approximately sixty per cent of the traffic through the canal connected the United States to other countries or its domestic economies.[9] Trade between Europe, Asia, and Oceania—exclusive of the United States—more frequently traversed the Suez Canal. Analysis of shipping routes throughout the twentieth century revealed that the opening of the Panama Canal offered little commercial advantage outside the United States. Trade benefits across American regions and industries were also uneven: the West Coast's economy grew alongside the lumber industry in the Pacific Northwest and the petroleum industry in Southern California, at the expense of Southern lumber and Texas crude.[10] Economically, the Panama Canal had greater positive boons

[9] Maurer and Yu, *The Big Ditch*, 139–88; Ashley Carse, *Beyond the Big Ditch: Politics, Ecology, and Infrastructure at the Panama Canal* (Cambridge, M.A.: The MIT Press, 2014), 8–11; William R. Gianelli, "Panama Canal: Its Past and Its Future," *Journal of Professional Issues in Engineering* 115, no. 4 (October 1989): 350–51. Robert Fogel introduced the social savings metric to history as a means of interrogating the causal relationship between railroads and economic growth. His study compared the cost-savings of the railroad to the next best alternative to determine how essential the former was in stimulating market growth. See Robert Fogel, "A Quantitative Approach to the Study of Railroads in American Economic Growth: A Report of Some Preliminary Findings," *The Journal of Economic History* 22, no. 2 (June 1962): 163–97; Robert W. Fogel, *Railroads and American Economic Growth: Essays in Econometric History* (Baltimore: Johns Hopkins University Press, 1964).
[10] Maurer and Yu, *The Big Ditch*, 173–83.

for the United States and negative consequences for Panama, which did not enjoy increased standards of living or productivity despite the billions in trade that rushed across its borders.

And though global commerce certainly loomed large on the minds of the individuals associated with the planning and construction of the canal, an interoceanic canal also promised great value for the United States' martial capacity. Alfred Thayer Mahan, particularly his influential treatise, *The Influence of Sea Power Upon History, 1660–1783*, shaped much of the United States' imperial imagination. Mahan's argument for increased naval dominance rested on a canal that could easily transport fleets between oceans; any policy to increase gradually the number of ships on either ocean would bear a carrying capacity that limited its effectiveness in patrolling maritime borders.[11] Moreover, President Theodore Roosevelt's experiences with the United States Navy—made impotent by the country's strategic need to patrol simultaneously two oceans separated by continental masses—during the War of 1898 largely intensified his desire for the canal. In one infamous episode, the U.S. Navy directed the U.S.S. Oregon, then stationed in the Pacific Northwest, to join the other battleships in the North Atlantic. As it left Puget Sound, Washington, on March 6, 1898, the country's newspapers chronicled the ship's 17,500-mile voyage around North and South America. Its arrival eighty-one days later left a lasting impression on the national imagination, and the canal became a significant political issue in the presidential election of 1890.[12]

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[11] J. Michael Hogan, *The Panama Canal in American Politics: Domestic Advocacy and the Evolution of Policy* (Carbondale, I.L.: Southern Illinois University Press, 1986), 23–31; Alfred C. Richard, Jr., *The Panama Canal in American National Consciousness, 1870-1990* (New York, N.Y.: Garland Publishing, Inc., 1990), 51–54.

[12] Richard, Jr., *The Panama Canal in American National Consciousness*, 55–69; Henry L. Abbot, "The Best Isthmian Canal," *The Atlantic Monthly* 86, no. 518 (December 1900): 844. By 1902, the "needs and merits" of a canal in Central America were forgone conclusions. Both Democratic and Republican platforms in 1901 included statements asserting the importance of the construction and ownership of a canal, and this sentiment did not fade away by the time Congress discussed the issue of the isthmian canal in 1902. See *Cong. Rec.*, 57th Cong., 1st sess., 1902, vol. 35, pt. 1: 481, 513.

Although the United States introduced its attempts to construct the canal as a project to promote human civilization, the advantages of the Panama Canal were largely concentrated in the U.S. economy. Across the board—politically, commercially, structurally—the United States benefitted disproportionately and largely at the cost of its global neighbors. For these reasons, this analysis of the Panama Canal's history focuses primarily on the United States, even though more recent historiographical trends have favored attention on native Panamanians and other marginalized communities associated with the canal's history.

Historiography of the Panama Canal

Scholarship on the construction of the Panama Canal experienced two significant waves of interest: the first immediately after completion in the 1910s, and the second in the 1970s and 1980s as the United States and the Republic of Panama emerged from conversations to return the canal. Whereas the historiography of the 1910s primarily centered the engineering history of the canal, most work since the 1970s has been social, focusing on the ways the United States exploited its relationships with the Republic of Panama, its people, and the migrant labor force it imported from throughout the Caribbean.

The opening of the canal inspired a deluge of histories to publication. Americans who traveled to the isthmus for work recounted their experiences in monographs, detailing their contributions to this American achievement. Most notably, Ira E. Bennett crafted one of the first comprehensive histories of the Panama Canal in 1915.[13] Attempting to span the totality of the region's history, *History of the Panama Canal* began with Spanish contact and ended with the

[13] Ira Bennett was editor-in-chief of The Washington Post from 1908–33, consultant to the House Foreign Affairs Committee from 1949–51, and managing editor of The National Republic in the late 1950s. Perhaps most notably, Bennett was a key witness in the Teapot Dome scandal.

completion of the canal. Offering chapters on diplomatic history, legislative history, and engineering history, Bennett's account did little more than celebrate the American project, emphasizing the difficulties the landscape presented and the United States' ability to overcome such obstacles through sheer ingenuity and skill. Though it purported "to tell the plain, unvarnished story of Panama and the Panama Canal," *History of the Panama Canal* generally failed to offer a critical lens to the American enclave.[14] Rather, Bennett's Canal Zone was a stage for American triumph and power, little else.

But Americans were not the only ones to write histories of the canal during this time. Philippe Bunau-Varilla published his own account, based in the French perspective. Whereas Bennett and other historians often highlighted French scandal and failure in order to dramatize American success, Bunau-Varilla offered a counter-narrative, "to render justice to those who first tackled the immense problem and who gave their lives to solve it."[15] *Panama* portrayed the French mission as significantly more capable and competent than American historians had previously credited it. Rounding out the late-nineteenth-century narrative, Bunau-Varilla's text remained problematic as a secondary source. Playing a central role in this early phase of the canal, Bunau-Varilla often wrote highly of himself and his closest associates, including Ferdinand de Lesseps. Just as Bennett and his contemporaries failed to analyze the American story critically, Bunau-Varilla presented a heavily biased story of French genius that underplayed the extent of their failure on the isthmus.

Whether produced in the United States or France, the histories from this period require intense scrutiny. State officials likely privileged access to government documents and interviews

[14] Ira E. Bennett, *History of the Panama Canal: Its Construction and Builders*, ed. John H. Hammond et al. (Washington, D.C.: Historical Publishing Company, 1915), vii.
[15] Philippe Bunau-Varilla, *Panama: The Creation, Destruction, and Resurrection* (London: Constable & Company, Ltd., 1913), 12.

to historians who would relay glowing tales of the United States' mission in the region. If conflicts existed in their narratives, they served an almost fictive purpose to underscore and accentuate their accomplishments. These histories offered little critical analysis for American involvement and operated in a contextually specific, chauvinistic framework. And yet, these histories were useful still for their access to firsthand accounts, capturing the zeitgeist and excitement of much of Western opinion.

For the next few decades, literature on the Panama Canal waned until the subject reached a second crest in the 1970s, as the United States and Panama initiated formal negotiations to transfer ownership of the canal. President Jimmy Carter's talks with Panama's Omar Torrijos inspired historians to publish monographs to influence American public opinion. Perhaps the most significant piece of literature from that era was Walter LaFeber's *The Panama Canal*. The meat of LaFeber's analysis focused on the diplomatic relationship between the United States and Panama since the opening of the canal, but he ably explored approximately four hundred years of Panamanian history to establish firmly that the United States "did not buy the Canal area in 1903 and [did] not own it."[16] His first thesis effectively detached the Canal Zone from the American mainland and distinguished the Panamanian identity from the framework imposed by the United States since 1903. LaFeber then revealed the way the United States effectively stole the region from Panama by manipulating their treaties. His criticism was emblematic of a larger development in diplomatic history, which questioned the motives and effects of American reach across the Western Hemisphere. But for all its worth, LaFeber neglected thorough analysis of government institutions as he sought to bring the Wisconsin School to Panama.

[16] LaFeber, *The Panama Canal*, xi.

And while LaFeber offered a hypercritical analysis of the United States' history in the region, David McCullough presented a significantly more flattering portrait of an engineering triumph over nature. *The Path Between the Seas* seemingly disregarded broad trends developing in academic history, such as the New Social History and the Wisconsin School. McCullough's narrative appeared anachronistic, carrying sentiments and interpretations much closer to the histories from the 1910s than those of contemporary scholars. His focus on leaders and great men created the illusion of a construction effort supported unconditionally by every corner of the globe. And though McCullough sought "to give fitting scope to the subject, to see it whole… to discover underlying causes for what happened, to measure forces of national pride and ambition, to grasp the still untarnished ideal of progress," what followed was little more than an expansion and recasting of Bennett's thesis.[17] Nevertheless, McCullough's hagiography had massive popular reach and perpetuated the adulation bestowed upon that generation.

Social histories of the construction period since the 1970s have focused heavily on the people living in or near the Canal Zone and their lived experiences under the thumb of the American government. In *The Canal Builders*, Julie Greene gave primary attention to the migrant laborers that constructed the canal. Her treatment of the labor issue was quite comprehensive, since she also took the perspectives of upper management seriously—figures such as George W. Goethals and Theodore Roosevelt—as significant secondary actors whose actions and ideas had very real effects on the workers on the ground. Unlike other scholars in the tradition of the New Social History, Greene made good use of institutional sources to inform her analysis of working conditions in the Canal Zone. By understanding management, Greene recreated better scenes of how managerial decisions affected the work on the ground. Similarly,

[17] David McCullough, *The Path Between the Seas: The Creation of the Panama Canal, 1870-1914* (New York, N.Y.: Simon & Schuster, 1977), 12.

Marixa Lasso went beyond the fences of the Canal Zone to analyze the impact of the American presence on local Panamanian communities. Lasso investigated the ways in which notions of tropical backwardness were rooted in racism, and how they denied the Panamanians the capacity to govern themselves. To do this, Lasso relied heavily on travelogues from visiting Americans and on the personal correspondence of leading figures of the Isthmian Canal Commission.

Greene and Lasso were representative of contemporary scholarship, offering interesting analyses of elite sources to tell the stories of marginalized peoples whose voices have traditionally gone unheard. They read against the grain of officials' personal correspondence to uncover the voices of their underprivileged subjects. However, their neglect of institutional documents presented arguably incomplete portraits of the developing situation at Panama.[18] To Greene's workers or Lasso's Panamanians, Goethals might have been the federal government—a metonym of power and authority—but the state was much larger than Goethals alone. An entire organization, structured with federal bureaucrats in several offices and buildings in two different countries, operated behind and below Goethals. But he was also only one part of an even larger organizational structure—Taft's, and later Henry Stimson's, Department of War—which was itself only one part of an expanding Executive Branch. To Greene's workers and Lasso's Panamanians, however, the rest of the federal government might have been functionally absent. As far as they were concerned, Goethals was the executive; perhaps more ominously, Goethals was the state. Although there existed in these characterizations an element of truth, these

[18] In his historiographical article on early American finance, Stephen Mihm made an observation about the Marxist tendencies of the New Labor History specifically, but which might also be extrapolated to the broader New Social History: that the intense attention given to the working classes and other marginalized communities—and the consequent lack of attention to the capitalist class—did not produce more complete pictures of the financial landscape of the past than had the scholarship been centered entirely on the elites. See Stephen Mihm, "Follow the Money: The Return of Finance in the Early Republic," *Journal of the Early Republic* 36, no. 4 (Winter 2016): 760.

formulations simplified the motivations of American administrators. Such perspective—or lack thereof—accounts for the very different institutional analysis that this thesis offers.

Central to this project is the institutional analysis that Alfred Chandler promoted in his essay, "Business History as Institutional History." In this essay, Chandler argued that business history should adopt the practices and the intellectual traditions of institutional history. Published in 1971, his criticisms were aimed towards a field being rapidly consumed by the quantitative methods and approaches of the New Economic History. Chandler argued that business historians—in an effort to distinguish themselves from the cliometricians—should strive to analyze the centrality of their subjects in effecting social change. By looking past the individual and to their relationships to organizations and regularized patterns of action, Chandler argued that business historians could show how "they integrate [complex economic systems] with the political and social systems and the larger national culture."[19] This new focus on these structures and subjects' relationships to the larger structure would avail traditional historians to analyses that economic theory could not extract. However, Chandler's suggestions and methods might also be levied at the scholarship on the Panama Canal. And since the scholarship of the Panama Canal largely grew alongside the New Labor History and New Social History in the 1970s, it never truly experienced the top-down analyses that other historical subjects received.

