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Evading Capture: U.S. Army Engineers and Railroad Policy, 1827–1853

Abstract: Until 1838 the U.S. government lent railroads Army engineers to survey routes. Though not strictly regulators, these army engineers would consequently face powerful versions of the incentives that make regulatory capture a pervasive problem—including an intensified “revolving door,” the opportunity for institutional empire building, and a fertile ground for cognitive capture. Nevertheless, engineering officers would push to abolish federal railroad aid, succeeding by 1838. This article argues that they turned against railroad aid when the nation’s growing rail network revitalized long-standing republican hopes of replacing standing armies and fortifications with floating batteries and militias. Though this scheme was strategically quixotic, Jacksonian populism and fiscal retrenchment during the Panic of 1837 combined with the transportation revolution to make it appear a credible threat to the Corps’s institutional *raison d’être*—building coastal fortifications. Engineers thus turned against railroad aid to protect their core competency, highlighting underappreciated tensions between institutional and industry interests.

Keywords: regulatory capture, Jacksonian populism, corps of engineers, internal improvements, revolving door

On Saturday January 9, 1841, a capacity crowd of 2,500 amassed in the pews and rising circular gallery of Charles Grandison Finney’s Broadway Tabernacle to hear General Edmund Gaines lecture on “National Defense.” After ascending the rostrum “dressed in the full uniform ... with belt and sword,” the General drew worried applause, declaring New York was “in the power of any crowned head in Europe to take ... in no time; 20 steam ships of war might glide in abreast your city fronts ... receiving scarce a shot.” “Pointing to his diagram with his glistening sword,” Gaines outlined his solution: to deploy

floating batteries to defend the nation's harbors and "construct seven large railroads from the central and western states to" transport "everything necessary for the defense of the seaboard and the frontier ... with inconceivable rapidity."¹ Though exceptionally ambitious, Gaines was hardly the only army officer to lobby for federal railroad policy in antebellum America. Until 1838, the War Department lent railroads engineering officers to survey routes. This program gave those officers every incentive to favor further railroad aid. Yet army engineers and the War Department, generally, not only avoided capture by the railroads but took the lead in repealing this policy.

This article will contend that General Gaines's lobbying offers the key to understanding this development. His call to reorganize America's defense strategy was merely a steam-powered restatement of a long-standing republican vision—albeit one voiced with pomposity at least equal to Gaines's *bête noire*, Winfield Scott. Nevertheless, Gaines's fuss ruffled the military establishment's feathers. Proposals to replace fortifications and standing armies with gunboats and militias had long appealed to Jeffersonian republicans, but steam power lent them new credibility. With Jacksonian populism placing the Army's most aristocratic branch under suspicion and the Panic of 1837 tightening belts, they appeared to be a credible threat to fortification policy. Thus, army engineers retreated from their posture of bureaucratic imperialism to defend their core competency, building fortifications—the basis of their claims to administrative autonomy and political influence. This story reflected Americans' wider attempts to reconcile Jacksonian democracy with the bureaucracy, professional expertise, and standing armies demanded by technological development and military exigency. It also represents a case study in how a government agency avoided capture despite facing powerful versions of the financial, personal, and institutional incentives that drive regulatory capture.

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Regulatory capture occurs when regulatory agencies come to serve the regulated industry rather than the public. Though he was far from the first modern social scientist to observe this pattern, George Stigler is closely associated with capture theory for applying Chicago-School price theory to model regulatory policy as a problem of supply and demand.² Industries, he suggested, demand use of the state's coercive power while policy makers supply it in exchange for votes and resources.³ Scholars like Jean-Jacques Laffont and Jean Tirole have since extended this model to account for the information asymmetries that exist between legislator, regulator, and industry leading to a principal-agent problem where regulators can be bribed to serve

industry rather than the uninformed public.⁴ One classic way capture theorists have seen such bribes taking place occurs via the oft-observed “revolving door,” where individuals shuttle between regulatory agencies and well-compensated positions in the regulated industry.⁵ Though theorists have primarily focused on legislators and agencies regulating natural monopolies, incentives like those created by this revolving door are present in other fields as well. Recognizing this, scholars have increasingly applied capture theory more broadly to examine cases where special interests attempt to shape public policy.⁶ For example, Luigi Zingales has productively applied capture theory to analyze the effects of his fellow economists simultaneously undertaking academic research and pursuits like corporate consulting and sitting on corporate boards.⁷ Following this lead, this article adopts the frame of “administrative capture” to evoke the incentives engineering officers and other War-Department officials faced vis-à-vis railroad policy though, strictly speaking, they were not regulators.⁸ Not all incentives driving capture involved express corruption. Scholars have also increasingly called attention to “cognitive capture” in which officials unconsciously conflate a regulated industry’s interest with that of the public.⁹

Though nineteenth-century Americans were obsessed with the problem of “corruption”¹⁰—a blunt term analogous to capture—social scientists across the full spectrum of fields and ideologies begin their analyses of the topic around the founding of the Interstate Commerce Commission in 1887.¹¹ Legal historian William Novak points out that this chronology “embeds some strong assumptions about regulation and administration as comparatively recent developments in American history”—assumptions belied by historical and political-science scholarship over recent decades.¹² In addition to state and local governments wielding extensive authority,¹³ Stephen Skowronek influentially reminded readers, the federal government “maintained an integrated legal order ..., fought wars, expropriated Indians, secured new territories, carried on relations with other states, and aided economic development.”¹⁴ These efforts reflected not only the initiative of legislators but also bureaucratic entrepreneurship and government agencies’ developing organizational priorities that might parallel the public interest, industry interests, or neither.¹⁵

Historians have long recognized one area where federal administration shaped America’s economic development largely through the agency of bureaucratic entrepreneurs: the military’s engineering aid to the first decade of railroad construction.¹⁶ The War Department was crucial to the General Survey Act of 1824’s passage and its application to railroads. Thus, the Army

solved, what contemporary French observer Michel Chevalier declared, “[t]he greatest difficulty which Americans encountered in the execution of public works” by lending engineers to survey canals, turnpikes, and (after 1827) railroads until 1838, in addition to training the bulk of the nation’s civilian engineers.¹⁷ The government even paid “for all expenses incidental to the survey[s]” until an 1832 reform.¹⁸ This reform was no sign of general Jacksonian retrenchment. Despite his famous Maysville-Pike veto and hatred for outspoken internal-improvements advocates John Quincy Adams and Henry Clay, the federal government spent twice as much annually on internal improvements under Jackson as it had under Adams.¹⁹

Survey-aid policies meant Jacksonian-Era army engineers and the officer corps, generally, faced a textbook recipe for capture—railroad-survey duty afforded ill-paid officers the opportunity to draw two salaries simultaneously, access to networks with more opportunity for advancement than the ante-bellum Army, and a reprieve from the monotony of garrison duty.²⁰ Moreover, the War Department and its Engineer Division faced institutional incentives to extend their power by administering railroad aid while its officers ran in social circles that were a fertile ground for cognitive capture.

Nevertheless, by 1838 War-Department efforts would prove crucial to the General Survey Act’s repeal. Engineering officers led the charge against railroad aid and would lobby against its resumption—despite facing the strongest incentives for capture. General Gaines’s lobbying offers a key to understanding this development. His call to reorganize America’s national defense around floating batteries and railroad-aided militias was merely an ambitious restatement of a long-standing republican vision. Holding fortifications and standing armies in suspicion as un-republican tools of tyranny, its adherents sought to empower the yeoman militia in their place. Long mobilization times had always frustrated such schemes. By 1835, however, War Secretary Lewis Cass concluded that railroads would soon be able to throw “almost any amount of physical force . . . in a few hours, upon any point” and reinvigorated the standing army-militia debate—at the height of Jacksonian-Era reevaluations of bureaucracy, professional expertise, and standing armies’ place within a democratizing society.²¹

By then, railroad surveys had stretched the Army’s engineering manpower thin. With an already-limited Jacksonian-Era appetite for budgetary increases for the Army’s most aristocratic branch weakened by the Panic of 1837, engineering officers retreated to their core competency. Led by Colonel Joseph Totten, they took the offensive against proposals to reorganize American defense around railroad-aided militias to defend their organizational

priority and source of personal pride: permanent coastal fortifications. Congress would follow their counsel to repeal the General Survey Act in July 1838—removing railroads' connection with the War Department. Engineers and other officers would thus actively oppose federal railroad policy until 1853. By then the completion of the trunk lines was a *fait accompli* and America's victory over Mexico had transformed the meaning of railroad policy before Secretary of War Jefferson Davis signaled a new era by advocating for federal efforts to link the Pacific coast to the East with rails.

Engineering officers' mid-1830s turn against the railroad policy thus offers a case study in combatting capture at agencies facing powerful versions of the financial, personal, and institutional incentives for capture. Nevertheless, this case's broader applicability should not be overstated. Totten and his fellow engineers' turn against railroad policy took place in a political-economic context that made challenges to the fortification system that was the core competency of the Corps of Engineers—and source of pride for its officers—appear particularly viable.

THE WAR DEPARTMENT, THE GENERAL SURVEY ACT, AND THE ROAD TO CAPTURE?

The War Department shaped some of America's earliest laws authorizing federal support for road and canal construction and proved the primary mover behind their application to railroads. In an 1819 report to Congress, Secretary of War John C. Calhoun touted infrastructural development as “among the most efficient means for ‘the complete defence of the United States’” and assigning army engineers to survey roads and canals as the way to achieve this goal.²² In February 1821, a board of engineering officers led by Simon Bernard, an exiled French engineer, and Joseph G. Totten, who ironically would become railroad aid's most notable opponent by the late 1830s, prominently featured “interior communications by land and water” in its influential report that laid the framework of America's Third System of Defense.²³ Two years later, Bernard and Totten outlined the policy implications of this strategy—coauthoring another report endorsing federal assistance for canals with national purposes that could “only be undertaken at the charge of the public treasury.”²⁴ Simultaneously, Calhoun's War Department unilaterally undertook this policy.²⁵ In 1824, Congress retroactively authorized Calhoun's action by passing the General Survey Act, which granted the executive the power to use army engineers

to cause the necessary surveys, plans, and estimates, to be made of the routes of such roads and canals as he may deem of national importance, in a commercial or military point of view, or necessary for the transportation of the public mail.²⁶

In 1827 Calhoun's successor, James Barbour, deployed three engineering brigades to survey the Baltimore and Ohio's route under the General Survey Act, effectively amending the three-year-old law to include railroads along with "roads and canals."²⁷ Chief Engineer Alexander Macomb bolstered this effort with expert testimony declaring the B&O to be "of great national importance," requiring the "service [of] as many military ... and civil engineers as could be withdrawn."²⁸

During the eight years following Barbour's 1828 resignation, his successors—Peter Porter, John Eaton, and Lewis Cass—sought to crystallize his survey-aid policy. Each extended Barbour's arguments,²⁹ and Cass protected survey aid from political and financial pressures with a reform requiring railroads to pay incidental survey expenses—allowing the War Department to administer it with more independence from Congress.³⁰

Railroads had reason to appreciate this aid. When Secretary Barbour assigned three brigades to survey the B&O and superintend its construction, they quickly vindicated Benjamin Latrobe's remark that "Nothing is so easily converted to civil use, as the science common both to the ... civil and military engineer."³¹ The B&O would represent an "effective school of practice for railroad engineers," with Colonel Stephen Long developing principles for managing curves and grades that have remained fundamental since his 1829 *Rail Road Manual*. Though the army engineers would feud with the B&O's civilian management and leave its service by June 1830, their contributions surveying its initial route were crucial.³² Beyond their many innovations, they helped the road overcome a primary constraint felt throughout America's transportation revolution—the availability of engineers. After all, the nation had boasted only thirty civil engineers before Sylvanus Thayer's reforms beginning in 1817 transformed West Point into America's first engineering and technical school.³³ With the War Department exercising significant discretion dispensing crucial technical aid, railroads had every reason to curry favor with engineering officers both to secure aid directly and to capture them as allies vis-à-vis legislative policy.³⁴