Early elegies identified the boons that the Panama Canal offered to the world but erroneously attributed those victories to innate American genius. Likewise, later criticisms identified an oppressive regime that abused its local subjects but attributed those abuses to a mode of conflict theory between the managing and working classes. Neither wave in the historiography gave much weight to comparative, institutional analysis; both failed to see that the

[19] Alfred Chandler, "Business History as Institutional History," in *The Essential Alfred Chandler: Essays Toward a Historical Theory of Big Business*, ed. Thomas McCraw (Boston: Harvard Business School Press, 1988), 303.

French experience had an outsized impact on the United States. From the centralization and consolidation of a notoriously loose federal government emerged the Panama Canal and all its implications, positive and negative.

CHAPTER 2: ADMINISTRATION OF CANAL CONSTRUCTION

French Attempt and Administration

The French example in the 1880s left a powerful—albeit largely invisible—mark on the American attempt in the 1900s. Structural influence manifested itself not in continuities of French policies but rather complete inversions and rejections of those policies. Perceived scandal and corruption, which ultimately caused the downfall of the Compagnie Universelle du Canal Interocéanique de Panama, colored Americans' perceptions of the French and drove the development of an administrative structure that was as different as possible from the French model to avoid similar mistakes. Congressional debate preparing for American adoption of the canal project frequently evoked the trauma of French failure, warning against any administration that might spawn comparable corruption.

French interest in an isthmian canal developed out of the financial successes realized by the Suez Canal in the 1870s. By 1880, the value of company stock in the Suez Canal Company increased between four- and sevenfold as a result of the three million tons of goods that traveled annually through the canal.[20] Ferdinand de Lesseps, famous for his success in planning the sea-level canal in the Mediterranean, led the campaign to begin work on cutting the distance between the Atlantic and Pacific Oceans. De Lesseps was optimistic, asserting, "If a general who has won his first battle [Suez] is now asked whether he desires the chance to win another [Panama], he cannot refuse."[21] However, de Lesseps was not an engineer, nor did he rely primarily upon

[20] Bunau-Varilla, *Panama*, 24. The Suez Canal opened in 1869, initially seeing insignificant traffic upon completion. However, traffic steadily increased throughout the decade.
[21] Ferdinand de Lesseps quoted in Frank A. Gause and Charles C. Carr, *The Story of Panama: The New Route to India* (Boston: Silver, Burdett and Company, 1912), 8.

engineers. Instead, he preferred to work with "practical men;" de Lesseps erroneously assumed that their experiences in the Suez would naturally and easily transfer from the Middle East to Central America.[22] Confidence was ill-founded, moreover, since preliminary surveys conducted by the French were often haphazard, superficial, and based on very quick examinations during the isthmus' dry seasons.[23] As the face of the project, he attracted investment and confidence, but the lack of input and expertise from engineers doomed the project from the start.[24]

At half the distance, de Lesseps and his contemporaries believed cutting through the isthmus would be a significantly easier and much more cost-effective project than his earlier success in Egypt.[25] Cartography and other imprecise reproductions of the territory betrayed this simplified image of the region, and the French invested millions in what they believed would be a simple cut across the land. But nineteenth-century maps did not reveal adequately the dense vegetation, soil composition, climate, disease, or geographic contours that characterized the region, not to mention the hydrological differences in the Atlantic and Pacific currents that would trouble an exact replication of the Suez in Panama.[26]

To de Lesseps, the sea-level canal at the Suez was the gold standard against which all other canals ought to be measured. The lack of locks meant that traffic did not rely on labor power and could run at all hours of the day. However, the Suez Canal did not need any locks because the bodies of water that it connected—the Mediterranean Sea and Red Sea—were

[22] Ironically, France produced an exceptional corps of civil engineers and had multiple state institutions dedicated to churning out and refining highly skilled engineers. See McCullough, *The Path Between the Seas*, 128–30.
[23] McCullough, 101–23.
[24] Bunau-Varilla, *Panama*, 28–32.
[25] Darcy G. Grigsby, *Colossal: Engineering the Suez Canal, Statue of Liberty, Eiffel Tower, and the Panama Canal: Transcontinental Ambition in France and the United States during the Long Nineteenth Century* (Pittsburgh: Periscope Publishing, Ltd., 2012), 122. Whereas the Suez Canal traverses one hundred miles of land, the Panama Canal's projected layout cut through only fifty miles of land.
[26] Not only is the isthmus highly mountainous, whereas the Suez was almost entirely flat, but navigation would have been totally disorienting for people not expecting an eastward-facing Pacific Ocean and westward-facing Atlantic Ocean.

approximately level. By contrast, the waters of the Pacific Ocean could grow to be about twenty feet taller than the water of the Atlantic Ocean. In fact, surveys conducted by the United States identified this feature even before the French broke ground. Wary of de Lesseps' optimism, A.G. Menocal reported, "the spring tides amounting to 22 feet, would form such impediments to navigation, and so many serious difficulties, and doubtful elements in the execution and permanency of the work, that the plan had either to be modified, or abandoned altogether."[27] Such a feature was so crucial to consider that Menocal reiterated his rationale for the lock canal nearly thirty years later, when the United States contemplated which plan to pursue:

> It is well known that a sea-level canal pertaining to the nature of a strait is not possible at Panama. The tidal fluctuation of 20 ft. at the Pacific terminus, while the Atlantic end is practically tideless, makes imperative the introduction of a tide lock at Panama, by which ships can be locked up or down, into or from the canal, depending on the stage of the sea level at the time of taking or leaving the waterway. That tidal lock will limit the number of vessels passing through the canal just as much as a series of locks in a lock canal.[28]

And so even if the French had successfully constructed a sea-level canal, they still would have needed locks to manage the physics of converging oceans. De Lesseps's dream of a waterway that operated around the clock, without the need for lock operators, was flawed from the start.[29]

Even if the oceans were level, the French could not simply build a sea-level canal of any size. Scale was also important. The canal needed to be large enough to fit the typical ships of the day and ships with increased capacity of the future. Proper slopes, depths, and widths all had to be considered and ultimately excavated from the terrain. And the combination of the soil composition and climate made for a landscape of easily eroded dirt that would exacerbate the

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[27] A.G. Menocal, "Inter-Oceanic Canal Projects," in *Transactions of the American Society of Civil Engineers*, vol. 8 (New York: American Society of Civil Engineers, 1879), 313.
[28] A.G. Menocal, "The Panama Canal," in *Transactions of the American Society of Civil Engineers*, vol. 56 (New York: American Society of Civil Engineers, 1906), 197–98.
[29] Moreover, the time saved by implementing the sea-level canal amounted to approximately three hours for each trip. Menocal pointed out that this was an infinitesimal difference when considering the weeks that the canal saved manufacturers who no longer needed to circumvent South America. Menocal, "The Panama Canal," 198.

difficulties of the task of excavation. Engineers sought to convince de Lesseps and his team that these ambitions contradicted one another: a sea-level canal through the isthmus would like have to be small, and a sufficiently large one needed locks. But de Lesseps continued to tout the advantages of the sea-level canal, failing to weigh the environmental factors in Panama that made it impossible.

Third, the question of disease also appeared not to cross the minds of the French planners. But this could not be helped, and any first-mover on the isthmus would have had to endure the ravages of malaria and yellow fever. Not until 1898 would an English physician identify the *Anopheles* genus of mosquito as the vector for malaria; two years later, in 1900, Cuban and American scientists would identify and verify the vector of yellow fever to be the mosquito, *Aedes aegypti*.[30] The French had no idea they would be entering a miasma of death and disease. Despite the heavy loss of life, the French would continue to board ships destined for the isthmus with their romantic impressions of the adventure that awaited them: "Many a man of them had been happy to enlist, but felt his heart sink at the sight of the warm, low and misty shores of the deadly Isthmus."[31] The Compagnie Universelle established hospitals, but these did more harm than good without the necessary epidemiological knowledge, as "hospitals… became propagators and disseminators of disease."[32] Although unknown to most of the West, complete eradication of these life-threatening diseases on the isthmus was imperative for any success.

In fact, de Lesseps argued against concerns for the climate in an article for the *North American Review*, "As for the salubrity of the climate of Panama, whither I accompanied the committee with my family, the perfect health whereof we presented living proof on our return to

[30] Bennett, *History of the Panama Canal*, 103; McCullough, *The Path Between the Seas*, 409–11; Espinosa, *Epidemic Invasions*, 56–63.
[31] Bunau-Varilla, *Panama*, 44.
[32] Bennett, *History of the Panama Canal*, 109.

Europe shows how unjustly that beautiful climate has been condemned by those who knew nothing of it—Omne ignotum horrendum!"[33] Beside the fact that de Lesseps visited Panama during the dry season, there was considerable difference in the context for his visit and the context of a laborer expected to dig thousands of meters of dirt each day.

These promises were built on de Lesseps's insistence that his experience would transfer to the isthmus successfully. However, such guarantees were further undergirded by the questionable surveys conducted by Lucien Napoleon-Bonaparte Wyse and Armand Reclus in 1876 and by de Lesseps in 1879, both during the dry season. Neither expedition spent much time on the isthmus, thereby avoiding the difficult climate that laborers would have to endure over the course of a decade. French inexperience and insufficient inspection of the land made them woefully ignorant of the regional tidal patterns, landscape, and disease that would form the crucial geographic impediments to their sea-level project.

[33] Ferdinand de Lesseps, "The Panama Canal," *The North American Review* 131, no. 284 (July 1880): 77. Roughly translated, "the unknown is always a horrible thing."

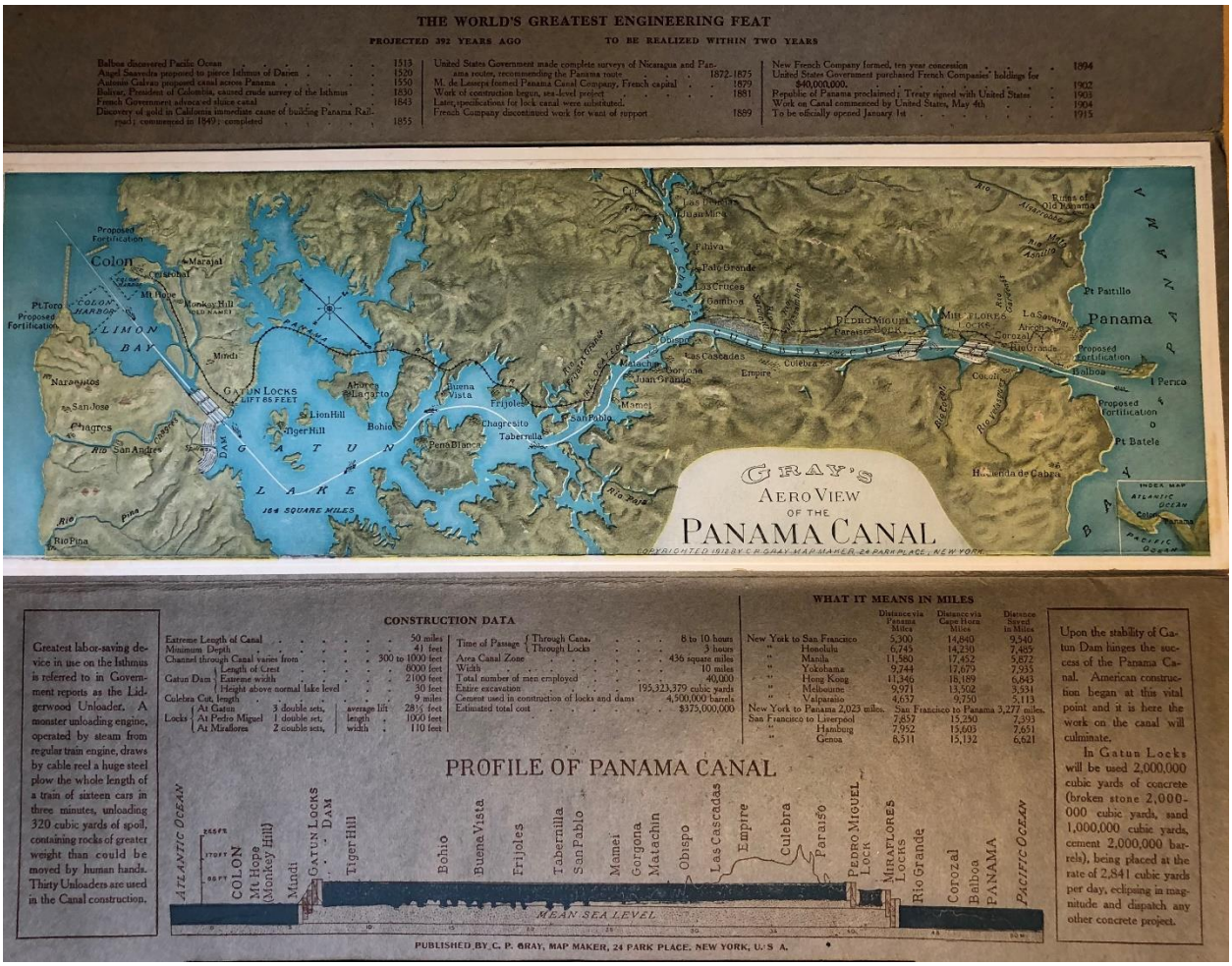

Figure 1. Gray's aero-view map of the Panama Canal, 1913. The terrain in Panama would have made an initial sea-level canal nigh impossible. Although a sea-level canal might have been attainable by making adjustments to an initial lock canal, the variations in altitude across the fifty mile stretch of land presented an insurmountable obstacle to de Lesseps' vision. This souvenir reveals the topographic variations in the Panamanian landscape that the French failed to survey adequately. Courtesy of the Hagley Museum & Library.

In fact, the language by Abel Couvreaux—de Lesseps's initial partner—in his advertisements to potential subscribers revealed the severe underestimation with which the French approached the project. Couvreaux alleged a sea-level canal was attainable with an investment of just over $100 million, estimating that the company would only have to excavate

one hundred million cubic yards of earth.[34] Initial miscalculations of the necessary work contorted the project's timetable, as de Lesseps would later boast that his plans would be completed with "six years… and 50,000 cubic metres per day, with 8,000 laborers, and the necessary machinery and steam-power."[35] Again, this was a serious overestimation of human labor capacity, given the work that would be necessary in Panama and the mechanical capacities of the available excavation equipment. By 1883, excavation would progress approximately 150,000 cubic meters per month, at the cost of 420 dead laborers by the end of the year.[36] As Philippe Bunau-Varilla asserted, these false promises from the outset established artificially and unreasonably high expectations for the productivity of labor on the isthmus and rapidity of returns in investment. Because these promises were built on the romantic fantasies of confidence men, they could not have been realistically kept.

By 1883, de Lesseps and Couvreaux, Hersent, et Compagnie—the private firm that oversaw construction to that point—terminated their contract. Jules Dingler assumed operational control over the Compagnie Universelle, extending a series of "minor contracts…to undertake a part of the excavation of the Canal," in the hopes that this would "stimulate the interest in the organisation of the works."[37] When Bunau-Varilla joined Dingler in 1884, he noticed that almost all of the work was contracted to various syndicates. Not long after, Dingler left the project and Bunau-Varilla took over in 1885. Dingler's tenure leading the project was mired in rumors of extravagance. Tales of company expenditures on palaces, luxury railcars, and exorbitant

[34] To scale Couvreaux's gross underestimation, at the time France and the United States exchanged hands, the French had already excavated eighty million cubic yards of earth and were nowhere close to being halfway complete on a sea-level canal.
[35] de Lesseps, "The Panama Canal," 76.
[36] For specific obstacles to the French project, see McCullough, *The Path Between the Seas*, 153–81.
[37] Bunau-Varilla, *Panama*, 33.

executive salaries spread throughout and beyond France.[38] The Dingler administration was the prelude to much larger, more significant scandal and allegations of corruption down the road.

Work on the Culebra Cut, the most difficult aspect of the proposed sea-level canal, only began in 1887. Bunau-Varilla had only then devised a way to excavate rock underwater, a process without which it would have been impossible to make significant gains in the region's rainy season. Moreover, by this time, Bunau-Varilla diverged from the original plan and aimed to construct a temporary lock canal. Bunau-Varilla still intended to complete a sea-level canal, but the rising costs and depleting funds made evident the need to open the canal to traffic as soon as possible.[39] Public confidence in the project had already suffered a steady decline by the time Bunau-Varilla implemented these changes, however, and subscriptions for company stock dwindled that very year. The Compagnie Universelle, on the verge of bankruptcy, needed more money and requested a three-month moratorium on debt payments, which the French Chamber of Deputies refused. By 1889, the company went into receivership; de Lesseps and other directors were arraigned on charges of corruption and bribery; and eighty million cubic yards of earth were excavated at a cost of $260 million and the lives of some thousands of workers.[40] In

[38] Bunau-Varilla, 33. According to Bunau-Varilla, these rumors materialized from the ill will of individuals whom Dingler offended with his rigorous and disciplined regime at Panama. They were determined to exaggerate key expenses, including his company cottage and company car. Bunau-Varilla sought a total vindication of the French effort in his five hundred-page apologetic. One should digest his French-chauvinist document with some skepticism, although his comparative analysis of French and American progress convincingly suggests graft was not as widespread on the ground as other sources would indicate.

[39] Bunau-Varilla, 79; James M. Skinner, *France and Panama: The Unknown Years, 1894-1908*, vol. 50, American University Series, IX (New York: Peter Lang, 1989), 31–38. There were also other reorganizations of the French effort upon Bunau-Varilla's takeover. The Compagnie Universelle issued much larger contracts than it had in the past to complete work to American Contracting and Dredging Company; Jacob; Artigue Sonderegger et Cie.; Vignaud, Barbaud, Blanleuil et Cie.; the Société des Travaux Publics et Constructions; and Baratoux, Leteiller et Cie. Most failed to meet their agreed-upon responsibilities.

[40] Gause and Carr, *The Story of Panama*, 13; Bennett, *History of the Panama Canal*, 103–4; Grigsby, *Colossal*, 125. According to Bennett et al., the trial revealed $100 million of the $260 million went towards remuneration of workers and work on the isthmus, while the remainder went to "salaries and office expenses," "loan flotations," and "expenses in Paris." As for corruption charges, the trial disclosed "$400,000 went for 'publicity;' $580,000 was charged to 'banking expenses;' and $280,000 was paid to politicians, journalists, and members of the chamber of deputies.'"

1894, the rights and property transferred to the Compagnie Nouvelle du Canal de Panama, which ran the project until the Americans intervened a decade later.

Several factors beyond the environmental played roles in the defeat of the French at Panama, perhaps least of which were problems of rampant corruption. At the core of the Compagnie Universelle's financial problems lay the extravagant expectations promised to the French people that the company could in no way fulfil and the American predisposition against French success at Panama. De Lesseps, eager to get the project underway as soon as possible and perilously wedded to the idea of the sea-level canal, forced upon the company a framework that was doomed to fail. Constantly lowballing the cost of the canal in the late 1870s to attract as many subscribers as possible, the promise of a canal for 300 million francs established a fantastical project that would recreate the financial profits of the Suez Canal.

De Lesseps and the other planners were unabashed boosters for the canal, who refused to entertain engineers' input and concerns. Loyalty to the sea-level plan led de Lesseps to hush the engineers, almost all of whom insisted a lock canal was the only way to construct the canal with the time and resources made available in the proposal. American and French engineers offered the few votes against the sea-level canal at the International Scientific Congress in 1879, and American engineers presented many publications questioning the very feasibility of a sea-level canal. At the conference, the sea-level canal in Panama received seventy-four yeas, eight nays, and sixteen abstentions. No French engineer voted for the proposal, and only one of the nineteen engineers to vote for the plan had ever been to Central America at all.[41]

[41] McCullough, *The Path Between the Seas*, 84–86. These figures were collected and analyzed by A.G. Menocal, an engineer from the American delegation who voted to abstain. The lone engineer with firsthand experience in the region was Pedro Sosa from Panama. McCullough's presentation of this data/information suggests votes for the plan were not based in expert opinion

American opposition to the French plan was not based entirely on concerns for the feasibility of a sea-level canal; initial criticisms predated corruption allegations and were tied to questions about whether or not a French canal violated the Monroe Doctrine. In some respects, the French attempt was doomed to fail, because the American inclination against the success and presence of a European power in the Western Hemisphere occluded the availability of that sizeable financial market. Moreover, the Compagnie Universelle directed approximately $1.5 million to the New York press, in order to advertise and promote American investment. These tactics fostered allegations of widespread corruption and graft. In order to get Americans to invest their money into the Compagnie Universelle, de Lesseps first needed to win American public opinion.[42] American interest in a trans-oceanic canal emerged, but the most popular plan was the route through Nicaragua—a direct competitor to de Lesseps' plan. In response, de Lesseps organized the Comité Américain to steer interest away from Nicaragua towards Panama.[43] This development also crept into congressional debate, as Senator John Morgan of Alabama called to question the investment into New York City, "where there was not one man who owned a dollar in stock."[44] Money diverted to this cause instead of equipment for the isthmus placed arguably undue emphasis on the corruption allegations.

Winning that public opinion would not be so easy, however. By 1880, President Rutherford Hayes asserted the country's position on "an American canal under American control," and each executive through Theodore Roosevelt upheld that policy.[45] But that sentiment was not totally indicative of expansionism and American chauvinism. Fresh on Americans' minds was the Second French intervention in Mexico, which had ended only thirteen

[42] Richard, Jr., *The Panama Canal in American National Consciousness*, 23–26.
[43] Richard, Jr., 28.
[44] *Cong. Rec.*, 57th Cong., 1st Sess., 1902., vol. 35, pt. 1: 22.
[45] Richard, Jr., *The Panama Canal in American National Consciousness*, 26.

years prior.[46] Fears of French troops amassing on Central American beaches to protect the canal led to fears that the European powers would find a foothold to interrupt democracy in the West and eventually transform Colombia into a French province. Beyond geopolitics, Americans feared that French control might also revive the restrictions on commercial activities that the United States experienced at the apogee of the Spanish empire in the eighteenth and early-nineteenth century.[47] According to the author of "The Monroe Doctrine and the Isthmian Canal," an American-owned canal that adhered to the declarations of the Monroe Doctrine did not necessarily imply hegemony by the United States over all political and commercial activities in the Western Hemisphere. Rather such a canal was meant simply to exclude European influence and domination from taking root in the Americas, in any capacity or shade whatsoever. And so Hayes' policy might have carried a hint of expansionist rhetoric, but it was also rooted in a general desire to keep the hemispheres politically separated.

Faulty expeditions and analyses produced delusions of grandeur among de Lesseps and his men, and there were no mechanisms to hold them accountable. As such, they were free to make any promises if it meant that they could get started on their dreams. Success at the isthmus was contingent on the eradication of the mosquito problem, improved excavating equipment, and—most importantly—a structure that would prioritize the speedy construction of the canal at the expense of private profit or individual liberty.[48] The French were not prepared for any of this.

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[46] Richard, Jr., 26–27; Alfred Williams, *The Inter-Oceanic Canal and the Monroe Doctrine* (New York: G.P. Putnam's Sons, 1880), 107–8.
[47] "The Monroe Doctrine and the Isthmian Canal," *The North American Review* 130, no. 282 (May 1880): 501–4; Williams, *The Inter-Oceanic Canal and the Monroe Doctrine*, 109–11. Williams predicted the United States would be the greatest patron of a canal in the Americas, estimating "more than two-thirds of that commerce [would] be the commerce of the United States."
[48] "Construction of the Great Panama Canal," *Daily Pottstown Ledger*, February 1, 1913.

American Modifications to French Administration

From the French experiment, the United States gleaned some key lessons. Almost immediately obvious was the fact that construction was placed almost entirely under government control. Debates in the House and Senate expressed distrust of private interests and faith in the accountability of the federal government, a clear political and ideological shift from the United States' history in developing its domestic infrastructure and transportation throughout the nineteenth century. This longer history pointed to a relatively invisible federal government that seldom involved itself in the construction of roads, highways, bridges, canals, or railroads.

State governments and private firms, often cooperating with one another in a mixed-enterprise system, took charge of funding and administering these construction efforts during the Transportation Revolution. Notably, the state of New York constructed the Erie Canal without financial aid from the federal government, relying totally upon state funds.[49] The success of the Erie Canal sparked a national craze, driving the United States into the Canal Era, which lasted through the 1840s. As new canal projects cropped up across New England, the Mid-Atlantic, and the western territories, states incurred debts of over $60 million to finance these proposals.[50] Beyond financing and preparation, the actual administration of these construction efforts was seldom left to government officials, bureaucrats, or even formally trained engineers. Benjamin Wright and James Geddes, who led the Erie Canal project, were not engineers but private citizens trained in law and surveying.[51] Other canals that sought to compete with the Erie also

[49] George Rogers Taylor, *The Transportation Revolution, 1815-1860* (New York, N.Y.: Rinehart & Company, Inc., 1951), 33–34.
[50] Taylor, 50–52.
[51] Taylor, 34; Carter Goodrich, *Government Promotion of American Canals and Railroads, 1800-1890* (New York: Columbia University Press, 1960), 54.

relied on mixed enterprise. Drumming up funds from their constituents, primarily through the sales of bonds, state governments then contracted private firms to manage construction.