Advocacy for federal railroad policy pervaded the officer corps during the 1820s and early 1830s. Engineering officers stood at the heart of this trend—

from Chief Engineer Macomb backing Barbour's extension of survey aid to railroads to the young lieutenant agitating publicly to build the Cumberland Road as a railroad rather than as a turnpike.³⁵ Engineers were hardly alone in their advocacy. Their comrades throughout the officer corps like General Gaines—who later played the central role in debates on the topic—wielded pens and mounted podia to battle for federal railroad projects during the early 1830s.³⁶ Their endorsements validated railroad boosters' ubiquitous claims about roads' military utility with the imprimatur of martial expertise.³⁷ These claims were doubly important as military roads offered the strongest precedent for railroad aid's constitutionality and engineering officers rendered the bulk of it.³⁸

The Alabama, Florida, and Georgia Railroad represents an instructive case study. In 1835, the United States Topographical Engineers assigned Major James Graham to survey its route. His resulting report declared that the road was "long since demanded by the interests of the General Government" in defending the Gulf of Mexico and, therefore, merited federal aid.³⁹ Graham's report was not entirely disinterested. Soon after its delivery he became the road's chief engineer and republished it in the *American Railroad Journal* to promote his new venture. A few years after Graham—who had retained his army commission and salary throughout—left the Alabama, Florida, and Georgia, it paraphrased his report while petitioning Congress for a land grant.⁴⁰ This strategy proved successful. Not long after the Senate Committee on Roads and Canals issued a favorable report parroting the petition's Graham-inspired language, Congress authorized its land grant.⁴¹ The Alabama, Florida, and Georgia proved less successful economically than politically. Unable to comply with the land grant's conditions, it soon sought an extension. During the ensuing debate, a less financially interested officer than Graham—Chief Engineer Joseph Totten—forwarded Congress a copy of a naval report arguing, "The Government seems imperatively called to patronize and accelerate all works of interior communications leading" to the naval depot at Pensacola.⁴² This argument, coupled with Totten's credibility as the chief engineer, helped convince Congress to extend the road's land grant.⁴³

Graham and Totten's support for the Alabama, Florida, and Georgia reflected the complementary forces of self-interest and policy beliefs motivating officers' survey-aid advocacy. During the 1820s and early 1830s many officers supported railroad aid, in general or to specific roads, due to an honest assessment of the public interest. Humiliations experienced during the War of 1812—as well as the logistical and mobility challenges that

contributed to them—loomed large in policy makers' minds.⁴⁴ This memory held a special significance for the officers and administrators tasked with preventing their repeat, prompting even ideological opponents of federal activism to back internal-improvement policy.⁴⁵ These officers had reason to believe that railroads could be valuable defensively. The western frontier extended over swaths of sparsely populated territory with little infrastructure and rivers that provided no direct connection to the Atlantic coast. The revolutionary geostrategic implications of the speed, reliability, and upriver access that steamboats provided were on full display in these regions during the two decades following the War of 1812. And they were not lost on America's officer corps. In this context, it was no major imaginative leap for officers like General Gaines to see possibilities for "the application of steam power on railroads ... to surpass any other ... discovery known to military history."⁴⁶ Though Gaines's enthusiasm was exceptional, many other officers, War-Department officials, and subsequent geostrategic analysts would reach similar conclusions.⁴⁷ Thus, officers with no pecuniary interest in a road, such as Totten in Alabama, Florida, and Georgia, commonly advocated its case to Congress.⁴⁸

Moreover, late-1820s and early-1830s officers, especially engineers, faced strong personal incentives to support federal railroad aid. At a time when the War Department regularly (and accurately) complained that it was only authorized to pay its engineers well-below-market wages, railroads lavishly supplemented the modest army salaries of officers assigned to surveys. Officers like Major Graham who continued drawing army salaries while serving roads could consequently step through capture theory's revolving door without leaving the Army.⁴⁹ Thus, engineers on survey duty could make several times more than their army salary alone.⁵⁰ The peacetime Army's limited opportunity for promotion made this difference all the more glaring. More West-Point alumni served as railroad presidents than as generals, highlighting survey duty's appeal as a networking opportunity.⁵¹ And officers used those networks with gusto. One historian found that 47 of the 166 officers on the Army's register in 1830 pursued civil engineering as their post-service careers.⁵² West Point's Board of Visitors found more.⁵³ Contemporary critics like then-Senator James Buchanan thus saw survey policy and the financial incentives it created as a source of corruption that allowed railroads to "buy" the officer corps, which "accumulated large fortunes in the service of these companies, while the business of the Government was neglected."⁵⁴ Not all self-interested reasons officers had to support railroad aid were financial, however. Survey duty also provided

them with a break from the monotony of more common—and more isolated—garrison duty.⁵⁵

Furthermore, the growing number of former officers employed by railroads created a fertile environment for the cognitive capture of even unimpeachably civic-minded officers. With a plurality of former officers becoming civil engineers on internal-improvements projects and many active engineering officers simultaneously receiving War-Department and railroad salaries, officers were surrounded by friends and colleagues whose financial cart was hitched to the iron horse—a social context that could easily instill a mindset conflating railroad interests with national interests.

All told, engineering officers and the War Department, generally, faced a textbook recipe for capture by railroad interests during the 1830s. They faced strong and growing personal incentives to favor railroad aid. Moreover, survey aid gave army engineers—the officers most liable to politic in defense of their institutional priorities—the opportunity to expand their institutional power, seemingly aligning their institutional incentives with those of railroads.⁵⁶ Yet, they evaded these incentives for capture. And, by 1838 they would play an influential role in the General Survey Act's repeal before spending the subsequent 15 years advocating against federal railroad policy.

REPEALING THE GENERAL SURVEY ACT

The first fissures in the foundation of the military's survey-aid advocacy appeared shortly after Barbour applied the General Survey Act to railroads. Soon the Corps of Engineers' leaders began complaining that surveys stretched its limited resources thin.⁵⁷ At first, War-Department officials like Secretary Eaton defended engineers' use on "what could be considered civil purposes" such as railroad surveys and—like members of any bureaucracy—"expressed a concurrence in the opinion ... of the necessity for increasing the number of officers" within their ranks. "The advantages ... from such an increase," Eaton argued, would be visible "in the construction of fortifications and other works of general improvement."⁵⁸ But appropriations for additional engineers did not prove forthcoming—elitist engineers were hardly a funding favorite of Jacksonian populists. And by 1835, Chief Engineer Gratiot's annual report betrayed increasing frustration in its request for them.⁵⁹ Cass diplomatically shielded railroad surveys from Gratiot's increasing acerbic complaints behind recapitulations of survey aid's value and assurances that "[a]ddition to the corps offers the only remedy for this state of things."⁶⁰

In 1836 and 1837, Gratiot “reiterate[d his] recommendations ... that the corps of engineers be increased to double its present number” with less palpable frustration than previous years.⁶¹ Gratiot’s newfound equanimity was ironic. Since December 1835, the Second Seminole War had increased the Army’s manpower demands even as the long, deadly war in the Florida swamps witnessed an exodus from the officer corps—especially of officers on railroad-survey duty.⁶² Despite Gratiot’s newly tactful tone and entreaties from Chief Topographical Engineer J. J. Abert to continue survey policy, both Interim Secretary Butler and Secretary Poinsett shifted attention to the demand-side of the engineer shortage, arguing that it necessitated the General Survey Act’s repeal.⁶³ They thus signaled the engineers’ retreat from a posture of bureaucratic imperialism to a defense of their core competency—one of the main factors Daniel Carpenter identifies as underwriting bureaucratic institutions’ claims for autonomy.⁶⁴ Upon becoming war secretary, Poinsett declared that he “fully concur[red with]...the opinion of [his] predecessor,” while developing a far more involved case against survey aid than Butler had and increasing the department’s efforts to push legislative changes through Congress.⁶⁵

On Wednesday January 24, 1838, two weeks after Daniel Webster gave his celebrated speech on “Slavery in the District of Columbia,” Thomas Hart Benton took the Senate floor to introduce a bill to expand the army officer corps. Rather than deliver an original oration, however, Benton “read statement[s] from the Secretary of War, and high military officers” showing that “orders had been given ..., which it was physically impossible to carry out” with the number of officers available.⁶⁶ After hearing Benton’s speech, Senator James Buchanan announced that “[h]e was not aware ... that the regulations permitted” survey aid and borrowed a point directly from Poinsett, stating “There was some reason for [engineering aid in 1824], as civil engineers were scarce, but now the necessity no longer existed as they were scattered all over the country.”⁶⁷ Buchanan and Benton achieved a consensus “that some increase of the topographical and military engineers was necessary” but only if the bill also “prevent[ed] the employment of engineers by private companies.”⁶⁸ When Congress passed the Act of July 5, 1838, journals declared, “The communication of Mr. Poinsett ... became the foundation of the legislation ..., a sort of preamble to the law.”⁶⁹ Most notably for railroad policy, the bill declared, “Officers of the army shall not be separated from their regiments and corps for employment on civil works of internal improvement, or ... engage in the service of incorporated companies.”⁷⁰

RAILROADS, FORTIFICATIONS, AND THE SEARCH FOR A REPUBLICAN DEFENSE POLICY

In early December 1839, a steamboat named the *General Gaines* snagged and sank near Louisville.⁷¹ Ignoring—or perhaps spurred to action by—the omen of his eponymous ship’s ill-fated cruise and frustrated that Congress had ignored his “Plan for the Defence of the Western Frontier,” Gaines dispatched another memorial to Congress on New Year’s Eve.⁷² Anticipating the havoc another steamer, the Royal Navy’s *Nemesis*, would soon wreak in China,⁷³ Gaines proposed to “lay aside our old obsolete military books of last century ... and prepare to defend ourselves by the agency of this mighty power [steam], by which the invading foe will inevitably attack us.”⁷⁴ In his eyes, this meant replacing the nation’s coastal fortifications with floating batteries and a federally built 4,200-mile double-tracked rail network. Centered in Kentucky and Tennessee, it would stretch from the Atlantic coast “to the Missouri river north of the mouth of the Big Platte.”⁷⁵ This proposal marked the start of 13 months of frenzied railroad advocacy, which would spark policy debates illuminating the motives behind engineers like Totten’s mid-1830s turn against survey-aid policy.