Federal assistance was not as immediately recognizable as the pecuniary investments of the individual states, but the federal government was not totally absent either. The federal government invested over $3 million into the stocks of canal companies, which was much smaller than the states' investments. However, the federal government made its greatest contributions more subtly in the form of land improvements, surveys, and land grants—approximately four million acres of public domain.[52] But this level of participation by the federal government was not solely restricted to canals, as Washington took similar measures to improve natural waterways across the western United States and to facilitate the construction of roads and railroads.[53] This invisibility was based primarily on the federal division of powers and a reluctance by the federal government to step into the jurisdictions of individual states.[54] With fears of the extension and consolidation of federal powers prevalent throughout the country and confidence in states' resources, many were reluctant to invite the federal government into these issues of internal improvement. Throughout the Transportation Revolution, the federal government often played a supporting role to the state governments or to private firms.

Here was the fundamental shift in attitude between the federal government operating during the Transportation Revolution and the government that operated between 1904 and 1914. Federal control of construction at the turn of the twentieth century demonstrated a disregard for precedent and was emblematic of a sea change in U.S. politics, as society transformed and departed from the traditionally liberal values of individualism and free enterprise toward a

[52] Taylor, *The Transportation Revolution*, 54.
[53] Taylor, 24–26, 67–69, 90–96.
[54] Goodrich, *Government Promotion of American Canals and Railroads*, 44–46.

greater reliance on the coordinated powers of government. In the House, Congressman John Bell of Colorado identified this shift:

> There never has been a time until now when it was possible to build a canal by the American Government. A half a century ago the idea of spending $200,000 on this waterway would have been impossible. Not only that, but one decade ago, two decades ago, if we had had the money, it would have been utterly impossible to get an American Congress to consent that the Government of the United States might build and own a great interoceanic canal.
>
> The idea at the time of individualism was so great, and the fear of paternalism so great, that it was impossible; but we all agreed that the Government of the United States should build this canal. We are all agreed that the Government should own and operate the canal. The only question at issue seems to be whether we shall take one route or the other.[55]

Prior to the turn of the century, government seemed to have no legitimate place in economic activity or commercial development. This was not a matter of finance, as Bell illustrated, tied to questions of whether or not the United States could afford the canal. Americans—or their politicians at the very least—seemed to grow more comfortable with the idea of an engaged and active federal government. Changing attitudes coincide with the development of a growing national administrative state after the Civil War.

New faith in government might be attributed to the transformative process of political development that characterized the period. As the United States developed a sense of national statehood, it abandoned its more regionally oriented "state of courts and parties."[56] Central to this retreat from the antebellum state system were the significant social transformations that resulted from Northern industrialization.[57] So emerged a professional bureaucratic apparatus and the

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[55] *Cong. Rec.*, 57th Cong., 1st Sess., 1902, vol. 35, pt. 1: 520.

[56] This early formation of the state was built on the rules and manners established by party politics and court procedure. Without a strong national body, party organizations standardized behaviors across distant communities. Working beyond the power of the parties were the courts, which restricted and delimited the powers of the adolescent state over society by interpreting the laws and developing a uniform system of jurisprudence. See Skowronek, *Building a New American State*, 24–31.

[57] Skowronek, 34–35; Bensel, *Yankee Leviathan*, 15–17. Skowronek and Bensel attribute to industrialization the impetus for state-building in the United States. Whereas Skowronek points to a democratic desire to centralize power to deal with the excesses of industrialism, Bensel points to Northern industry's "drive to unify the national

reforms to the civil service necessary to uphold that apparatus. Reforms to the federal government—of varying success—characterized the late-nineteenth century. The Pendleton Act and the Civil Service Commission presented the silhouette of a government dedicated to assigning administrative jobs on the basis of merit, though the extent to which it was successful at bringing intelligent civil servants to government is subject to dispute.[58] Whether or not patronage or merit actually won candidates government appointments, the government appeared to be distancing itself from the more blatantly corrupt spoils system instituted by the Jackson administration. Administrative agencies designed to regulate American capitalism emerged on the scene at this time as well. With the adoption of the Interstate Commerce Act in 1887 and the Sherman Antitrust Act in 1890, the federal government was granted new tools to interact with and direct the economy. These developments in the federal governing infrastructure point to a population concerned with the growing power of industry. Although these patchwork policies often ended up neutered, they signaled a shift toward government and away from industry that would gain more traction at the turn of the twentieth century.[59]

This new attitude towards government construction of the Panama Canal was brought about not only by internal developments but also the impact of external French failure. The dramatic French failure left an impression on many American statesmen, and the country was determined not to repeat French mistakes at all costs. The *Congressional Record* highlights the impact that the failure had on public consciousness. Senator Morgan was a particularly harsh critic, although admittedly much of this stemmed from his own preference for a canal through Nicaragua. He chastised de Lesseps and his colleagues for the way they duped their compatriots;

marketplace" and rein in Southern separatism. For one, industry supported a central state to simplify the national market; for the other, popular demand created the central state as a foil to industry.

[58] Skowronek, *Building a New American State*, 68–82.

[59] Skowronek, 165–66.

according to Morgan, the scandals of the Panama Canal "disgusted France… until she has shuddered like a sick baby at the enormity of the villainies perpetrated by her own people."[60] Were this not enough, he also lambasted the French receiver for trying to unload its failed project and plans onto the United States. Arguing against the purchase, he described the Panama Canal as "a job that is gangrened with corruption from its beginning to its end."[61] But similar rhetoric cropped up in the House. Congressman William Richardson of Alabama, arguing against the purchase of the canal rights in Panama, asserted that a "horde of swindlers… brought shame upon a noble people" and that those "frauds disgusted the world and came near dismembering France."[62] This negative commentary did not abate as the Nicaragua-Panama debates ended, however. Politicians continued to evoke similar sentiments into debates through 1904, as they sought to ratify the treaty with Panama.

The Report from the Committee on Interoceanic Canals captured a zeitgeist for U.S. control over a seaway across Central America. Support was not a partisan issue, as both political parties included affirmative statements in their platforms in 1901.[63] Among the benefits listed in the committee report included, "the freedom of our commerce, the military protection of our coasts and insular possessions, and the security of our people and their property in the conduct of their intercourse and their trade between the oceans."[64] The report characterized these benefits as boons for all the countries in the Americas, understanding the United States to be part of a larger

[60] *Cong. Rec.*, 57th Cong., 1st Sess., 1902, vol. 35, pt. 1: 22.
[61] *Cong. Rec.*, 57th Cong., 1st Sess., 1902, vol. 35, pt. 1: 22.
[62] *Cong. Rec.*, 57th Cong., 1st Sess., 1902, vol. 35, pt. 1: 485.
[63] *Cong. Rec.*, 57th Cong., 1st Sess., 1902, vol. 35, pt. 1: 481. The Republican Party asserted, "We favor the construction, ownership, control, and protection of an isthmian canal by the Government of the United States. New markets are necessary for the increasing surplus of our farm products; every effort should be made to open and obtain new markets, especially in the Orient, and the Administration is to be warmly commended for its successful efforts to commit all trading and colonizing nations to the policy of the 'open door' in China." The Democratic Party asserted, "We favor the immediate construction, ownership, and control of the Nicaraguan Canal by the United States."
[64] Committee on Interoceanic Canals, Report to Accompany H.R. 2538, 56th Cong., 1st Sess., 1900, S. Rep. 1337, 2.

hemispheric community with a shared history. Moreover, the committee argued that the commercial benefits would reach past the Americas and positively affect every corner of the globe, thereby bringing the entire world closer to the sanctuary of peace.[65]

However, this sentiment that the Committee seemed to capture was not entirely optimistic in its outlook. It warned the country and the world to avoid the pitfalls that consumed the French in the 1880s. Within this otherwise optimistic introduction existed the looming threat of "syndicates of private persons," prepared to funnel the benefits of such a canal among themselves and to profit at the expense of society.[66] The document exposed a fear of corruption and of robber barons, whose "corrupt contracts for alleged materials and machinery [collapsed the whole fabric] and left many thousands of people in bankruptcy, and France… in shame and confusion."[67] In their biography of George Goethals, Joseph Bucklin Bishop and Farnham Bishop explained just how long this sentiment lasted. For the very first year, Congress offered paltry appropriations:

> For instead of being given plenty of money and a free hand to organize its campaign against the jungle, the [Isthmian Canal Commission] was expected to make bricks, not only without straw but almost without clay. Instead of realizing that millions of dollars' worth of modern machinery must be bought, the dirt and disease of four centuries scrubbed away, and a great army of men enlisted, drilled, housed, and fed, Congress could think of nothing but the danger of another scandal like that of the [Compagnie Universelle], and kept doling out the money in grudging driblets…[68]

On the one hand, the canal could stand for human progress and ingenuity, for world peace and prosperity. On the other, the people who would construct it would have to be held accountable and always keep the public welfare in mind.

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[65] Committee on Interoceanic Canals, Report to Accompany H.R. 2538, 56th Cong., 1st Sess., 1900, S. Rep. 1337, 3.
[66] Committee on Interoceanic Canals, Report to Accompany H.R. 2538, 56th Cong., 1st Sess., 1900, S. Rep. 1337, 4–5.
[67] Committee on Interoceanic Canals, Report to Accompany H.R. 2538, 56th Cong., 1st Sess., 1900, S. Rep. 1337, 5.
[68] Joseph B. Bishop and Farnham Bishop, *Goethals: Genius of the Panama Canal: A Biography* (New York: Harper & Brothers Publishers, 1930), 126–27. Joseph Bucklin Bishop was newspaper man whose positive editorials of Roosevelt won him a seat in the Isthmian Canal Commission as the body's executive secretary in 1904.

Senate reports discussed more than public sentiment for the creation and necessity of an isthmian canal. Questions about the ideal route, whether the path should be cleared in Nicaragua, Panama, or Darien, consumed most of the debates. In fact, the Walker Commission—the First Isthmian Canal Commission sent to survey and report on these three proposals—recommended that the United States pursue the Nicaragua option. It took into account the plan's feasibility, the United States' strained relations with Colombia, and the estimated costs of assuming the assets of the Compagnie Nouvelle du Canal de Panama.[69] In addition to fears of crony capitalism, the Panama Canal as proposed by the Compagnie Nouvelle threatened monopoly over all transportation between the Atlantic and Pacific Oceans that the federal government, by way of being only a minority shareholder, would be powerless to control. This triggered another fear of unbridled capitalism threatening public utility.[70]

Otherwise, the memory of scandal was simply overpowering and left too indelible a stain on the region as a whole, prejudicing congressmen against the route. Congressman Robert Page Morris of Minnesota captured this prejudice quite clearly:

> I had in mind the enormous losses which had occurred in the operations of the companies which had undertaking in its construction. I had in mind the foul scandals which had attached to it. I had in mind the fact that it had driven the great de Lesseps to prison and to his grave a disgraced and heart-broken man. I had in mind the many millions of dollars that had been squandered in bribes and in what is known as promotion and financing, which are but other names for the process of exacting two dollars for furnishing one. And so I say I had no faith whatever in the Panama Canal project, or in its feasibility or practicability.[71]

The Americans' emphasis on organization that privileged experience and expertise contrasted with the mismanagement that led to the French failure. Where de Lesseps trusted his

[69] Committee on Interoceanic Canals, Report to Accompany H.R. 2538, 56th Cong., 1st Sess., 1900, S. Rep. 1337, 57–73.
[70] Committee on Interoceanic Canals, Report to Accompany H.R. 2538, 56th Cong., 1st Sess., 1900, S. Rep. 1337, 73.
[71] *Cong. Rec.*, 57th Cong., 1st Sess., 1902, vol. 35, pt. 1: 515.

practical men, the United States would look to engineers to lead the way. Congressman Richardson pointed to the subtle differences between the House and Senate bills: the former would have placed the project entirely under the President and Secretary of War, while the latter opened the governing body to citizens, neither in the hands of private syndicates.[72] Richardson clearly referenced "the great scandal that sprung from the skillful jobbery and plunder in the work on the Panama Canal… In the bill now under consideration responsibility is placed upon the President and the War Department, and this is a guaranty that our interests will be watched."[73] This preference for government officers and the simultaneous move away from men of business demonstrated the changing outlook on what might constitute efficient, accountable administration.

Before approving purchase of the Panama, Nicaragua, or some other route, Congress performed its due diligence and established two commissions to assess these routes in 1897 and 1899. The Nicaragua Canal Commission prepared a comparatively small survey, authorized to assess the feasibility of a canal. President William McKinley appointed John G. Walker and two military engineers to report on the environment. Congress granted the commission $150,000 to complete this task.[74] Evaluating the geography and environmental physics, comparing the costs of similar canals across the globe, projecting canal dimensions, the Nicaragua Canal Commission gave an estimate of $134.8 million with very few difficulties.[75]

The commission established to assess Panama was much grander. On March 3, 1899, Congress authorized the President to establish the Walker Commission to "make full and

[72] *Cong. Rec.*, 57th Cong., 1st Sess., 1902, vol. 35, pt. 1: 483.
[73] *Cong. Rec.*, 57th Cong., 1st Sess., 1902, vol. 35, pt. 1: 483.
[74] John G. Walker, Peter C. Hains, and Lewis M. Haupt, *Report of the Nicaragua Canal Commission, 1897–1899* (Baltimore: The Lord Baltimore Press, 1899), xi.
[75] John G. Walker, Peter C. Hains, and Lewis M. Haupt, 45–6.

complete investigation of the Isthmus of Panama with a view to the construction of a canal by the United States across the same to connect the Atlantic and Pacific Oceans…with a view to determining the most practicable and feasible route for such a canal, together with the proximate and probable cost of constructing a canal" at either route.[76] Of great importance was the matter of cost: that the government find for the American people the best possible deal on the canal. The statute also emphasized the appointment by the President of engineers, military and civilian, to the commission.[77] On June 10, 1899, McKinley appointed Rear-Admiral John G. Walker to preside over the commission. Alongside Walker, McKinley appointed four civil engineers, expert in canals, bridges and waterways; two Army engineers; one economist, expert in transportation; and one Democratic Senator. Members were appointed, and more importantly trusted, based on their expertise and "eminence in [their] profession," which offered "a sufficient guaranty of the energy and ability" they could bring to the policy commission.[78]

Whereas the French blindly entered Panama with arrogantly lofty ambitions, the United States seemed resolved to set for itself more realistic goals based on the recommendation of experts and on thorough examination of the proposed terrains. In addition to the individual commissioners, whose expertise could be verified, the Walker Commission emphasized the employment of "competent assistants, whose education and training had fitted them for the special work to be done."[79] Whereas the Wyse-Reclus Expedition spent six months in the region, the Walker Commission expended $1 million and sent a total force of 850 engineers and laborers

[76] "An Act Making appropriations for the construction, repair, and preservation of certain public works on rivers and harbors, and for other purposes," Pub. L. No. 425, 30 U.S. Statutes at Large (1899), 1150. There would be three commissions given the title, "Isthmian Canal Commission," between 1899 and 1914. To avoid confusion, the first iteration—sent to evaluate the feasibility of a canal through Panama—will be referred to as the "Walker Commission."
[77] An Act Making appropriations for the construction, repair, and preservation of certain public works on rivers and harbors, and for other purposes, 1150.
[78] Report of the Isthmian Canal Commission, 1899–1901, 57th Cong., 1st Sess., 1901, S. Doc. 54, 12.
[79] Report of the Isthmian Canal Commission, 1899–1901, 14.

over two years to survey the routes and employ cost-benefit analysis of either route, with particular eye to the industrial, commercial, and military value.[80]

The Walker Commission determined that a canal would have important benefits to the American agricultural, mineral, lumbering, and manufacturing industries during the period of construction.[81] This report echoed the popular economic justification for expansionism, which emphasized the importance of exporting industrial output to relieve domestic pressures.[82] But the commission report also looked to longer-term benefits. The Walker Commission predicted the massive boons to the "domestic and foreign trade of the Pacific Coast States," which at the time were "burdened with especially heavy transportation costs."[83] The commission also predicted proportionally greater benefits to American trade than to European trade and emphasized the canal's military value.[84] At peace, the United States could patrol both seaboards with ease; at war, the United States could deploy its entire fleet in one theatre without necessarily abandoning the other.[85] However, the commission also contended that the canal would be useless to the U.S. Navy if any other nation controlled it.[86]

More important than the benefits were the costs of maintaining a neutral canal. Because the Panama route would be 134.57 miles shorter, thereby requiring fewer locks, the Walker Commission estimated a canal in Nicaragua would cost the United States $3.3 million annually in maintenance and operation against the Panama Canal's estimated $2 million.[87] The Panama

[80] Report of the Isthmian Canal Commission, 1899–1901, 9, 14;
[81] Report of the Isthmian Canal Commission, 1899–1901, 243.
[82] William Appleman Williams, *The Tragedy of American Diplomacy*, 4th ed. (New York: W.W. Norton & Company, 1988), 28–57; LaFeber, *The Panama Canal*, 12–13.
[83] Report of the Isthmian Canal Commission, 1899–1901, 244; Maurer and Yu, *The Big Ditch*, 173–83.
[84] Report of the Isthmian Canal Commission, 1899–1901, 251; Maurer and Yu, *The Big Ditch*, 140–45; Carse, *Beyond the Big Ditch*, 8–9.
[85] Report of the Isthmian Canal Commission, 1899–1901, 252.
[86] Report of the Isthmian Canal Commission, 1899–1901, 253.
[87] Report of the Isthmian Canal Commission, 1899–1901, 256, 260.

route also had the benefit of holding harbors at each terminus and a functioning railroad alongside it, which would save the United States two years' work.[88] The work left to be done at Panama amounted to $144.2 million; at Nicaragua, it would cost $189.8 million. However, these figures omitted the added costs of negotiating for contracts and acquiring the concessions from either government. Given the Colombian government's hostility and the financial precarity of the Compagnie Nouvelle, such concessions were estimated to cost an additional $109.1 million.[89] Seeing how improbable acquiring concessions for $40 million would be, the Walker Commission recommended the Nicaragua route. And so, unlike de Lesseps and the French, the United States dedicated four years and $1 million to survey Central America properly, heeding the advice and expertise of its best engineers to devise realistic estimations of costs and benefits.

Finally, the question of whether to build a sea-level canal or a lock canal symbolized the Americans' last lesson from the French experience. Unlike de Lesseps, who was helplessly wedded to the efficiencies of the sea-level canal, the United States did not pigheadedly plan to construct one type of canal or another. The lock canal was not a forgone conclusion by the time the United States purchased the concession from the Compagnie Nouvelle. From 1904 to 1905, John F. Wallace, the Chief Engineer, pushed the Isthmian Canal Commission to continue digging slowly with the French equipment left in the Canal Zone. In fact, Wallace advocated the French sea-level canal and proceeded to dig slowly, but failure to heed the sanitation lessons learned in Cuba meant yellow fever ravaged his camps.[90] In fact, the Isthmian Canal Commission

[88] Report of the Isthmian Canal Commission, 1899–1901, 259.
[89] Report of the Isthmian Canal Commission, 1899–1901, 262–63.
[90] Walter G. Ross and Panama Canal Societies of the United States, *Souvenir Yearbook and Directory, 1947: Facts and Fancies Up to Date* (Washington, D.C.: The Panama Canal Society, 1947), 20; Rory McGovern, *George W. Goethals and the Army: Change and Continuity in the Gilded Age and Progressive Era* (Lawrence, K.S.: University Press of Kansas, 2019), 89–92.

understood this impartiality to be the Americans' advantage over the French. The body's first annual report to Congress indicated that

> while the French surveys were scientifically undertaken and conducted, yet whenever their results showed that the project which they were intending to develop was too costly or would require more time than was available, the object for their continuations no longer existed… The work as now proposed is free from these limitations, and its declared object is to give the most convenient and safe transit from ocean to ocean for the ships of to-day and the visible future…[91]

Although members of the Commission had misgivings about the feasibility of a sea-level canal, it was never ruled out before the facts were presented. John Stevens assumed control upon Wallace's resignation. Only in 1906, after a year of debate among the Board of Consulting Engineers, did the United States resolve to abandon the sea-level canal and construct a lock canal.

On June 24, 1905, Roosevelt enacted an executive order to establish an international Board of Consulting Engineers, "for the purpose of considering and deciding the question of type of canal."[92] The Board offered two reports, the majority report in favor of a sea-level canal and the minority report in favor of a lock canal, from which the Isthmian Canal Commission elected to recommend to the Secretary of War the lock canal proposal. Four American engineers joined the five Europeans in defending the sea-level canal; five Americans supported moving toward the lock canal. The majority report's argument relied heavily on the idea that locks would impede the flow of traffic through the canal, which would present not only commercial disadvantage but also safety concerns. Fears that these locks could break and leave large ships

[91] Isthmian Canal Commission, *Annual Report of the Isthmian Canal Commission for the Year Ending December 1, 1904* (Washington: Government Printing Office, 1904), 39.
[92] Isthmian Canal Commission, *Annual Report of the Isthmian Canal Commission for the Year Ending December 1, 1906* (Washington: Government Printing Office, 1906), 13. The executive order named nine Americans and five Europeans to the Board.

stranded, which had affected the St. Mary's Falls Canal in Michigan, engrossed the majority.[93] The minority, on the other hand, found the sea-level canal simply impossible given the enormity of the River Chagres and Gatun Lake.

Stevens found the majority report an "impracticable futility;" to Stevens, "the dimensions, alignment and general character of the waterway as recommended by the international consulting board of engineers were sufficient in themselves to condemn it."[94] Whether or not the locks were susceptible to damage, Stevens was unsatisfied with the majority's proposal to clear the River Chagres. Such a feat would have required a dam in Gatun Lake high enough to control the river, but borings from the previous year indicated that the lake was much too deep and the rock beneath too shifty to construct a sufficient dam.[95] Notably, whereas Stevens rested his argument upon the sheer feasibility of the sea-level canal, the minority report also emphasized the lock canal's cost-effectiveness.

Also relevant to Stevens' decision to support the minority recommendation was the language of the Spooner Act. Section 3 of the statute directed the Isthmian Canal Commission to create a canal "of sufficient capacity and depth as shall afford convenient passage for vessels of the largest tonnage and greatest draft now in use, and such as may be reasonably anticipated."[96] With this condition in mind, Stevens objected to the majority's "narrow tortuous ditch, only 150 ft. in width, with jagged rock sides."[97] All that was left to do was to convince Roosevelt, whom

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[93] Board of Consulting Engineers, *Report of the Board of Consulting Engineers for the Panama Canal* (Washington: Government Printing Office, 1906), 62.
[94] John F. Stevens, *An Engineer's Recollections* (n.p.: McGraw-Hill Publishing Company, Inc., 1936), 40–41. Stevens noted in his memoir that he entered the conversation partial to the sea-level proposal. The facts presented to the Isthmian Canal Commission in the Board's report, however, demonstrated to him that the geography would necessitate a sea-level canal that would be half a mile wide.
[95] Board of Consulting Engineers, *Report of the Board of Consulting Engineers*, 68-69; Stevens, *An Engineer's Recollections*, 41.
[96] "Spooner Act," Pub. L. No. 183, 32 U.S. Statutes at Large (1902), 482.
[97] Stevens, *An Engineer's Recollections*, 40.

Stevens believed partial to the sea-level plan. Roosevelt, keeping an open mind, listened to Stevens and recommended to Congress the lock canal.[98]

Between 1899 and 1902, the federal government discussed and prepared a framework for American administration of canal construction, using the French model as antithesis. Driven by the rapid deterioration of de Lesseps's legacy and the implications of his failures, the United States abandoned its tradition of loose, inactive participation in economic affairs. Rather than take a minor role in construction as it had done in the Transportation Revolution, the United States assumed a grander position. Reliance upon the federal government instead of private syndicates, reliance upon engineering expertise, thorough analyses of the terrain, and a flexibility of mind set the Isthmian Canal Commission on a solid foundation that de Lesseps and his men lacked. These features of American administration would be amplified over the course of the next decade of the Isthmian Canal Commission's rule over the Canal Zone. The United States, in the middle of a political transformation, took advantage of its dynamic situation and instituted in the Canal Zone a system of government that more highly centralized than anything that had previously existed in its history.

Evolution of the Isthmian Canal Commission in the Canal Zone

The Isthmian Canal Commission that opened the Panama Canal to the world in 1914 was the third of its name, and its power and authority were considerably different from its predecessors. As mentioned previously, the first Isthmian Canal Commission was designated by Congress to examine and compare the proposed canal routes through Nicaragua and Panama.

[98] Stevens, 42.

The second and third commissions formed the executive bodies in charge of the American project in the Canal Zone.

Congress passed the Spooner Act to authorize the purchase of the rights to the Panama Canal for $40 million from the Compagnie Nouvelle. After some negotiation and revolution, the United States and the newly created Republic of Panama entered into an arguably lopsided convention that granted the United States sovereign powers over the Canal Zone. In return, the United States guaranteed Panama's independence from Colombia and agreed to pay Panama $10 million.[99] The United States ratified the treaty on February 26, 1904.