After lobbying Congress, Gaines began a national lecture tour with a speech at the Mechanic’s Institute in St. Louis on November 15, 1840. Halfway through his oration he announced he felt tired and invited his independently famous wife to finish for him. This decision instantly earned Gaines’s lectures a reputation for spectacle—it was “an interesting scene to see the gallant old man, in full uniform, looking over the shoulder of his young and lovely wife, as she read with a clear and distinct voice ... emphasiz[ing] the words ‘my services in Canada were approved by a Madison, and in Florida censured by a Jackson.’”⁷⁶ The “novel and uncommon scene” of Myra Clark Gaines “addressing a large audience” helped the General draw crowds over the next two months in Cincinnati, Philadelphia, New York, Baltimore, and Philadelphia again—along with nationwide headlines.⁷⁷

These lectures brought attention to the defense strategy Gaines had outlined in his memorial to Congress. “Steam power has effected such a complete and astonishing revolution,” he argued, countries could any longer possess “the means of defence, unless they resort to” its use. Doing so, he declared, meant abandoning standing armies and fixed fortifications in favor of floating batteries and rapid responses from the nation’s “many fine volunteer corps—some finer than any in the regular service”—using “quick transportation ... provide[d] in his great system of railroads.”⁷⁸

General Gaines won many converts and many critics during his 13-month crusade. The *Baltimore Sun* declared, “The whole plan ... is well worthy of careful investigation.”⁷⁹ “Like the *Sun*,” the *New Orleans Daily Picayune* announced, “we are becoming converts to the Gaines system.”⁸⁰ Diarist and one-time New York Mayor Philip Hone, however, thought “Gen. Gaines and his wife have been making fools of themselves” after “taking the applause ... given for the novelty of the exhibition as ... the public opinion of its merits.”⁸¹ More diplomatically, *The Farmers’ Cabinet* recognized “the old hero” as “a brave man and a good fighter,” before adding that “He handled the king’s English as roughly as he did the Indians on the Withlacoochie” and “had better stick to his trade.” Regardless, the large audiences drawn “out of curiosity excited by the announcement that General Gaines *and his lady* would both deliver lectures” brought new attention to defense-policy debates that had gained steam across the Jacksonian Era.⁸²

The competing defensive visions that had organized these debates would receive their fullest articulation when Congress passed an 1840 resolution directing the War Department to deliver “a report of a full and connected system of national defence” like Gaines proposed.⁸³ The military establishment responded with a series of reports so thorough that the Totten-led engineering board feared they “may prove tedious.”⁸⁴ Addressing Gaines’s many-pronged defensive system, the War Department could only generate positive words about establishing a national foundry—already a pet project in military circles frustrated by their inability to keep pace with Third-System forts’ armament needs.⁸⁵

Historians have attributed this response to General Gaines’s “well known facility for making enemies.”⁸⁶ Gaines agreed.⁸⁷ Even the briefest examination of Gaines’s career lends at least some credence to this argument.⁸⁸ But personal animus can only explain so much.⁸⁹ Although the engineers’ response to Congress’s inquiry on Gaines’s defense strategy drips with contempt, it heaps its scorn on those “inculcating doctrines we believe to be highly dangerous” and “disturb[ing] the confidence of the public” in “the system of defence.”⁹⁰ This category was far larger than Gaines. He had merely offered a steam-powered restatement of long-standing objections to the officer corps’s engineer-led drive toward a defense policy based on coastal fortifications, standing armies, and professionalized expertise.⁹¹

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Gaines’s railroad advocacy represented the evolution of a long-standing tradition that sought to realign defense policy around the idealized

republican militia of Jeffersonian fantasy rather than standing armies and permanent fortifications. This counterintuitive association between republican ideology and railroad subsidies traced its roots to 1808, when Treasury Secretary Albert Gallatin proposed a \$20-million internal-improvements program. Providing frontier farmers a commercial outlet would promote the yeomanly virtue of industry. Equally important, roads and canals would “afford the means of a rapid concentration of ... a formidable body of militia on any given point.”⁹² They would thus empower the militia, displacing the standing armies that had long represented un-republican tools of tyranny in country-party ideology.⁹³ This view retained ideological power even after the militia’s mixed performance in the War of 1812. “Opposed in principle to a large standing army,” Secretary John C. Calhoun summarized, America’s “main reliance for defence must be on the militia.” Yet, the then-nationalist lamented, “the late war amply prove[d] ... the present state of our internal improvements” was inadequate to provide the “speedy communications” needed to make militias effective, necessitating federal spending to rectify the situation.⁹⁴

Though internal-improvement advocates like Gallatin had long voiced opposition to standing armies with revolutionary zeal, turnpikes and canals ill-afforded militias the alacrity necessary to supersede professional arms.⁹⁵ Railroads gave the debate new life. Their boosters like William Redfield reaffirmed belief in the “duty of a free nation to make preparation not by the increase of standing armies” but by preparing to mobilize civilian resources rapidly in times of war. Railroads, Redfield reasoned, made such a scheme practical by removing constraints of speed and seasonality that dogged turnpikes and canals.⁹⁶ In the decade following Redfield’s 1830 proposal, a railroad mania swept the United States—leaving the nation exceeding Europe’s total with almost 3,000 miles of track by 1840. Suddenly, railroad advocates’ hopes that railroads could render standing armies superfluous appeared significantly more realistic.

From 1831 to 1836, Secretary Lewis Cass repeated Redfield’s arguments within the War Department, scaring engineers with suggestions that such schemes would soon label their fortifications redundant. Referring to “a large standing military” as “that just dread of all free governments,” the former militia general argued that the nation “should be prepared to make [powerful use] of steam” to enable a more republican defense strategy. Cass contended that railroads would deter any invaders as they could throw “almost any amount of physical force ... in a few hours, upon any point threatened.” Thus, he came to “doubt the necessity of ... extensive permanent works.”⁹⁷ Totten

contended that internal improvements' primary wartime role was not directly military but "to sustain ... domestic commerce." This role, he added, depended upon "the security of the coastline" maintained by the navy and fortifications.⁹⁸ Nevertheless, Jackson—another one-time militia general who considered himself the restorer of Jeffersonian ideals—wrote to Congress "to add [his] concurrence in the views expressed by the secretary."⁹⁹ Cass and Jackson's endorsements lent arguments like Redfield's expert credibility. They also provided the template for subsequent military railroad advocacy, escalating the strategic debate between fortifications and infrastructure to an almost Manichean dualism.

When asked for a report on Gaines's scheme in 1840, the Corps of Engineers thus seized the opportunity to counterattack. Totten flipped Cass and Gaines's critique of fortifications in the age of steam on its head. The speed and maneuverability of steamships rendered constant preparedness more necessary. Coastal fortifications had become more—not less—important. As Mark Smith notes, Totten's answer thus stepped beyond Congress's direct questions to attack Cass's 1836 report, reflecting his increasingly proactive lobbying on behalf of the Corps's priorities through the ensuing decades.¹⁰⁰ "If a sudden attack with a large squadron of armed steamers ... is to be repelled" from New York, Totten would repeatedly ask, "in what way could the 100,000 or 200,000 new men poured into the city and environs by railroads, ... armed with muskets and field-pieces, aid the half-million of people already there?"¹⁰¹ The answer was self-evident. As Secretary Poinsett explained, this meant disagreement with anyone who "proposes to abandon the system of permanent defences as obsolete, and to rely entirely upon ... vast floating batteries and extensive lines of railroads."¹⁰²

These objections largely reflected a clear-minded assessment of defense strategy.¹⁰³ But institutional priorities were also at stake. Opponents of standing armies and fixed fortifications had long hoped with General Gaines that the transportation revolution would allow dispersed militiamen to act as "the *sword* and *shield of the Republic*"—supplanting "fortifications designed for the immediate protection of our seaports" in the nation's defense.¹⁰⁴ By the mid-1830s America's exploding railroad network made these hopes appear increasingly plausible. Thus, army engineers could little swallow the personal and institutional recipe they faced for capture by railroads when these roads appeared to threaten the Corps's core competency. Nevertheless, railroad advocates' anti-standing-army and antifortification

rhetoric, by itself, offers only a partial explanation for how engineering officers avoided capture.

POPULISM, PANIC, AND THE POLITICAL ECONOMY OF RETRENCHMENT

While Colonel Totten's engineering board occupied most of its 1840 report defending fixed fortifications, the topographical engineers—a separate army branch since 1838—focused on fiscal matters. In so doing, they reflected the broader political and economic context that shaped the defense-policy debates that turned the military establishment against survey aid. Contesting Gaines's claims about his plan's long-run frugality,¹⁰⁵ their report led Senator Franklin Pierce to label the General's proposal "extravagant"—despite the future president's sympathy with Gaines's overall vision.¹⁰⁶ These fiscal concerns represented more than a battle over budget priorities. They seemed to combine with a rising populist tide and mounting military commitments to undermine the Third System—even as the *Caroline* incident ushered in years of tension with Europe's greatest naval powers—motivating army engineers' retreat to defend their core institutional competencies.

A strong antiestablishment current arrived in Washington with President Jackson in 1829. By 1836, that current had sunk the Second Bank of the United States¹⁰⁷ and capsized John McLean's attempt to forge an administrative model of development founded upon tenure in office, bureaucratic autonomy, and internal improvements at the Post Office. That is, the early republic's only other major federal bureaucracy had already fallen in favor of rotation in office, mass democracy, and subservience to party when Cass mused that steam technology "may well lead us to doubt the necessity of ... extensive permanent works."¹⁰⁸ And, the Corps of Engineers, itself, fell under suspicions as a bastion of elitism.

Its critics were right—the Corps represented America's antebellum military establishment, and its officers took pride in leading the Army's professionalization. It controlled West Point, where it molded the post-1812 generations of officers into an increasingly cohesive, professionalized cadre who remained committed to careers in military service. Despite the Military Academy's engineering orientation, only the top 5 percent of its graduates would receive commissions in the Corps—creating a body with exceptionally strong esprit du corps while also provoking resentment among the Army's line officers. Again, Gaines is instructive. In a November-1840 speech, he mocked the Corps-run West Point: "I received my military education in a log cabin,

without French books, without French or other European professors.”¹⁰⁹ Since creating the Third System, the Corps of Engineers had also emerged as the primary institution concerned with nationwide defense strategy. Combined with their technical expertise, this made them key advisors to the War Department’s civilian leadership.¹¹⁰ Engineering officers would also make themselves heard as the Army’s most politically-active branch—often lobbying to defend their priorities and prerogatives from military and civilian critics who resented the Corps’s influence and elitism. None of these priorities came before the Third System, which began as 50 forts costing \$18 million not including armaments. But these plans would expand to 124 forts in 1836 and 186 works by 1851.¹¹¹

Ironically, the Corps had justified the Third System, in part, as a cheap, republican alternative to large standing armies. While they certainly disagreed with her blaming the military profession for war, they had thus mouthed words much like Myra Clark Gaines’s argument that her husband’s proposed rail network “provide[d] only against attack; it propose[d] not to be an aggressor”—inuring America against the imperial ambition to which Athens and Rome had succumbed.¹¹² The engineers were no strangers to classical allusion, and they had justified the Third System as “harmoniz[ing] ... with the institutions and spirit of the country” since introducing it in 1821. Coastal fortifications, they argued, limited the need for large standing armies—“militia practiced to the manœuvres of artillery” could man them in wartime.¹¹³

From the Third System’s 1821 introduction to the mid-1830s Congress had steadily appropriated funds for it. Yet, as [Table 1](#) shows, these appropriations would quickly become far more erratic. In 1835, Congress failed to pass any after a dispute over how much discretion to leave Jackson’s War Department while preparing for possible war with France. The next year saw Congress make up this deficit—but only after fortifications funding became embroiled in disputes over Cass’s report and the distribution bill. Though Cass had merely suggested exploring alternatives to the Third System, senators seized on it to argue against funding fortifications. With Western senators like John Bell seeing the fortification bill as “the one of the least importance,” it would await June 1836’s Deposit Bill before its passage. Though these funding fights were symptoms of broader partisan disputes, by 1836 engineering officers had learned that there were no guarantees about their funding.¹¹⁴

By the next year, panic-induced budget battles would combine with Jacksonian anti-elitism and long-standing republican distrust for a permanent military establishment to place the Corps of Engineers and their War-Department allies further on the defensive. America’s mid-1830s inflationary

Table 1. Appropriations and Expenditures on Fortifications, 1821–1842

	Fortifications		War department expenditures
	Appropriations	Expenditures	
1821	202	326	4,461
1822	370	425	3,112
1823	508	512	3,097
1824	646	531	3,341
1825	783	825	3,660
1826	815	829	3,943
1827	505	657	3,939
1828	715	663	4,146
1829	1,016	832	4,724
1830	892	937	4,767
1831	717	776	4,842
1832	653	586	5,446
1833	841	898	6,704
1834	871	637	5,696
1835	0	326	5,759
1836	2,276	890	12,169
1837	0	983	13,683
1838	1,015	518	12,897
1839	297	709	8,917
1840	878	179	7,097
1841	1,682	1,211	8,806
1842	250	964	6,612

Note: All figures are rendered in thousands of dollars. Fortifications appropriations did not include the cost of arming the forts, appropriations for which were earmarked separately through the Ordnance Department. The increased War-Department expenditures from 1836 to 1838 reflected both the Second Seminole War and heightened tensions with Britain and France.