The Spooner Act of 1902 also laid the groundwork for the structure of the Isthmian Canal Commission and bestowed in the body its broad powers over the Canal Zone. Section 3 of the act empowered the President—through the Isthmian Canal Commission—with the authority over all aspects of construction: regional sanitation; labor control; the purchase and importation of materials; internal accounting; housing; policing; the administration of justice; and general management.[100] Section 7 spelled out the qualifications for appointment to the commission, specifying that "of the seven members… at least four of them shall be persons learned and skilled in the science of engineering."[101] It also included a requirement for the appointment of "at least one officer of the United States Army, and at least one officer of the United States Navy… being either upon the active or retired list of the Army or of the Navy."[102] From the outset, the Isthmian Canal Commission was a civilian organization, the administration and leadership of which was based primarily on engineering skill and expertise. And though the United States

[99] "Convention between the United States and the Republic of Panama for the Construction of a Ship Canal to Connect the Waters of the Atlantic and Pacific Oceans," U.S. Statutes at Large § 2 (1903), 2234–35.
[100] Spooner Act, 482.
[101] Spooner Act, 483.
[102] Spooner Act, 483. Congress included these requirements to ensure the commissioners had some familiarity with the institutional structure of the Department of War and would offer regimented administration of the project.

military exerted its power across the Caribbean during this period, expansion into the Canal Zone was nominally civil.[103]

Immediately after acquiring the Canal Zone, Congress instructed the President to establish civil institutions. Section 2 of the Spooner Act instructed the President to "make such police and sanitary rules and regulations as shall be necessary to preserve order and preserve the public health thereon, and to establish judicial tribunals as may be agreed upon thereon as may be necessary to enforce such rules and regulations."[104] To reinforce this directive, Congress enacted the Canal Zone Government Act of 1904. Passed months after ratification of the Hay-Bunau-Varilla Treaty, the act directed the President to appoint a temporary government for the Canal Zone that would "[maintain and protect] the inhabitants thereof in the free enjoyment of their liberty, property, and religion."[105] In order to fulfill these responsibilities, Roosevelt quickly setup the Second Isthmian Canal Commission and placed it under the supervision of the Secretary of War. In his appointment letter to the first commissioners, Roosevelt placed heavy emphasis on the virtues of efficiency, expertise, expedition, and economy.[106] Roosevelt urged his appointees to be vigilant for wasteful behavior and inadequate performance, among the members of the commission, private contractors, and laborers.

In Roosevelt's May 9 letter to Secretary Taft, which placed the Isthmian Canal Commission under his supervision, he defined the Commission's jurisdiction over the Canal Zone. Listed were seven key prerogatives: creation of all necessary rules and regulations;

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[103] These features of the Isthmian Canal Commission could be traced to the emergence of stewardship theory, to which Roosevelt was a significant subscriber. According to the theory, the executive—as the chief representative of the popular will—could more quickly act out that will than could a deliberative legislature. This connected to Roosevelt's faith in scientific expertise, whose experience would generate efficient, rational policies.
[104] Spooner Act, 482.
[105] "Canal Zone Government Act," Pub. L. No. 190, 33 U.S. Statutes at Large (1904), 429.
[106] J.J. McGuigan, ed., *Executive Orders Relating to the Panama Canal (March 8, 1904, to December 31, 1921)* (Mount Hope, C.Z.: The Panama Canal Press, 1922), 19–20.

establishment of a civil service; supervision of geologic surveys, borings, and sanitary works; execution of contracts; accounting; and requisition from the Secretary for urgent funds.[107] Roosevelt also enumerated civil protections for the region's inhabitants, requesting that they "be disturbed as little as possible in their customs and avocations that are in harmony with principles of well ordered and decent living."[108] The rights to due process, free speech, and religion; protections from unreasonable searches and seizures, from cruel and unusual punishment, and from slavery were enumerated in the letter.[109] This quasi Bill of Rights distinguished the Canal Zone from the United States' insular possessions, many of which were denied rights pursuant to the Insular Cases of 1901.

Finally, Roosevelt appointed Major-General George W. Davis to the office of Governor of the Canal Zone. As the chief executive, he oversaw the execution of the laws enacted by the commission and granted reprieves and pardons for those convicted of civil and criminal offenses.[110] And so a civil government was established in the Canal Zone to secure construction and ensure speedy completion of the canal. These institutional structures were then codified in the twenty-four Acts of the Isthmian Canal Commission between August 16, 1904 and March 4, 1905.

For instance, Act No. 1 established the court system and Act No. 8 established executive power in the Governor of the Canal Zone. These facsimiles were not, however, identical to the structures found in the continental United States. Although an independent judiciary was established, the Commission—not the Governor—appointed Chief Justices and Associate Justices to the Supreme Court. Moreover, these officials served staggered, expiring terms, not the

[107] McGuigan, 22.
[108] McGuigan, 23.
[109] McGuigan, 23.
[110] McGuigan, 24.

lifetime appointments that the Justices of the Supreme Court enjoyed on the mainland. Municipal judges, on the other hand, were appointed by the Governor and served at his pleasure.[111] The Governor of the Canal Zone also had abbreviated powers, and his relationship to the Isthmian Canal Commission was different from the separation of powers typically seen in the mainland. Responsible for the various departments of the executive branch, the Governor was charged with appointing officers to lead those departments, subject to commission approval. One exception was made for the Department of Health, the seats for which the Commission made itself responsible for filling.[112] The Acts did more than just establish and modify these institutions. The Isthmian Canal Commission established sanitary rules and procedures in Act Nos. 9 and 10; a penal code in Act No. 14; and rules for criminal procedure in Act No. 15.

The placement of the Department of Health directly underneath the Commission is significant for what it reveals about the gravity with which the United States approached the issue of disease. Because the French, largely due to general ignorance of germ theory, failed to establish effective health measures in the 1880s, their labor force succumbed to tropical diseases. Having better information on that issue, the United States stressed "the importance of an independent [health] department… for the convenience of administration."[113] This department could not afford to be bogged down by the slow gears of politics; it had to act on the best information available as quickly as possible in order to tackle the sanitation issue. The 1904 annual report indicates, "it was fully realized that the reputation of the Isthmus of Panama for unhealthfulness—whether this reputation was deserved or not—justified, and, in fact, made

[111] J.J. McGuigan, ed., *Laws of the Canal Zone, Isthmus of Panama, Enacted by the Isthmian Canal Commission, August 16, 1904 to March 31, 1914, Annotated 1921* (Mount Hope, C.Z.: The Panama Canal Press, 1922), 9–16.
[112] McGuigan, 62.
[113] Isthmian Canal Commission, *Annual Report of the Isthmian Canal Commission for the Year Ending December 1, 1904*, 37.

imperative the adoption of extreme measures for the prevention and cure of disease."[114] Such measures included exercise of Article VII of the Hay-Bunau-Varilla Treaty, which afforded the United States the "right to acquire by purchase or by the exercise of the right to eminent domain, any lands, buildings, water rights or other properties necessary and convenient" for sanitation.[115]

This Commission Government was short-lived, however, as Congress failed to prescribe a permanent government to the Canal Zone. But problems plagued the Second Isthmian Canal Commission, separate from congressional failure. For Chief Engineer John Wallace, the seven-man commission proved to be an insurmountable obstacle to progress on the canal. This was particularly bothersome, since Wallace was expected to stay on-site in Panama and correspond with the Commission in Washington, D.C.[116] Hearing Wallace's complaints about the bureaucracy, Roosevelt issued an executive order on April 1, 1905, to reorganize the Isthmian Canal Commission. The Second Isthmian Canal Commission gave way to the Third Isthmian Canal Commission, which would govern the Canal Zone through executive orders. The seven-member Isthmian Canal Commission gave way to a three-member Executive Committee—comprised of the Chairman, Governor, and Chief Engineer—which met semi-weekly on the isthmus.[117] Along with the changes, Walker and Wallace were asked to resign their posts. In their place, Theodore Shonts and John Stevens took up the mantle of Chairman and Chief Engineer, respectively.

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[114] Isthmian Canal Commission, *Annual Report of the Isthmian Canal Commission for the Year Ending December 1, 1904*, 50.
[115] "Convention between the United States and the Republic of Panama for the Construction of a Ship Canal to Connect the Waters of the Atlantic and Pacific Oceans," U.S. Statutes at Large § 2 (1903), 2236.
[116] Greene, *The Canal Builders*, 41.
[117] McGuigan, *Executive Orders Relating to the Panama Canal (March 8, 1904, to December 31, 1921)*, 36; Goethals, *Government of the Canal Zone*, 44.

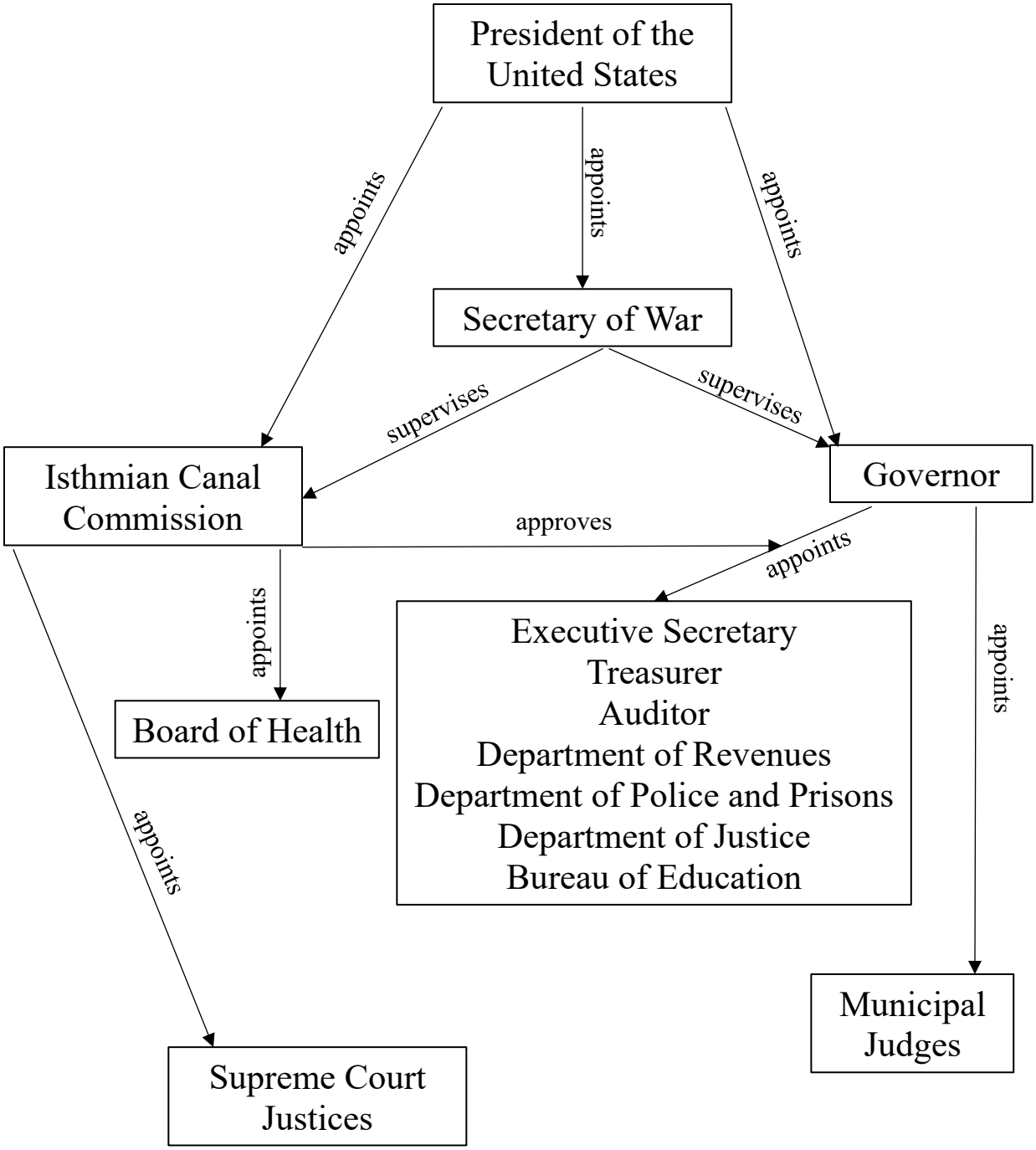

Figure 2: Government of the Second Isthmian Canal Commission, 1904–05.

Following the 1905 reorganization, the Sanitation Department successfully eliminated yellow fever from the region. A mild epidemic afflicted the workforce in the year prior, however. Although Cuban scientists had linked the disease to the *Aedes aegypti* mosquito by this time, Chairman Walker and Chief Engineer Wallace were skeptical and refused to deploy fumigation and water-control measures.[118] Roosevelt also had reservations at the time but consulted medical experts, who persuaded him to order the Executive Committee to support the Sanitation Department's efforts to control the mosquito population. As a result of their quick action, the Canal Zone diagnosed its last case of yellow fever on November 11, 1905.[119] Beyond public health outcomes, the Commission also completed constructing housing for its bachelor employees; improved and enlarged its terminal yards and wharves; completed the water system; and improved the Panama Railroad.[120]

Despite this increased productivity and progress, on November 17, 1906, Roosevelt issued yet another executive order to reorganize the Commission. Roosevelt abolished the Executive Committee, further consolidating power by expanding the number of departments and placing them all under the direction of the Chairman.[121] The Chief Engineer, given charge of all engineering and construction work, grew more powerful and his focus more specialized. Stevens would no longer have to concern himself with questions of civil administration; that would be left to the General Counsel. And yet, friction developed among the officers. Civil administrators began to consider construction of secondary importance, while lead engineers thought the same

[118] McGovern, *George W. Goethals and the Army*, 90.
[119] Isthmian Canal Commission, *Annual Report of the Isthmian Canal Commission for the Year Ending December 1, 1906*, 2.
[120] Isthmian Canal Commission, *Annual Report of the Isthmian Canal Commission for the Year Ending December 1, 1906*, 3–10.
[121] Goethals, *Government of the Canal Zone*, 44–45; McGuigan, *Executive Orders Relating to the Panama Canal (March 8, 1904, to December 31, 1921)*, 55.

of civil administration.[122] According to Goethals, Stevens likened the idea that the "raison d'être of the presence of the Americans on the Isthmus was not primarily to construct a canal but to set an example in government to the republics of Central and South America" was a "case of the tail wagging the dog."[123] Shonts and Stevens resigned in January 1907, infuriating Roosevelt and convincing him to implement a more dramatic change to the administrative structure in the Canal Zone.

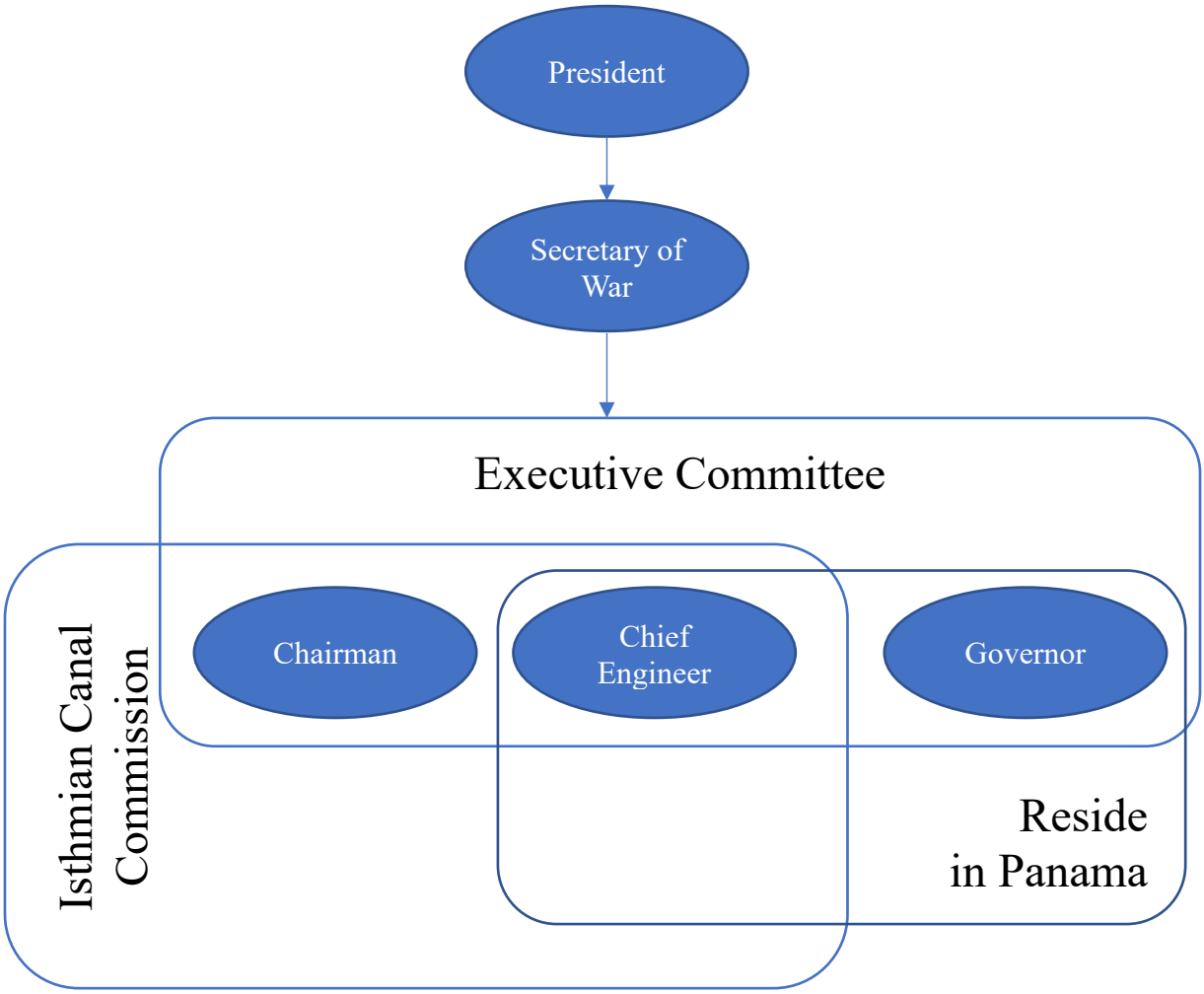

Figure 3: Reorganization of the Canal Zone Government, April 1, 1905.

[122] Goethals, *Government of the Canal Zone*, 45–46.
[123] George Goethals, "The Building of the Panama Canal: Organization of the Force," *Scribner's Magazine*, May 1915, 536.

Having lost two chief engineers in the span of three years, Roosevelt realized he would have to assign a military man to the post. Roosevelt demanded control. He wanted "men who will stay on the job until I get tired of having them there, or till I say they may abandon it."[124] Roosevelt wanted to eliminate interruptions, so he also demanded training the chief engineers as understudies, "so that were he incapacitated by ill health or for other reason either of them would be competent enough to carry on the work without interruption."[125] Beyond the potential to control the behaviors of the chief engineers, Roosevelt hoped that their military backgrounds would present a sense of duty, that "they would feel honor-bound to remain on the job until its completion."[126] In addition to hiring a new chief engineer, he also centralized the executive to streamline construction and define the policy that the American priority was construction first, democracy second.

Roosevelt's changes to the civil and canal administration in 1907 touched nearly every aspect of life in the Canal Zone. His executive order on March 13 abolished the municipalities and replaced them with administrative districts, consolidating offices and courts.[127] After appointing George Goethals to replace Stevens as Chairman of the Isthmian Canal Commission on April 1, 1907, Roosevelt vested the powers and responsibilities of the Governor in the Chairman.[128] This reorganization also resolved the conflict that led to Stevens' resignation: construction was the primary objective, all else was secondary.[129] And yet, Goethals was still displeased with the organization of the construction project. He found "friction… in placing

[124] Theodore Roosevelt, quoted in McCullough, *The Path Between the Seas*, 505.
[125] The Tribune Bureau, "How Stevens Resigned: Had Not Expected To," *New-York Tribune*, February 28, 1907, Chronicling America.
[126] Greene, *The Canal Builders*, 53–54.
[127] Goethals, *Government of the Canal Zone*, 47–49; McGuigan, *Executive Orders Relating to the Panama Canal (March 8, 1904, to December 31, 1921)*, 60–62.
[128] McGuigan, *Executive Orders Relating to the Panama Canal (March 8, 1904, to December 31, 1921)*, 65.
[129] Goethals, "The Building of the Panama Canal: Organization of the Force," 538.

subordinate officials under two heads, making it difficult at times to fix responsibility."[130] Although the executive committee grew to be tighter, Goethals felt there were simply too many department heads with overlapping authority, muddling chains of command.

The reforms were complete with Roosevelt's executive order on January 8, 1908, which placed all authority in the Chairman and stripped the Commission of any power.[131] With all this power, the Canal Zone was Goethals' to command. Goethals subsequently divided the Canal Zone into three construction divisions, each placed in the charge of a division engineer and an assistant division engineer. They organized and subdivided authority among "resident engineers, superintendents, general foremen, and foremen in such a way that responsibility could be definitely fixed."[132] Given full authority, these engineers could apply to the work what they believed would have been the best solution to their unique engineering problems.

Roosevelt introduced an autocratic government, where laws could be concocted on a whim. Roosevelt finally found an administrator who shared his point of view. For Roosevelt, efficiently constructing the Panama Canal was not solely a problem of superior engineering but also a problem of efficient management.[133] Goethals shared this perspective, believing that construction in this environment and with these stakes "was not in accord with the principles of democracy… had the franchise been introduced, the whole structure would have fallen."[134] What Goethals characterized as "benevolent despotism," the usurpation of powers by an executive officer from a congressionally mandated body, was to him a necessary evil. With Roosevelt's man at the helm, the Canal Zone experienced no additional reorganizations from 1908 to 1914.

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[130] Goethals, "The Building of the Panama Canal: Organization of the Force," 542.
[131] Goethals, *Government of the Canal Zone*, 50.
[132] Goethals, "The Building of the Panama Canal: Organization of the Force," 544.
[133] McGovern, *George W. Goethals and the Army*, 96–97.
[134] Goethals, *Government of the Canal Zone*, 51.

Through the first four years of construction, as the United States was gathering its bearings and calibrating its administrative structure towards efficiency, it took the lessons it learned to extremes. In its reliance upon government and its coordinated powers, control devolved towards consolidation to such an extreme that one man—Chief Engineer Goethals—could change institutional rules on a whim. For the Americans at the early turn of the twentieth century, private syndicates could not be trusted because they lacked a standardized system of accountability. The public could keep an eye on its government and make sure that it complied with the will of the people. As the allure of efficiency and the concern of a slow bureaucracy consumed Roosevelt, he consolidated power into fewer and fewer hands until only one person had any say in the matter.

Reliance on expertise gave way to extremism in the Canal Zone. Faith in the engineers, at the expense of civil administrators, narrowed the United States' vision for the Panama Canal Zone. When the rapid completion of the canal constituted the only ends, any means that could achieve that goal most efficiently became justified and prioritized. The United States, situated on the isthmus to complete a canal—not to rule well—understood that to be its only mission. Goethals, who happened to be well-suited for the challenges of the engineer and the manager, won this power over the Canal Zone, because Roosevelt and Taft identified this unique skillset in him.

Even the government's flexibility worked towards its detriment. Never satisfied with the structure at hand, the United States almost compulsively sought to experiment with its administration to find newer and better ways of governing. In a constant state of adjustment, American leaders even overcame their distrust of new, scientific knowledge to address the disease that defeated the French. But that persistent openness to try new things and to make

improvements wherever possible led to constant change until it reached a system that refused to change.

Balancing the Public and Private Distinctions

On June 24, 1914, Congress authorized Governor Goethals to investigate the claims by the McClintic-Marshall Construction Company for compensation owed for deviations from the initial contract for completion of the miter gates. At issue was the company's claim that delays and modification of requirements by the Isthmian Canal Commission substantially increased the costs that McClintic-Marshall had to assume. McClintic-Marshall alleged the Isthmian Canal Commission owed between $1.9–2.0 million to cover these unexpected costs.[135] Ultimately, Goethals recommended that McClintic-Marshall be paid an additional $714,007.39. The firm would never recover from the financial losses that participation in the project presented. This relationship with contracted firms was an extension of the autocratic manner with which the Isthmian Canal Commission dealt with citizens and workers in the Canal Zone, and the Panamanians outside.

Private industry, it seemed, was no safer than civilians from the extensive reach of the federal government in the Canal Zone. The arc of the federal government's relationship with the McClintic-Marshall Construction Company signifies that the oppressive regime extended beyond individual laborers and locals. Though the Isthmian Canal Commission did not sign contracts to the extent the French had, those firms with which it did conduct business faced the same strictness in timetables and output expectations that the men in the steam-shovels had.

[135] George W. Goethals, "Report on the Claim of McClintic-Marshall Construction Co. against the Isthmian Canal Commission," 64th Cong., 1st Sess., 1916, H. Doc. 906, 5–6.

Although organized, administered, and managed by the United States government, there was still room for private industry to play a supporting role in the project. Noted in most histories of canal construction, the McClintic-Marshall Construction Company engineered the miter gates for the Miraflores, Pedro Miguel, and Gatun locks. However, previous texts wrongly characterize McClintic-Marshall as the only private firm contracted to fulfil the government's orders.[136] In fact, the federal government contracted different firms for various parts and closely oversaw production.

In the Spooner Act, Congress included authorization to "enter into such contract or contracts as may be deemed necessary for the proper excavation, construction, completion, and defense of said canals, harbors, and defenses."[137] Congress, therefore, offered Roosevelt the space to follow nineteenth-century precedent of mixed enterprise, though the Isthmian Canal Commission largely elected to ignore that precedent. Only one major contract was extended to the McClintic-Marshall Construction Company, but several smaller contracts for parts demonstrate the extent to which government oversight affected the production schedule of the firms that elected to participate in canal construction.

The Isthmian Canal Commission extended one such contract to the Dietz Engineering Company for "sixteen (16) valves 15 [in.] x 30[in.] and six (6) valves 15[in.] x 15[in.]," which designed the parts and subcontracted the manufacture of those parts to the Christiana Machine

[136] See McCullough, *The Path Between the Seas*; Alexander Missal, *Seaway to the Future: American Social Visions and the Construction of the Panama Canal*, Studies in American Thought and Culture (Madison: The University of Wisconsin Press, 2008); Greene, *The Canal Builders*. The National Archives, which holds the papers of the Isthmian Canal Commission, did not hold contracts established with much smaller firms or present conversations between members of the Executive Committee that highlighted questions of whether or not many smaller contracts ought to be extended. Only a chance encounter with the records of a smaller manufactory in Pennsylvania revealed another private firm that had some role to play in canal construction.
[137] "Spooner Act," 483.