Sources: Mark A. Smith, *Engineering Security: The Corps of Engineers and the Third System Defense Policy, 1815–1861* (Tuscaloosa: University of Alabama Press), 88–89; John Joseph Wallis, “Series Ea638,” in *Historical Statistics of the United States, Millennial Edition*, ed. Susan B. Carter, et al. (New York: Cambridge University Press, 2006).

boom witnessed unprecedented government land sales, contributing to the federal debt’s January-1835 retirement and federal surpluses reaching \$34 million by June 1836. That summer Jackson would sign the Deposit Act and

the Specie Circular. Along with the Bank of England raising the discount rate to stanch the flow of gold from Britain, this created a liquidity crunch, climaxing in May-1837 suspensions of specie payments across the United States—marking the transition from panic to depression.¹¹⁵ Although controversy persists over the length and depth of this depression, government receipts shrank substantially through 1843 (see Table 2). From 1837 to 1843, federal receipts peaked at 62% of 1836 levels with most years substantially below half of them.¹¹⁶ These years also witnessed eight states and a territory

Table 2. Federal Revenue, Expenses, and Debt, 1824–1842

	Revenue	Expenses	Surplus or Deficit	Debt
1824	19,381	20,327	−945	83,788
1825	21,841	15,857	5,984	81,054
1826	25,260	17,036	8,225	73,987
1827	22,966	16,139	6,827	67,475
1828	24,764	16,395	8,369	58,421
1829	24,828	15,203	9,624	48,565
1830	24,844	15,143	9,701	39,123
1831	28,527	15,248	13,279	24,322
1832	31,866	17,289	14,577	7,012
1833	33,948	23,018	10,931	4,760
1834	21,792	18,628	3,164	38
1835	35,430	17,573	17,857	38
1836	50,827	30,868	19,959	337
1837	24,954	37,243	−12,289	3,308
1838	26,303	33,865	−7,562	10,434
1839	31,483	26,899	4,584	3,573
1840	19,480	24,318	−4,837	5,251
1841	16,860	26,566	−9,706	13,594
1842	19,976	25,206	−5,230	20,201

Note: All figures are rendered in thousands of dollars. The figures for 1843 (\$8,303,000 in revenue and \$11,858,000 in expenditures) are excluded from the table because these only include the first six months of the year before the federal government switched to a July-to June fiscal year.

Source: John Joseph Wallis, “Series Ea638,” in *Historical Statistics of the United States, Millennial Edition*, ed. Susan B. Carter, et al. (New York: Cambridge University Press, 2006).

default upon debts contracted largely through internal-improvements spending.¹¹⁷

With the surplus distributed and federal receipts declining, federal fiscal constraints became powerfully binding. Moreover, the federal debt's retirement, Jackson defeating the Bank of the United States, and the growing specter of state-level insolvency weakened federal mechanisms to secure credit—further tightening this constraint. The Corps of Engineers certainly felt these fiscal constraints through heightened budget battles and growing appropriations shortfalls vis-à-vis planned works.

These financial constraints bound more tightly because these years witnessed a confluence of military crises. December 1835 marked the beginning of the Second Seminole War—a long, unpleasant quagmire that stretched the War Department's resources thin. Even as war expanded manpower demands, 17 percent of the officer corps joined an exodus from the service.¹¹⁸ December 1837's *Caroline* incident would announce a half-dozen years of tension with Britain, which strengthened the engineers' argument for fortification appropriations. Nevertheless, it deepened the Corps's belief in the urgency of completing the Third System—a goal that remained unachieved in the 1850s—rather than expending manpower and funds on other projects like railroads.¹¹⁹

All told, this context left the military's most elitist branch—which drew the ire of republican ideologues and budget hawks alike for its expensive permanent fortifications—perceiving an exceptionally credible threat to its institutional prerogatives. Thus, it responded to policy challenges by retreating from its bureaucratic imperialism into transportation policy to defend its core competency—the foundation of bureaucratic institutions' claims for autonomy and political influence per political scientist Daniel Carpenter—in fortifications that had been threatened by fiscal and manpower pressures.¹²⁰

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Worried that “the Corps of Engineers is in the greatest peril,” Totten increasingly acted as both its chief engineer and its chief whip politically.¹²¹ He regularly pestered fellow officers to “address a private letter to the secretary of war” or “come at once” to lobby to defend fortification appropriations, to create of a corps of sappers and miners, or to ensure its continued control of West Point.¹²² Totten let engineers know that their superiors believed press coverage of antifortification arguments' flaws “could not fail to enlighten the public mind” and “hope[d] that some of the officers of the corps might ... take the matter in hand.”¹²³ Moreover, Totten strategized to maximize reports'

political effect. In a letter marked “private,” he told Poinsett that “there are reasons for omitting my name” from a board on fortification policy: He had already prepared “several reports on ... fortifications,” prompting some to ask, “Why have we only the reports of Col. Totten?”¹²⁴ With Totten’s encouragement, however, other engineers would offer creative defenses of fortification policy. For example, Lieutenant Colonel René Edward De Russey offered a developmentalist case for fortification expenditures’ economic value. “[I]ndependent of the security it affords,” he wrote, fortifications spending “create[d] a revenue by bringing out the latent resources of the country.”¹²⁵ Throughout, Totten and his fellow engineers worked hard to defend and extend the Corps’s institutional power and autonomy.

Nonfinancial personal incentives joined institutional incentives motivating officers’ opposition to Gaines’s scheme. More than they ever succumbed to cognitive capture by railroads, engineering officers defined themselves through a valorization of the Corps itself—particularly its coastal fortifications. Again, Totten was indicative. When gadfly engineering Major William Chase expressed skepticism about the Corps’s prominence, Totten “admit[ted] no misgivings as to the eminent position which the Corps” possessed because “it has a noble cause.”¹²⁶ Totten’s other letters make it hard to imagine he would have disagreed with his eulogist and fellow-engineer declaring “the fortification of our seaboard frontier ... the great work of his life.”¹²⁷ They show Totten maintaining a year’s correspondence because he was “not ... willing to stop short of ... perfection” designing the castle buttons for engineers’ uniforms and complaining when the *Army Register* listed his name without mentioning the Corps.¹²⁸ Other officers reflected Totten’s pride more closely than Chase’s jaundiced view.¹²⁹

As both Skelton and Angevine point out, attacks on fortifications thus represented attacks on the engineers’ worldview and life’s work.¹³⁰ They had not “doubted ... the genuineness of [Major Chase’s] *Esprit du Corps*” when he questioned their pay or wrote a Senate critic that “favoritism exists at our national school.”¹³¹ But calling some fortifications “a useless waste of public money” was a personal affront.¹³² Gaines had likewise made “a butt, a mockery, a laughing stock” of engineers when he declared “that steam power ... must soon so change the nature of all military operations as to render FIXED fortifications a butt, a mockery, a laughing stock ... for any of the purposes of *national defense*.”¹³³ For these architects of America’s Third System of Defense, personal pride thus aligned with institutional interests to overwhelm the incentives for their capture by railroad interests during the late 1830s. With public debates framing railroads as an alternative to

permanent fortifications and the political-economic context turning hostile, they retreated to their core competency and attacked their one-time bureaucratic outpost in transportation policy.¹³⁴

THE OFFICER CORPS AND RAILROAD POLICY AFTER THE ACT OF JULY 5, 1838

Congress's 1838 repeal of the General Survey Act codified the military establishment's turn against railroad aid. It removed much of the railroads' engagement with the War Department—obviating their incentive to capture officers' allegiance beyond hopes to gain expert testimony on their lines' military necessity.¹³⁵ At the same time, career-minded officers faced a different calculus, with railroad payrolls no longer featuring active officers, the Army offering more competitive salaries, and its civilian leadership declaring the Third System “the settled policy of the country.”¹³⁶ Military advocacy for federal railroad policy dwindled still further, but the terms of debate remained polarized.

The press had internalized Cass and Gaines's arguments by January 1841 when the latter went “south to fight ignorance in Baltimore, and Indians in Florida,” ending his most active 13 months of railroad advocacy.¹³⁷ Defense-policy debates would continue to pit railroads against fortifications.¹³⁸ Pennsylvania's Andrew Stewart would echo Gaines in Congress, proposing a national railroad network on the eve of the Mexican War.¹³⁹ And, in 1851, Congress raised the issue when directing the War Department to report on fortification strategy. Among other questions, it asked, “How far [has] the invention and extension of railroads have superseded or diminished the necessity of fortifications on the seaboard?”¹⁴⁰

In response, Totten and other engineers restated their earlier arguments against Cass and Gaines. De Russey stressed railroads' fragility.¹⁴¹ Totten repeated his assessment that railroads “have little or no bearing on the immediate means of defence.”¹⁴² After all, Third-System fortifications existed to prevent enemy navies from accessing bays and channels—something rapid troop movements could not forestall.¹⁴³

However, one gadfly engineering major would loudly reiterate Cass and Gaines's earlier case while foreshadowing the military's subsequent railroad-policy track. This was not the first time William Chase took Gaines's mantle promoting railroad policy. Chase had headed the Alabama and Florida after having—like the earlier engineering major James Graham—been involved in attempts to link Montgomery and Pensacola with rails.¹⁴⁴ Now, the major

contended, railroads “greatly diminish[ed] the necessity of adding to the ... fortifications on the seaboard.”¹⁴⁵ Moreover, Chase followed Gaines’s lead by publicizing his congressional appeal—publishing his report in *De Bow’s Review*.¹⁴⁶ Chase’s report also foreshadowed the route railroad advocacy would soon take—including a non sequitur about how he “hoped that Congress will not long delay ... in making such a donation of lands as will enable private enterprise to ... complete a railway ... to San Diego.”¹⁴⁷

Shortly after sunset on July 12, 1853, Jefferson Davis rose to speak at a banquet honoring President Pierce at the Merchant’s Hotel in Philadelphia. Although Davis would soon preside over the Confederacy’s rebellion, in 1853 he was charged with the Union’s defense as its secretary of war. His speech addressed potential threats to the “integrity of the Pacific possessions” recently won from Mexico and his proposed solution: “by skip[ping] the mountains, tunnel[ing] them, or pass[ing] them by any means known to civil engineering, binding men together ... [and, answering] the question of protection.”¹⁴⁸ This speech marked a transformation in the military’s stance vis-à-vis railroad policy. Henceforth, it campaigned aggressively for federal efforts to effect a transcontinental’s construction. The surviving disagreement revolved around the project’s route rather than its general advisability.¹⁴⁹ This reflected the Secretary’s expansive vision of the War Department’s mission—a vision inherited in part from his one-time commanding officer, General Gaines.¹⁵⁰ Yet Davis’s vision had room for railroad aid *and* coastal fortifications, as well as curious projects like the experimental camel corps.¹⁵¹

The context had also changed. By the mid-1850s, the skeleton of the East’s rail network was approaching completion. If railroads were to render standing armies or fortifications redundant, the damage was already done. Along with America’s Mexican-War conquests, this changed the terms of railroad-policy debates. Transcontinental railroads represented a different policy question than their eastern counterparts had. Located in the interior West, they no longer threatened the Corps’s coastal fortifications program but rather promised interior communications with America’s new Pacific outpost.¹⁵² Finally, Davis and Chase’s baldly sectional motives for promoting a Pacific railroad marked another departure in the military’s railroad-policy activism—prefiguring the coming Civil War.¹⁵³

Fort Sumter’s surrender would not only announce the Civil War but also the Third System’s obsolescence. The conflict would confirm Major Richard Delafield’s little-headed Crimean-War observations that recent advancements

in large-caliber ordnance, rifled artillery, and steamships meant “earthen parapets are gaining ... ascendancy” over expensive masonry works like Third-System fortifications.¹⁵⁴ By then, the same commitments that had helped engineering officers avoid capture by railroad interests during the 1830s would leave them ill-equipped to recognize the implications of changing technology.

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As Daniel Carpenter and David Moss suggest in their call to arms for a new wave of empirical research, “reaching a new level in the treatment of regulatory capture will require” attention to the various institutional and cultural channels driving capture and the multivariate “mechanisms for mitigating it.”¹⁵⁵ During the 1830s, the Corps of Engineers evaded capture by railroads—despite a textbook recipe for it. With survey duty augmenting ill-paid officers’ salaries, giving them access to networks for career advancement, and freeing them from the monotony of garrison duty, they faced strong personal incentives to support railroad aid. The same applied to Corps-of-Engineers and War-Department leaders hoping to extend their institutional power. Both also existed within a fertile ground for cognitive capture. Nevertheless, a confluence of factors mitigated these strong personal and institutional incentives. Ascendant Jacksonian populism and fiscal austerity following the Panic of 1837 combined to create an exceptionally hostile environment for the Corps of Engineers’ institutional priority: permanent coastal fortifications. This hostile context made railroad advocates’ claims that rail-aided militias would soon supplant fortifications and standing armies appear to be a credible threat to the Corps’s institutional interests. It set the incentives driving capture at loggerheads with the engineers’ core competency—the basis of their claims to administrative autonomy, appropriations, and political influence. Perhaps none of this would have mattered without the engineers’ *esprit du corps*, but they took pride in an institutional mission of national defense they saw embodied in fortifications. All told, engineering officers and War-Department leadership, generally, avoided capture and retreated from the posture of bureaucratic imperialism to defend the engineers’ core competency. This experience suggests that fiscal austerity and populist distrust of elites could combat capture by prompting a retrenchment to administrative agencies’ core competencies. This mechanism, however, depends upon agencies’ organizational interests aligning with the public interest and the presence of an *esprit de corps* among its officials that is far from universal in agencies prone to capture.

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NOTES

1. *New York Herald*, January 12, 1841, 2.
2. In the decades before Stigler's article, scholars with various disciplinary and political commitments arrived at his conclusion "that, as a rule, regulation is acquired by the industry and is designed and operated primarily for its benefit." Indeed, Stigler noted that economists denouncing "the ICC for its pro-railroad policies ... has become a cliché of the literature." His contribution was calling upon economists to move beyond this criticism to treat regulatory policy as a market with regulated firms as consumers. George Stigler, "The Theory of Economic Regulation," *Bell Journal of Economics and Management Science* 2, no. 1 (Spring 1971): 3, 17; Samuel P. Huntington, "The Marasmus of the ICC: The Commission, the Railroads, and the Public Interest," *Yale Law Journal* 61, no. 4 (April 1952): 467–509; Gabriel Kolko, *The Triumph of Conservatism: A Reinterpretation of American History, 1900-1916* (New York: The Free Press, 1963); Thomas K. McCraw, "Regulation in America: A Review Article," *Business History Review* 49, no. 2 (Summer 1975): 159–83; William J. Novak, "A Revisionist History of Regulatory Capture," in *Preventing Regulatory Capture: Special Interest Influence and How to Limit It*, ed. Daniel Carpenter and David Moss (New York: Cambridge University Press, 2013), 25–48.
3. Stigler explains that firms sought to use state power to benefit their bottom lines via direct subsidy, regulatory barriers to entry, affecting markets for substitute or complement products, and price-fixing. Though he echoes Mancur Olson's logic on factors shaping industries' collective action vis-à-vis regulators, critics have noted that Stigler and other early capture theorists offered limited insight into which of various interested groups would capture regulators—a critique partially mitigated by later formalizations, though empirical work accounting for pluralist critiques remains important. Stigler, "Theory of Economic Regulation"; Richard Posner, "Theories of Economic Regulation," *Bell Journal of Economics and Management Science* 4 (1974): 335–58; McCraw, "Regulation in America," 171–72; Sam Peltzman, "Toward a More General Theory of Regulation," *Journal of Law & Economics* 19, no. 2 (August 1976): 211–40; Ernesto Dal Bó, "Regulatory Capture: A Review," *Oxford Review of Economic Policy* 22, no. 2 (Summer 2006): 206–7.
4. Jean-Jacques Laffont and Jean Tirole, *A Theory of Incentives in Procurement and Regulation* (Cambridge, MA: MIT Press, 1993); Jean-Jacques Laffont and David Martimort, "Separation of Regulators against Collusive Behavior," *RAND Journal of Economics* 30, no. 2 (Summer 1999): 232–62; Dal Bó, "Regulatory Capture," 207–11.
5. There are, however, legitimate reasons why firms and regulators would draw from the same talent pool—most notably, industry expertise. Stigler, "Theory of Economic Regulation," 13; William D. Berry, "Utility Regulation in the States: The Policy Effects of Professionalism and Salience to the Consumer," *American Journal of Political Science* 23, no. 2 (May 1979): 263–77; Dal Bó, "Regulatory Capture."
6. In an article reviewing regulatory capture theory, Ernesto Dal Bó notes that it—like the term regulation itself—could take narrow or broad meanings. The narrow definition concerns regulations (ostensibly) reining in natural monopolies in utility industries. "According to the broad interpretation," however, "regulatory capture is the process through which special interests affect state intervention in any of its forms, which can include areas as diverse as the setting of taxes, the choice of foreign or monetary policy, or

the legislation affecting R&D.” Though theorists have primarily focused upon the former, their insights generally apply equally to the broader definition as well. Dal Bó, “Regulatory Capture,” 203.

7. Luigi Zingales, “Preventing Economists’ Capture,” in *Preventing Regulatory Capture*, 124–51.

8. The War Department was one of two federal agencies that regularly interacted with railroads—dispensing survey aid to them until Congress ended the practice in 1838. It exercised significant discretion in this role, and Congress often deferred to its policy advice. Thus, railroads sought to capture engineering officers’ support both to claim survey aid directly and to influence legislative policy. With the General Survey Act’s 1838 repeal, the former motive would disappear while the latter would significantly weaken as the federal government largely retreated from railroad policy—making the mid-1830s the most interesting as a case study in avoiding capture.

9. Concern with cognitive or cultural capture has grown precipitously since responses to the 2007–2008 financial crisis highlighted “the attitude [that] took hold that what was good for Wall Street was good for the country,” though cognitive capture has implicitly been a part of regulatory capture theory since Samuel Huntington accused the ICC of conflating the interests of railroads with those of the nation. Simon Johnson, “The Quiet Coup,” *The Atlantic* 303, no.4 (May 2009): 46–55; Huntington, “Marasmus of the ICC,” 497–98; Simon Johnson and James Kwak, *13 Bankers: The Wall Street Takeover and the Next Financial Meltdown* (New York: Pantheon Books, 2010); Joseph Stiglitz, *The Price of Inequality* (New York: W.W. Norton & Co., 2012); Russ Roberts and Joseph Stiglitz, *EconTalk*, July 9, 2012; James Kwak, “Cultural Capture and the Financial Crisis,” in *Preventing Regulatory Capture*, 71–98.

10. One of the civic-republicanism literature’s major contributions has been uncovering the role concern with “corruption” played in early American political thought. For Revolutionary-Era Whigs, Gordon Wood explains, “corruption” was “a technical term of political science, rooted in the writings of classical antiquity, made famous by Machiavelli, developed by classical republicans of the seventeenth century, and carried into the eighteenth century by nearly everyone who laid claim to knowing anything about politics.” This idea, going back to Plato and Aristotle, involved the common good being subordinated to special interest—or, as William Novak has argued, the same problem capture theory confronts. Gordon S. Wood, *The Creation of the American Republic, 1776-1787* (1969; repr., Chapel Hill: University of North Carolina Press, 1998), 32–33; J. G. A. Pocock, *The Machiavellian Moment: Florentine Political Thought and the Atlantic Republican Tradition* (Princeton, NJ: Princeton University Press, 1975); Novak, “Revisionist History of Regulatory Capture,” 38–46. See also, [James Madison], “The Federalist no. 10,” *New York Packet*, November 23, 1787; Charles F. Adams, Jr., “The Government and the Railroad Corporations,” *North American Review* 112, no. 230 (January 1871), 31–61; Pauline Maier, “The Revolutionary Origins of the American Corporation,” *William and Mary Quarterly* 50, no. 1 (January 1993): 51–84; Robert E. Wright, “Capitalism and the Rise of the Corporate Nation,” in *Capitalism Takes Command: The Social Transformation of Nineteenth-Century America*, ed. Michael Zakim and Gary Kornblith (Chicago: University of Chicago Press, 2012), 145–68. John Lauritz Larson has identified internal improvements as a key area where Americans grappled with these concerns. John Lauritz Larson, *Internal*

Improvement: National Public Works and the Promise of Popular Government in the Early United States (Chapel Hill: University of North Carolina Press, 2001), 3, 257.

11. This post-1887 chronology reflects the significance of coercive public-utility regulation within capture theory, as the ICC inaugurated this regulatory model at the federal level. Nevertheless, nineteenth-century concerns with corruption reflect the applicability of capture's broader definition where special interests seek to control any government policy. Huntington, "Marasmus of the ICC"; Kolko, *The Triumph of Conservatism*; Stigler, "Theory of Economic Regulation"; Posner, "Theories of Economic Regulation"; Novak, "Revisionist History of Regulatory Capture," 32.

12. Novak, "Revisionist History of Regulatory Capture," 32–33.

13. Novak compellingly highlighted the extent of state and local authority founded in common-law doctrine and theories of police power: William Novak, *The People's Welfare: Law and Regulation in Nineteenth-Century America* (Chapel Hill: University of North Carolina Press, 1996). Moreover, historians have reinvigorated long-accepted arguments that state and local governments played a key role in economic development. See, for example, Colleen A. Dunlavy, *Politics and Industrialization: Early Railroads in the United States and Prussia* (Princeton, NJ: Princeton University Press, 1994).

14. Stephen Skowronek, *Building a New American State: The Expansion of National Administrative Capacities, 1877-1920* (Cambridge: Cambridge University Press, 1982), 19. New institutionalist historians and American-political-development scholars have supported Skowronek's assessment with studies of federal armories, the Army in the West, and the Post Office. Merritt Roe Smith, *Harpers Ferry and the New Technology: The Challenge of Change* (Ithaca, NY: Cornell University Press, 1977); Merritt Roe Smith, "Military Entrepreneurship," in *Yankee Enterprise: The Rise of the American System of Manufactures*, ed. Otto Mayr and Robert C. Post (Washington: Smithsonian Institution Press, 1981), 63–102; David A. Hounshell, *From the American System to Mass Production, 1800–1932* (Baltimore: Johns Hopkins University Press, 1984); Richard R. John, *Spreading the News: The American Postal System from Franklin to Morse* (Cambridge, MA: Harvard University Press, 1998); Lindsay Schakenbach Regele, *Manufacturing Advantage: War, the State, and the Origins of American Industry, 1776-1848* (Baltimore: Johns Hopkins University Press, 2019). Summarizing these historiographical developments, Novak argues that "The Myth of the 'Weak' American State" has never been true while Brian Balogh provides an explanation for this myth's persistence—these efforts constituted "A Government Out of Sight." William J. Novak, "The Myth of the 'Weak' American State," *American Historical Review* 113, no. 3 (June 2008): 752–72; Brian Balogh, *A Government Out of Sight: The Mystery of National Authority in Nineteenth-Century America* (New York: Cambridge University Press, 2009).