Company.[138] Within this order letter, Dietz Engineering explained that the U.S. government would inspect their product at the shop before being shipped out to New York. Included in the margins of the Christiana Machine Company's order book included these explicit instructions to "notify U.S. Engineer Office [in] Phila" when ready for inspection.[139] This was the first of two orders by the Isthmian Canal Commission for these valves. These instructions for inspection were reproduced for the orders of March 1909, that time for eighty-four valves of the larger size and twenty-eight of the smaller. The Christiana Machine Company offered price quotations of $16 for each of the large valves and $12 for each of the small valves in the first order, but requested $17.50 and $15, respectively, in the second order. Dietz Engineering rejected these figures on behalf of the federal government, because "the price of Pig Iron is some what lower than it was a few months ago, and that [they] have a great number of valves duplicated, so that it appears to [Dietz] that these facts should off set the additional amount of material in the levers, and the additional box required."[140] Captain F.C. Boggs, the General Purchasing Officer of the U.S. Corps of Engineers, kept an attentive eye on production. Certifying and retaining the power to approve or reject prices, timetables, and quality of materials established a level of surveillance over private industry that the Americans of the previous century and de Lesseps seemed to have lacked.

But far from everything was contracted. Repairs, specifically, were conducted in-house. The Isthmian Canal Commission established government-run shops on the isthmus to take care of repairs. Shops at Cristobal and Balboa repaired dredges and excavating machinery; the large

[138] L.A. Dietz to Christiana Machine Co., October 29, 1908, box 21, Christiana Machine Company Records, Hagley Museum and Library, Wilmington, DE.
[139] January 1907–June 1911 Order Book, volume 7, Christiana Machine Company Records, Hagley Museum and Library, Wilmington, DE.
[140] L.A. Dietz to Christiana Machine Co., March 19, 1909, box 21, Christiana Machine Company Records, Hagley Museum and Library, Wilmington, DE.

shops at Gorgona repaired locomotives and excavation cars; and steam shovels were repaired at Empire.[141] The Isthmian Canal Commission also operated the railway, which rivaled the Boston & Albany Line, running over three hundred locomotives.[142] These shops along the Canal Zone were also giant manufacturing shops. Organizing these shops became necessary "on account of the short-sighted policy of some manufacturers in charging exorbitant prices for repair parts. [The United States found it] repeatedly cheaper to make a pattern and a casting and then machine the casting than to pay the price asked and wait for it to be made."[143] Price mattered to the government on the canal, and the Isthmian Canal Commission was wary of overpaying for goods and services that it could furnish with less expense.

The Isthmian Canal Commission extended a call for contracts for the miter gates on June 15, 1910. Four firms submitted proposals: the Riter-Conley Company of Pittsburgh, the Maryland Steel Company, the United States Steel Products Export Company, and the McClintic-Marshall Construction Company. Of these, the Isthmian Canal Commission selected the McClintic-Marshall contract on the basis of price.[144] The two parties later signed the contract on June 21. Even before signing the contract, news of the bids traveled to Pottstown, where newspapers voiced excitement at the effect the contract would have on local workers, that it would "make the company so busy that Pottstown is bound to be benefitted either directly or indirectly."[145] That enthusiasm was well-deserved, as half of the Pottstown plant was dedicated

[141] "Construction of the Great Panama Canal," *Daily Pottstown Ledger*, February 1, 1913.
[142] "Construction of the Great Panama Canal," *Daily Pottstown Ledger*, February 1, 1913.
[143] "Construction of the Great Panama Canal," *Daily Pottstown Ledger*, February 1, 1913.
[144] Goethals, "Report on the Claims of the McClintic-Marshall Co.," 8. The Isthmian Canal Commission estimated the locks would cost $6.5 million. McClintic-Marshall offered to complete the miter gates for $5.4 million, United States Steel for $6.1 million, Maryland Steel for $8.4 million, and Riter-Conley for $10.1 million. Interestingly, Bethlehem Steel would eventually merge and acquire three of the four industrial firms that presented proposals to the government.
[145] "Low Bidders on Big Work," *Daily Pottstown Ledger*, June 17, 1910.

to the gate contract by November.[146] And although the contract meant more work for Pottstown workers, it would ultimately spell doom for the firm.

By 1910, McClintic-Marshall was a fairly successful industrial firm. Howard McClintic and Charles Marshall incorporated the firm in 1900, with a $150,000 cash investment by Andrew Mellon.[147] The third-party appraisal of the firm attributed McClintic-Marshall's success to its specific industrial niche: "this business was… a processing of material rather than a production of material. The company fabricated and erected the steel, but strictly speaking did no steel manufacturing. The erection end of the business also required little equipment, as the field equipment is relatively small even for a large contract."[148] Moreover, as a member of the service industry, McClintic-Marshall relied upon extrinsic factors such as reputation to build its success. Its work building the bridge over the Ohio River in Beaver, Pennsylvania, gained McClintic-Marshall "considerable comment in the engineering field."[149]

And so even with the meagre capital investment by Mellon at the turn of the century, McClintic-Marshall could accumulate success by attracting clients with its reputation for ability and responsibility. Given any challenge, McClintic-Marshall was sure to get the work done. That reputation proved the company's downfall as it strove to produce miter gates at a loss. The appraisal noted:

> The Panama Canal job resulted in a monetary loss, the largest in the history of the company, due to very unfavorable working conditions, unreasonable Government Inspection, and being required to furnish a class of work not fairly within the contract specifications. Notwithstanding the many obstacles and the loss entailed, the company completed the Panama Canal job. The desire of the company to complete the work to the entire satisfaction of the Government engineers was paramount, as Messrs. McClintic and

[146] "McClintic-Marshall at Work on Big Gates," *Daily Pottstown Ledger*, November 1, 1910.
[147] American Appraisal Company, Inc., "Data Relative to March 1, 1913, Fair Market Value, 1931," 4–5, 1931, box 94, Bethlehem Steel Corporation Records (1699), Hagley Museum and Library, Wilmington, DE. By 1931, when Bethlehem acquired McClintic-Marshall, the company assets would be valued at over $72,000,000.
[148] American Appraisal Company, Inc., "Data Relative to March 1, 1913, Fair Market Value, 1931," 6.
[149] American Appraisal Company, Inc., "Data Relative to March 1, 1913, Fair Market Value, 1931," 8–9.

> Marshall realized that the company was establishing a very valuable reputation for reliability, especially to carry on successfully regardless of financial loss.[150]

To produce subpar gates, or even to fail to complete the contracted work, threatened to tarnish the reputation McClintic-Marshall had worked so hard to build.

This reputation affected not only potential clients but also the company employees. By participating in canal construction, McClintic-Marshall aimed to leverage this experience in attracting additional clients. But workers were equally proud of their roles in the project, often at the detriment of other laborers. Constructing the gates, in particular, was presented as "the most important part of the big job… requiring more engineering than the excavating work which was largely one of labor, performed by negroes and Chinamen mostly, and big machine shovels."[151] Such portrayals emphasized the weight and significance of the skilled labor from which Black men were typically barred, while belittling the labor-intensive work at the canal.

Work for McClintic-Marshall extended past the gates. On July 26, 1911, the company also won the contract to construct "spillway gates, caissons and foot bridges," "numerous valves bulkhead gates and screens."[152] So as the firm assumed the responsibility of spending millions of dollars on the miter gates, it also volunteered to help construct the dams for Gatun Lake.

Upon completion, McClintic-Marshall issued a claim against the Isthmian Canal Commission, requesting further compensation for additional work performed as a result of shifting specifications and vexatious federal oversight. In the end, the commission formed to investigate the claims argued, "the work was first-class and that in the final result the Isthmian Canal Commission got better work than it was entitled to under the specifications, as drawn."[153]

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[150] American Appraisal Company, Inc., "Data Relative to March 1, 1913, Fair Market Value, 1931," 10.
[151] "W.M. Sterrett Back to Panama," *Daily Pottstown Ledger*, August 4, 1913.
[152] "Big Contracts for Local Firm," *Daily Pottstown Ledger*, July 26, 1911.
[153] Goethals, "Report on the Claims of the McClintic-Marshall Co.," 376.

This testimony proved to be a double-edged sword for McClintic-Marshall. On the one hand, it was testament to the quality of the work that could be expected of the firm. Goethals praised the excellence of the gates. On the other hand, such excellence was not specified by the contract, and the federal government was not obligated to remunerate McClintic-Marshall for uncontracted work. McClintic-Marshall should have practiced more careful judgment in considering what kind of first-class workmanship was expected and what kind was not.

The government could be held responsible for additional costs that McClintic-Marshall suffered "by reason of the excessive demands and interference with the work by the Isthmian Canal Commission's inspectors and engineers."[154] However, the commission also argued that additional factors played a part in creating a discrepancy between McClintic-Marshall's low bid and the true cost of the gates. The commission argued that McClintic-Marshall suffered losses because of its "inexperience in the character of the work undertaken" and "bad management in connection with the fulfillment of the contract."[155] To be fair, the United States also made inspections of the plant and the firm before assigning the contract to McClintic-Marshall and deemed it sufficient to complete the contract in the amount quoted. But rather than take full responsibility for this clear lapse in judgment, the United States opted to take the cheaper bid and force McClintic-Marshall to assume most of the additional costs.

Contrasting this relationship and those that preceded it during the Transportation Revolution confirms how exceptional the project was in the larger history of American infrastructure. The United States had never been the adoptive parent of a failed construction effort, and that failure proved to leave a lasting influence on the government's relationship with private industry. It needed a hardline dedication to efficiency if it would avoid the same issues

[154] Goethals, "Report on the Claims of the McClintic-Marshall Co.," 375.
[155] Goethals, "Report on the Claims of the McClintic-Marshall Co.," 375.

that troubled the French. That meant the United States would need to press and drive labor and industry towards the finish line by any means necessary.

CHAPTER 3: CONCLUSION

Two warring perspectives have complicated the legacy of the Panama Canal and the enormous, decades-long effort to construct it. On the one hand, early chroniclers depicted the decade of American construction as a period of engineering, scientific, and medical ingenuity to highlight the country's achievement over nature. They justifiably identified the awesome dedication and resource that the United States poured into the isthmus. On the other hand, criticisms of exploitative policies by the federal government that emerged nearly half a century later also rightly identified the disparities in experiences in the Canal Zone, most often along lines of race and class.

But neither the achievement nor the exploitation emerged out of nowhere, or from some intrinsic American character or behavior. The Isthmian Canal Commission enjoyed seemingly limitless power in the Canal Zone because American administration of the Panama Canal prioritized efficiency above the preservation of civil liberties or economic precedent. Obsession with completing the canal as quickly as possible was baked into the very structure of the Isthmian Canal Commission. Beneath the veneer of the engineering marvel and medical breakthroughs lay a foundation that made those victories possible. With adequate resources and enough time, the French arguably might have completed the canal and won the subsequent glory. However, the adaptive institutional structure that elevated the opinions of engineers and experts above those of optimists and boosters truly set the United States apart from the French. Success three decades later was contingent on that structure, which the adulators failed to recognize. American genius did not spring forth naturally; the Isthmian Canal Commission fostered an

environment that stimulated and cultivated that genius. This foundation was the United States' true triumph over the French and Panama.

Exploitation and abuse were also not inevitable features of American administration. Equitable treatment for laborers and Panamanians might not have been foregone conclusions in 1904, but the United States demonstrated some willingness to implement a more generous regime in the first variation of the Isthmian Canal Commission. Antagonism against labor and natives developed as a consequence of what executives perceived to be slow and insufficient production and a resolution not to repeat the mistakes of the French. In fact, the records indicate that the United States government was no less hostile to the private industrial firms with which it contracted than it was with its labor force. Expedient delivery of the canal was the foremost priority; all else was expendable.

Studying the development of American administration critically and sincerely and contextualizing that development in the wake of the failure of the French administration, reveals more clearly the reasons for the United States' departure from its tradition of mixed enterprise. Neither historical tradition gave the optics of the French failure in the United States the attention it deserved, merely relegating it to its obligatory place in the prologue. However, that experience clearly resonated with American statesmen who did not want to duplicate French humiliation. Looking at how this tracked through Congress, the Executive, and the Isthmian Canal Commission explains more thoroughly the reasons for Goethals's one-man rule in the region. This institutional analysis is meant to complement—not supplant—previous analyses and interpretations of the history of the Canal Zone. By looking at the operation as a complex whole, the institutional lens acknowledges and appreciates the complicated history of the region, instead of simplifying relationships one way or another.

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