15. Thomas McCraw offered the classic treatment of regulator as entrepreneur, an idea further developed by Richard John and Daniel Carpenter. They depict energetic state actors leveraging a reputation for competence to carve out a sphere of bureaucratic autonomy. Thomas K. McCraw, *Prophets of Regulation* (Cambridge, MA: Belknap Press, 1984); Richard R. John, "Governmental Institutions as Agents of Change: Rethinking American Political Development in the Early Republic, 1787-1835," *Studies in American Political Development* 11 (Fall 1997): 347–80; Daniel Carpenter, *The Forging of Bureaucratic Autonomy: Reputations, Networks and Policy Innovation in Executive Agencies, 1862-1928*

(Princeton, NJ: Princeton University Press, 2001). Scholars have offered varying interpretations of government officials' entrepreneurship with John's depiction of the Postmaster General John McLean approaching hagiography while Virginia-School political economist Gordon Tullock castigated "bureaucratic free enterprise" and "imperial bureaucratic systems" as at least as dangerous as regulators' capture by industry. John, *Spreading the News*; Gordon Tullock, *Bureaucracy* (1965; repr., Indianapolis, IN: Liberty Fund, 2005), 178–88. Between these poles, stand organizational historians like Robert Wiebe, Alfred Chandler, and Louis Galambos who reframed American history around the development of large-scale hierarchical organizations. Robert H. Wiebe, *The Search for Order, 1877-1920* (New York: Hill and Wang, 1967); Louis Galambos, "The Emerging Organizational Synthesis in Modern American History," *Business History Review* 44, no. 3 (Autumn 1970): 279–90; Alfred D. Chandler, Jr., *The Visible Hand: The Managerial Revolution in American Business* (Cambridge, MA: Belknap Press, 1977). Though these literatures focus on the Gilded Age and Progressive Era, their conceptualization of bureaucratic entrepreneurship and organizational imperatives apply to the Jacksonian-Era engineers who took the lead in the professionalization of America's Army in addition to John's Post Office. Engineering officers faced incentives to expand their branch of the Army just as any of these bureaucratic officials do—incentives aligning with those of railroad-industry figures hoping to capture additional engineering aid. As Samuel Huntington briefly summarized, "It can be extremely difficult to draw the line between the soldier giving professional advice to Congress as to what the country needs for its defense and the soldier lobbying Congress." Samuel P. Huntington, *The Soldier and the State* (Cambridge, MA: Harvard University Press, 1957), 180; Huntington, "Marasmus of the ICC," 467; William B. Skelton, *An American Profession of Arms: The Army Officer Corps, 1784-1861* (Lawrence: University Press of Kansas, 1992).

16. Forest G. Hill, "Government Engineering Aid to Railroads before the Civil War," *Journal of Economic History* 11, no. 3 (Summer 1951): 235–46; Forest G. Hill, *Roads, Rails & Waterways: The Army Engineers and Early Transportation* (Norman: University of Oklahoma Press, 1957); James D. Dilts, *The Great Road: The Building of the Baltimore and Ohio, the Nation's First Railroad, 1828-1853* (Stanford, CA: Stanford University Press, 1993); Dunlavy, *Politics and Industrialization*; Robert G. Angevine, "Individuals, Organizations, and Engineering: U.S. Army Officers and the American Railroads, 1827-1838," *Technology and Culture* 42, no. 2 (April 2001): 292–320; Robert G. Angevine, *The Railroad and the State: War, Politics, and Technology in Nineteenth-Century America* (Stanford, CA: Stanford University Press, 2004), 27–48, 65–105.

17. Michel Chevalier, *Society, Manners and Politics in the United States* (Boston: Weeks, Jordan and Company, 1839), 272; Hill, *Roads, Rails & Waterways*; Angevine, *Railroad and the State*, 22–40.

18. *Albany Argus*, September 18, 1832, 2; *American Railroad Journal* 1 (August 11, 1832): 513; *American Railroad Journal* 1 (September 1, 1832): 562.

19. Dunlavy, *Politics and Industrialization*, 129; Larson, *Internal Improvement*, 190–91.

20. Strictly speaking, railroads' efforts to obtain engineering aid stood on the boundary between rent seeking and regulatory capture. The ends they sought—obtaining subsidized use of engineering officers—have traditionally been treated in terms of rent seeking.

Nevertheless, the means through which railroads sought engineering aid and the incentives faced by the officer corps can be better understood within the framework of capture, broadly defined. Engineering officers exercised significant discretion over survey-aid policy and influence over lawmakers. Moreover, from 1827 to 1838, engineering officers assigned to survey duty simultaneously drew salaries from both railroads and the War Department—creating a hothouse version of capture theory’s revolving door.

21. Lewis Cass, “Annual Report of the Secretary of War,” November 30, 1835, *American State Papers: Military Affairs* (hereafter, *ASP:MA*), 5:630–31; L. Cass to A. Jackson, April 7, 1836, *ASP:MA*, 6:369–73.

22. John C. Calhoun, “Report on Roads and Canals,” in *Works of John C. Calhoun*, ed. Richard Cralle (New York: 1856), 5:40–54; Angevine, *Railroad and the State*, 15–18.

23. S. Bernard, J. D. Elliot, and J. G. Totten to J. C. Calhoun, February 7, 1821, *ASP:MA*, 2:310; Robert S. Browning, III, *Two if by Sea: The Development of American Coastal Defense Policy* (Westport, CT: Greenwood Press, 1983), 29–34.

24. S. Bernard and J. G. Totten, “Report,” October 5, 1823, in *Report of the Commissioners Appointed by the Legislature of the State of New-Jersey, for the Purpose of Exploring the Route of a Canal to Unite the River Delaware, Near Easton, with the Passaic, Near Newark* (Morristown, NJ: Jacob Mann, 1823), 65. Bernard and Totten would also serve alongside a civil engineer on the Board of Engineers for Internal Improvements President Monroe established following 1824’s General Survey Act until the French engineer’s 1831 resignation when it fell into abeyance. Hill, *Roads, Rails & Waterways*, 49–78.

25. Hill, *Roads, Rails & Waterways*, 30–34. This represented merely one front of Calhoun’s bureaucratic entrepreneurship at the War Department, where “his impact ... was similar to Hamilton’s on the Treasury Department.” Skelton, *American Profession of Arms*, 117.

26. *U.S. Statutes at Large*, 18th Cong., 1st sess. (April 30, 1824), 4:22–23.

27. A. Macomb to J. Barbour, November 20, 1827, *ASP:MA*, 3:630; Barbour, “Showing the Condition of the Military Establishment and Fortifications,” November 26, 1827, *ASP:MA*, 3:616.

28. A. Macomb to J. Barbour, November 20, 1827, *ASP:MA*, 3:630.

29. Like Barbour, they linked railroad surveys with the canal and road surveys that enjoyed explicit legislative authorization. And, in Porter’s words, they “express[ed] an opinion [to Congress] that the liberal appropriations” aiding canal and railroad construction “were amongst the most valuable acts of its legislation, and a hope that the same policy may be continued.” L. Cass to A. Jackson, April 7, 1836, *ASP:MA*, 6:373; John Eaton, “On the Importance of the Topographical Engineers in the Army,” *ASP:MA* 4:631; P. B. Porter, “Annual Report from the Department of War,” November 24, 1828, *ASP:MA*, 4:2.

30. One of the most prominent army engineers surveying roads at the time, William McNeill, insightfully explained that Cass’s policy stretched “the small appropriation by Congress of but \$30,000” over many roads in “not only the most impartial, but also the most effective” way. *American Railroad Journal* 1 (August 11, 1832), 513; *American Railroad Journal* 1 (September 1, 1832), 562. Cass’s move also shielded engineering aid from criticism as a handout to politically connected monopolists—a significant concern during the Jacksonian era that played a major role in the rise of general incorporation laws. *Albany Argus*, September 18, 1832, 2; Maier, “Revolutionary Origins of the American Corporation”;

Angevine, "Individuals, Organizations, and Engineering," 308–12; Wright, "Capitalism and the Rise of the Corporate Nation."

31. Quoted in Angevine, *Railroad and the State*, 31.

32. All 14 army engineers who served the road would remain engaged in railroad engineering, with Stephen Long and William Gibbs McNeill becoming some of the most prominent American railroad engineers. Indeed, these officers would remain more committed to railroad service than military service in the subsequent decade. Hill, *Roads, Rails & Waterways*, 101–6, 140–52, esp. 105; Dilts, *The Great Road*, 49–80.

33. Engineering, mathematics, and natural philosophy would represent 71 percent of its four-year curriculum by the mid-1830s. Browning, *Two if By Sea*, 62; Skelton, *American Profession of Arms*, 167–72; Angevine, *Railroad and the State*, 22–40.

34. Although recent scholarship on the limits of capture has debated the degree of legislative control over administrative agencies' regulatory rule making, prior to 1946's Administrative Procedures Act legislators often relied on agencies' recommendations to create specific legislation. Thus, the reverse dynamic was often present with entrepreneurial nineteenth-century administrators wielding significant influence over legislation. McCraw, *Prophets of Regulation*; John, "Governmental Institutions"; Carpenter, *Forging of Bureaucratic Autonomy*; Steven P. Croley, *Regulation and Public Interests* (Princeton, NJ: Princeton University Press, 2008).

35. *National Gazette*, August 9, 1831, 1.

36. *The New-London Gazette*; October 22, 1834, 1; *Daily National Intelligencer*; November 13, 1833, 3; *Newark Daily Advertiser*, October 4, 1834, 2; *Richmond Enquirer*, November 29, 1833, 4.

37. Angevine, *Railroad and the State*, 41–63; E. G. Campbell, "Railroads in National Defense, 1829-1848," *Mississippi Valley Historical Review* 27, no. 3 (Dec. 1940): 361–78; James Arthur Ward, *Railroads and the Character of America, 1820-1887* (Knoxville: University of Tennessee Press, 1986), 12–55.

38. Railroads used claims of military utility to strengthen their claims before not only Congress but also the War Department itself. After all, the Department was no more immune from political considerations than the solons. In one egregious example, a handful of cotton planters expedited military support for a 26-mile road linking their plantations to port by sending a letter from a former congressman carried by a friend and Battle-of-New-Orleans compatriot of President Jackson. Angevine, "Individuals, Organizations, and Engineering," 308–12.

39. James D. Graham, "Report to the President and Directors of the Alabama, Georgia, and Florida Railroad Company," *American Railroad Journal* 5 (July 23, 1836): 452–55; William S. Campbell, *Report on the Alabama, Florida and Georgia Railroad* (E. G. Dorsey, 1838), 5.

40. Campbell, *Report on the Alabama, Florida and Georgia Railroad*, 111–13.

41. S. Doc. No. 244, 25th Cong., 2d sess. (1837–38), in *Congressional Edition*, Vol. 317 (U.S. Government Printing Office, 1838); *Senate Journal*, June 25, 1838, 493.

42. H.R. Exec. Doc. No. 198, 25th Cong., 3d Sess., at 1–2.

43. *Senate Journal*, June 25, 1838, 493; January 31, 1839, 179–80.

44. *American Railroad Journal* 5 (October 15, 1836): 642; Campbell, "Railroads in National Defense"; Ward, *Railroads and the Character of America*, 12–55; Angevine, *Railroad and the State*, 9–14.

45. James Barbour typified this trend, veering from strict constructionism before the War of 1812 to strong postbellum advocacy for an internal improvements fund organized within the national bank on grounds of concern with the nation's defense. Charles D. Lowery, *James Barbour: A Jeffersonian Republican* (Tuscaloosa: University of Alabama Press, 1984), 79, 97–107, 172–73, 230; Angevine, *Railroad and the State*, 18–21. Lewis Cass explicitly based his suggested defensive strategy on analysis of the War of 1812. L. Cass to A. Jackson, April 7, 1836, *ASP:MA*, 6:366–76.

46. *Baltimore Sun*, January 18, 1841, 2; Edmund P. Gaines, "A Plan for the Defence of the Western Frontier," H.R. Doc. No. 311. 25th Cong., 2d Sess., at 45 (1838); Gaines, "Report of a general inspection of the military posts of the Western Department," February 27, 1829, *ASP:MA*, 4:104–6. For the revolutionary implications of steamboats' military use on a global scale, see Daniel R. Headrick, *The Tools of Empire: Technology and European Imperialism in the Nineteenth Century* (Oxford: Oxford University Press, 1981).

47. For example, Secretary Cass eulogized railroad's defensive value in similar terms: L. Cass to A. Jackson, April 7, 1836, *ASP:MA*, 6:373. Seven decades later, British geographer Halford Mackinder would systematize a theory much like Gaines and Cass's arguments in one of the most influential grand strategic analyses of the twentieth century—one which would be largely vindicated by subsequent events. Halford Mackinder, "The Geographical Pivot of History," *The Geographical Journal* 23, no. 4 (April 1904): 421–37; Paul M. Kennedy, *The Rise and Fall of British Naval Mastery* (Amherst, NY: Humanity Books, 1976), 196.

48. J. G. Totten to C. M. Conrad, November 1, 1851, in *Reports of Committees of the House of Representatives Made During the Second Session of the Thirty-Seventh Congress* (Washington, DC: Government Printing Office, 1862), 4:349; *Boston Commercial Gazette*, July 16, 1827; *The New-London Gazette*; October 22, 1834, 1; *Daily National Intelligencer*; November 13, 1833, 3; *Newark Daily Advertiser*, October 4, 1834, 2; *Richmond Enquirer*, November 29, 1833, 4; James Barbour, "Showing the Condition of the Military Establishment and Fortifications," November 26, 1827, *ASP:MA*, 3:616; Porter, "Annual Report," November 24, 1828, *ASP:MA*, 4:2; A. Macomb to J. Barbour, November 20, 1827, *ASP:MA*, 3:630. L. Cass to A. Jackson, April 7, 1836, *ASP:MA*, 6:366–73; J. G. Totten to C. Gratiot, March 29, 1836, *ASP:MA*, 6:379–96.

49. B. F. Butler, "Annual report of the Secretary of War," December 3, 1836, *ASP:MA*, 6:811; "Extract from a communication from the chief engineer to Secretary of War, dated November 18, 1829," *ASP:MA*, 5:452.

50. Officers ranked below major made between \$774 and \$955 annually, whereas assistant civil engineers made \$1,000 to \$1,700 annually between 1830 and 1834 and could often hold multiple positions simultaneously. Angevine, "Individuals, Organizations, and Engineering," 315–16; Daniel Hovey Calhoun, *The American Civil Engineer: Origins and Conflict* (Cambridge, MA: Technology Press, 1960), 167–69, 172; Skelton, *American Profession of Arms*, 190–91, 199–200.

51. Huntington, *The Soldier and the State*, 199.

52. These included both engineers and line officers, who also drew on their West-Point training to obtain favorable positions at railroads. Skelton, *American Profession of Arms*, 182–84, 192–202, 217–19.

53. In 1848, West Point's board of visitors noted the same trend in a report on the careers of its graduates. It found 103 civil engineers and 29 chief engineers of canals or railroads among the academy's alumni though only 96 West Point graduates had been assigned to either engineering corps during their service. Self-interested reasons to support federal railroad policy thus touched nonengineering army officers. "Report of the Board of Visitors," H.R. Exec. Doc. No. 1, 30th Cong., 2d Sess., at 294–95.

54. Cong. Globe, Vol. 6, 25th Cong., 2d Sess. 133 (February 5, 1838).

55. Angevine, "Individuals, Organizations, and Engineering," 314–15; Skelton, *American Profession of Arms*, 82–190.

56. Skelton, *American Profession of Arms*, 292–93. For more related literature, see note 15.

57. "Extract from a communication from the chief engineer to Secretary of War, dated November 18, 1829," *ASP:MA*, 5:452.

58. Eaton, "On the Importance of the Topographical Engineers in the Army," *ASP:MA*, 4:631; "Extract from a communication from the Secretary of War to Hon. A. Stephenson, Speaker of the House of Representatives, dated January 13, 1831," *ASP:MA*, 5:452.

59. C. Gratiot to L. Cass, "Report from the Engineer Department," November 15, 1835, *ASP:MA*, 5:654–61.

60. Cass, "Annual Report," November 30, 1835, *ASP:MA*, 5:627–28; L. Cass to T. H. Benton, Jan. 14, 1836, *ASP:MA*, 6:11.

61. C. Gratiot to J. R. Poinsett, "Report from the Chief Engineer," November 30, 1837, *ASP:MA*, 7:631–39.

62. Angevine notes that 20 of the 32 officers who surveyed railroads between 1827 and 1838 resigned by the latter year, with the largest single year for resignations being 1836 when 17 percent of the Army's commissioned officers resigned. Skelton, *American Profession of Arms*, 217; Angevine, *Railroad and the State*, 87–98. This turnover within the officer corps joined changes in war-department leadership in contributing to the military establishment's decisive mid-1830s turn against survey aid by removing its most pro-railroad officers.

63. In addition to generally arguing for status quo railroad policy, Abert accurately predicted that banning roads from supplementing engineer salaries would push "some of the most valuable, best informed, and most enterprising officers from the Service." On the other hand, Secretary Butler deftly, but inaccurately, downplayed this shift. Hill, *Roads, Rails & Waterways*, 87–88; "Extract from a communication from the chief engineer to Secretary of War, dated November 18, 1829," *ASP:MA*, 5:452; Cass, "Annual Report," November 30, 1835, *ASP:MA*, 5:627–28; Butler, "Annual Report," December 3, 1836, *ASP:MA*, 6:809–10; J. R. Poinsett, "Annual Report of the Secretary of War," December 2, 1837, *ASP:MA*, 7:573–74.

64. Carpenter, *Forging of Bureaucratic Autonomy*.

65. Poinsett, "Annual Report," December 2, 1837, *ASP:MA*, 7:571–79.

66. Cong. Globe, Vol. 6, 25th Cong., 2d Sess. 133, Appendix 64–65 (February 5, 1838; January 10, 1838).
67. Cong. Globe, Vol. 6, 25th Cong., 2d Sess. 133 (February 5, 1838); Poinsett, “Annual Report,” December 2, 1837, *ASP:MA*, 7:571–79. Poinsett and Buchanan were right that America boasted a growing cohort of civil engineers—many trained at West Point and survey-duty’s school of practice. Although officials like Chief Topographical Engineer J. J. Abert would later acknowledge this new interest group’s jealousies regarding railroad aid, they played little part within mid-1830s policy debates. Hill, *Roads, Rails & Waterways*, 137, 140–52.
68. Cong. Globe, Vol. 6, 25th Cong., 2d Sess. 133 (February 5, 1838).
69. *Army and Navy Chronicle* 10, no. 9 (February 27, 1840): 137; Poinsett, “Annual Report,” December 2, 1837, *ASP:MA*, 7:571–79; *U.S. Statutes at Large*, 25th Cong., 2d Sess., 5:256–60 (July 5, 1838).
70. *U.S. Statutes at Large*, 25th Cong., 2d Sess. 5:256–60 (July 5, 1838).
71. *Baltimore Sun*, December 18, 1839, 2.
72. Gaines, “Plan for the Defence of the Western Frontier”; Gaines, “Memorial of Edmund P. Gaines,” H.R. Doc. No. 206, 26th Cong., 1st Sess. (1840).
73. The *Nemesis* set sail from Portsmouth on March 28, 1840, reaching Macau by November 25. It subsequently became the foremost example of gunboats’ ability to project imperial power inland along rivers. Headrick, *Tools of Empire*, 19–54.
74. Gaines, “Memorial,” 14.
75. Gaines, “Memorial,” 10.
76. *New York Herald*, November 21, 1840, 2.
77. *Charleston Mercury*, December 8, 1840, 2; January 13, 1841, 2; *New Hampshire Sentinel*, December 16, 1840, 2; *Baltimore Sun*, January 13 and 18, 1841, 2; *The Farmers’ Cabinet* (Amherst, NH), January 22, 1841, 2; *Pittsfield Sun*, January 14, 1841, 1; Elizabeth Urban Alexander, *Notorious Woman: The Celebrated Case of Myra Clark Gaines* (Baton Rouge: Louisiana State University Press, 2001), 165.
78. Gaines had already voiced a version of this vision by 1826. E. P. Gaines to Jacob Brown, “General Remarks Concerning the Militia of the United States,” Cincinnati, December 2, 1826, in H.R. Doc. No. 104, 20th Cong., 2d Sess. 17 (1829); Gaines, “Memorial,” 11; *Baltimore Sun*, January 18, 1841, 2; *New York Herald*, January 12, 1841, 2.
79. *Baltimore Sun*, January 18, 1841, 2.
80. *New Orleans Daily Picayune*, April 10, 1840, 2.
81. Philip Hone, *Diary of Philip Hone, 1828–1851*, ed. Allan Nevins (New York: Dodd, Mead and Company, 1927), 2:515–16.
82. *The Farmers’ Cabinet* (Amherst, NH), January 22, 1841, 2.
83. Cong. Globe, 26th Cong., 1st Sess. 311–13 (April 14, 1840); J. R. Poinsett to R. M. T. Hunter, May 12, 1840, in H.R. Doc. No. 206, 26th Cong., 1st Sess. 1 (1840).
84. J. G. Totten, S. Thayer, T. Cross, and G. Talcott to J. R. Poinsett, “Report on the Atlantic Frontier from Passamaquoddy to the Sabine,” in H.R. Doc. No. 206, 26th Cong., 1st Sess. 5 (1840).
85. L. Cass to A. Jackson, April 7, 1836, *ASP:MA*, 6:376; J. G. Totten, “Report on the Armories, Arsenals, Magazines, and Foundries,” in H.R. Doc. No. 206, 26th Cong., 1st Sess. 113–17 (1840); J. G. Totten to J. G. Poinsett, “Confidential notes in relation to Ordnance,”

January 29, 1840, Vol. 4, 132–37, Entry-146, Letters and Reports of Col. Joseph G. Totten, Chief of Engineers, Record Group 77, National Archives (hereafter E-146, RG-77, National Archives); Browning, *Two if by Sea*, 44–46.

86. Campbell, “Railroads in National Defense,” 369. Robert Angevine would similarly attribute the military establishment’s hardened stance against railroad policy to Gaines’s increasingly anti-standing-army and antifortification rhetoric. Angevine, *Railroad and the State*, 50–51, 58–59, 62–63.

87. During his St.-Louis lecture, Gaines speculated that the engineers opposed his proposal “because it is my system” before proceeding to show why by mocking the corps-run West Point. Emphasis in original. Quoted in Mark A. Smith, *Engineering Security: the Corps of Engineers and the Third System Defense Policy, 1815-1861* (Tuscaloosa: University of Alabama Press, 2009), 121–23.

88. *Niles’ National Register* captured the essence of how Gaines’s personal conflicts could eclipse his policy concerns by commenting on his “gratuitous fling at general Scott” rather than the erstwhile Indian fighter’s relatively conciliatory stance toward the Seminoles. *Niles’ National Register*, June 22, 1839, 271. Gaines’s “gratuitous fling” at Scott represented just one salvo of a lifelong feud that led President Adams to bypass them—the Army’s two top-ranked officers—when selecting a commanding general in 1828. Additionally, Gaines recklessly presided over two British citizens’ court martial and hanging during the illegal incursion into Spanish Florida led by Andrew Jackson—another general with whom Gaines eventually feuded. Gaines found himself on the other side of a court martial between 1846 and 1848 after calling up volunteers in Louisiana during the Mexican War—reflecting the General’s barely disguised scorn for the War Department’s civilian leadership, including those whose shared his policy priorities like Lewis Cass. James W. Silver, *Edmund Pendleton Gaines: Frontier General* (Baton Rouge: Louisiana State University Press, 1949), 258–71; Samuel J. Watson, *Jackson’s Sword: The Army Officer Corps on the American Frontier, 1810-1821* (Lawrence: University of Kansas Press, 2012).

89. During the military establishment’s mid-1830s turn against railroad policy, their prime foil was Secretary Lewis Cass—whose biographer reported “a remarkable consensus of opinion” that “his courteous demeanor and his frank friendliness ... endeared him to political foes, and disarmed factious opposition.” They helped him remain popular in military circles throughout his career and achieve unanimous consent when appointed ambassador to France at “the height of political animosity in those bitter days” of the late Jackson Administration. *Arkansas Intelligencer*, February 28, 1846, 2; Andrew Cunningham McLaughlin, *Lewis Cass* (Boston: Houghton, Mifflin and Co., 1891), v, 163, 222.

90. J. G. Totten, S. Thayer, T. Cross, and G. Talcott to J. R. Poinsett, “Report on the Atlantic Frontier,” 5.

91. Gaines’s contribution to these debates nuances Skelton’s classification of him as an indicative member of the post-1812 generation whose military professionalism replaced the early-national regime when “no clear line separated the army officer corps from the civilian world.” Skelton, *American Profession of Arms*, 68, 110–17.

92. When Gallatin wrote that his system of canals would help “secure[] external independence, domestic peace, and internal liberty,” he reflected a tradition within republican political economy that considered not only citizens’ socioeconomic independence necessary for true liberty but also their virtue. This tradition, in Drew McCoy’s phrasing,

viewed “‘industry’ as the cornerstone of the republican personality” and feared a threat to it in America’s fecund soil—without commercial outlets the nation’s yeomen were liable to “indolence, lethargy, dissipation, and barbarous dependence—characteristics hardly befitting a republican people.” The desire to avoid this eventuality had motivated internal-improvements projects from at least the late colonial period, provided the spur for the Louisiana Purchase, and inflected Gallatin’s internal-improvements proposal. Albert Gallatin, “Report on Roads and Canals,” *ASP:Miscellaneous* 1:724–921, esp. 1:725, 740–41; Drew R. McCoy, *The Elusive Republic: Political Economy in Jeffersonian America* (Chapel Hill: University of North Carolina Press, 1980), 122, 197; Henry Adams, *Life of Albert Gallatin* (Philadelphia: J. B. Lippincott & Co., 1879), 350–52; Larson, *Internal Improvement*, 59–63.

93. Gallatin, himself, embodied this vision in an 1802 letter to his wife declaring, “The distribution of our little army to distant garrisons . . . is the most eligible arrangement of that perhaps necessary evil that can be contrived. But I never want to see the face of one [soldier] in our cities and intermixed with the people.” A. Gallatin to H. Gallatin, July 7, 1802, in Adams, *Life of Albert Gallatin*, 304. See also: Bernard Bailyn, *The Ideological Origins of the American Revolution* (1967; repr., Cambridge, MA: Belknap Press, 2017); Lawrence Delbert Cress, *Citizens in Arms: The Army and Militia in American Society to the War of 1812* (Chapel Hill: University of North Carolina Press, 1982); Watson, *Jackson’s Sword*, 266–71.

94. Calhoun, “Report on Roads and Canals,” 5:42.

95. Militias require time to rally before responding to a threat, while standing armies and fortifications were significantly less time sensitive, meaning militias could not respond to fast-developing threats as effectively as standing armies.

96. William Redfield, *Sketch of the Geographical Rout of a Great Railway* (New York: G. & C. & H. Carvill, 1830), 9–17, 22.

97. Cass was promoted from colonel to major general of the Ohio militia in December 1812 but prevented from assuming this command by his prisoner-of-war parole until January when he became colonel of a regular regiment before receiving another quick promotion to brigadier general. Cass, “Annual Report,” November 30, 1835, *ASP:MA*, 5:630–31; L. Cass to A. Jackson, April 7, 1836, *ASP:MA*, 6:369–73; McLaughlin, *Lewis Cass*, 83.

98. L. Cass to A. Jackson, April 7, 1836, *ASP:MA*, 6:369–70; J. G. Totten to C. Gratiot, March 29, 1836, *ASP:MA*, 6:379.

99. Andrew Jackson, “On the Means and Measures Necessary for the Military and Naval Defences of the Country,” April 8, 1836, *ASP:MA*, 6:365; Cass, “Annual Report,” November 30, 1835, *ASP:MA*, 5:630–31; L. Cass to A. Jackson, April 7, 1836, *ASP:MA*, 6:369–73.

100. Totten, “Report on the Armories, Arsenals, Magazines, and Foundries,” 113–17; Smith, *Engineering Security*, 107.

101. J. G. Totten to C. M. Conrad, November 1, 1851, 4:348–54.

102. J. R. Poinsett to R. M. T. Hunter, May 12, 1840.

103. Though the Third-System forts would prove obsolete by the Civil War, and Samuel Watson has suggested that Gaines’s steam batteries “would become recognizable 50 years later as the battleship,” Mark Smith rightly objects that the guns on display at Fort Sumter had not yet been invented and such vessels remained infeasible. Samuel J. Watson,

“Knowledge, Interest and the Limits of Military Professionalism: The Discourse on American Coastal Defence, 1815–1860,” *War in History* 5, no. 3 (July 1998): 295; Smith, *Engineering Security*, 104.

104. E. P. Gaines to Jacob Brown, “General Remarks Concerning the Militia of the United States,” Cincinnati, December 2, 1826.

105. “The proposed railroads would,” Gaines argued, “enable us to obtain more useful service ... from ten thousand men ... [than] we could obtain from an army of one hundred thousand.” Gaines, “Memorial,” 11. The topographical engineers explained that Gaines underestimated his system’s mileage by 1,000 and “state[d] the average ... of a double track at \$15,000 per mile” while “\$20,000 per mile, for a single track” was “a probable minimum.” Even this likely underestimated the cost of construction. J. J. Abert to J. R. Poinsett, April 24, 1840, in H.R. Doc. No. 206, 26th Cong., 1st Sess. 144–45 (1840); Dunlavy, *Politics and Industrialization*, 212–15.

106. Cong. Globe, 26th Cong., 1st Sess. 524–25 (July 14, 1840).

107. Skowronek, Dearborn, and King recently framed Jackson’s bank war as an early contest between a unitary executive claiming democratic legitimacy and the “deep state.” Stephen Skowronek, John A. Dearborn, and Desmond King, *Phantoms of a Beleaguered Republic* (New York: Oxford University Press, 2021), 41–42.

108. Or, in the words of one Cass biographer, “a Bastille of respectability had fallen, and the guillotine soon lopped off the heads of the office-holding nobility, who had too long lived in aristocratic ease above ‘the people.’” L. Cass to A. Jackson, April 7, 1836, *ASP:MA*, 6:373; McLaughlin, *Lewis Cass*, 137; John, *Spreading the News*, 206–56.

109. Skelton, *American Profession of Arms*, 93–142, 167–80; Smith, *Engineering Security*, 1, 9–13, 102, 108; Watson, *Jackson’s Sword*, 255–71.

110. Smith, *Engineering Security*, 93–111.

111. Browning, *Two if by Sea*, 33–46.

112. Myra Clark Gaines, “The Horrors of War,” in Robert Gibbes Barnwell, *The New-Orleans Book* (Boston: Wright & Hasty’s Steam Press, 1851), 106–10.

113. S. Bernard, J. D. Elliot, and J. G. Totten to J. C. Calhoun, February 7, 1821, *ASP:MA*, 2:310; Watson, “Knowledge, Interest and the Limits of Military Professionalism,” 280–307.

114. Emphasizing Cass’s points of consensus with the Corps’s vision for the Third System, Smith highlights how Cass asked for funding for ongoing fortification projects and suggested only \$100,000 to experiment with steam-towed batteries rather than the \$660,000 the Senate initially floated. Nevertheless, Cass’s willingness to experiment with floating batteries and to question permanent fortifications represented a notable break that provided fodder for defense-funding critics like Senators Hugh White and John P. King. Smith, *Engineering Security*, 69–81, 107.

115. Since Temin’s classic work, scholars have revisited his conclusions about Jacksonian policy and the arrival of the Panic of 1837—suggesting that the distribution of the federal surplus and the Specie Circular contributed to the fragility of the eastern banks. Though many banks resumed payment in 1838, crisis would return the following March. The Crisis of 1839 is often—though not always—treated as a separate event, reflecting the ongoing controversy over the overall scale of the Panic of 1837’s effects. Because annual output data suitable to analyze business cycles do not exist for the period, this will likely remain a perennial site of debate for economic historians. Peter Temin, *The Jacksonian*

Economy (New York: W.W. Norton, 1969); Richard Sylla, "Review of Peter Temin's *The Jacksonian Economy*," *eh.net*, August 17, 2001, https://eh.net/book_reviews/the-jacksonian-economy/; Peter L. Rousseau, "Jacksonian Monetary Policy, Specie Flows, and the Panic of 1837," *Journal of Economic History* 62, no. 2 (June 2002): 457–88; Alasdair Roberts, *America's First Great Depression* (Ithaca, NY: Cornell University Press, 2012); Jessica M. Lepler, *The Many Panics of 1837: People, Politics, and the Creation of a Transatlantic Financial Crisis* (New York: Cambridge University Press, 2013); Peter L. Rousseau, "Jackson, the Bank War, and the Legacy of the Second Bank of the United States," *AEA Papers and Proceedings* 111 (May 2021): 501–7.

116. These numbers also reflected reduced tariff rates. Regardless, they acted as a constraint on federal spending.

117. As diarist Philip Hone predicted, they would also prompt international investors to "stigmatize the Yankees as a nation of swindlers." Quoted in Lepler, *Many Panics of 1837*, 221; Larson, *Internal Improvement*, 211–24.

118. Skelton, *American Profession of Arms*, 217; Angevine, *Railroad and the State*, 87–98.

119. Watson, "Knowledge, Interest and the Limits of Military Professionalism," 302; Smith, *Engineering Security*, 81.

120. Carpenter, *Forging of Bureaucratic Autonomy*.

121. J. G. Totten to S. Thayer, June 24, 1842, Vol. 5, 199–200, E-146, RG-77, National Archives.

122. in passim, especially: J. G. Totten to S. Thayer, June 23, 1840, Vol. 5, 1–2; J. G. Totten to S. Thayer, February 10, 1841, Vol. 5, 66; J. G. Totten to S. Thayer, June 24, 1842, Vol. 5, 199–200, E-146, RG-77, National Archives; Skelton, *American Profession of Arms*, 292–93.

123. J. G. Totten to H. Halleck, November 2, 1842, Vol. 5, 250, E-146, RG-77, National Archives.

124. J. G. Totten to J. R. Poinsett, March 29, 1839, Vol. 4, 56–57; J. G. Totten to J. R. Poinsett, December 10, 1839, Vol. 4, 117, E-146, RG-77, National Archives.

125. R. E. De Russy to J. G. Totten, July 26, 1851, in *Reports of Committees of the House of Representatives Made During the Second Session of the Thirty-Seventh Congress*, 4:504.

126. J. G. Totten to W. H. Chase, January 16, 1842, Vol. 5, 127, E-146, RG-77, National Archives.

127. John G. Barnard, *Eulogy on the late Brevet Major-General Joseph G. Totten* (New York: D. Van Nostrand, 1866), 9; J. G. Totten to J. R. Poinsett, February 13, 1839, Vol. 4, 11–18 and J. G. Totten to Robert C. Nicholas, May 2, 1840, Vol. 4, E-146, RG-77, National Archives.

128. in passim, especially: J. G. Totten to W. Frasier, January 21, 1841, Vol. 5, 52; J. G. Totten to J. R. Jones, Febr 11, 1842, Vol. 5, 134–35; E-146, RG-77, National Archives.

129. De Russy's response to Secretary Conrad's question about fortifications' value in the steam era is indicative. De Russy filled the first fifth of his report with a pompous paean to fortifications, glorifying their "origin with the Greeks," rendering them as a marker of civilization, and implicitly bragging about his own qualifications—highlighting how their construction required the "combination of sciences, involving mathematics, pyrotechny, strategy, and the art of war." R. E. De Russy to J. G. Totten, July 26, 1851, 4:501.

130. Skelton, *American Profession of Arms*, 292–93; Angevine, *Railroad and the State*, 60–61.

131. J. G. Totten to W. H. Chase, April 10, 1841, Vol. 5, 80–81, E-146, RG-77, National Archives. Like Gaines, Major Chase regularly aired a republican skepticism of institutions that the military establishment—particularly his own Corps of Engineers—deemed sacrosanct. In February 1841, Chase sent a letter for Totten to forward to Senator Franklin Pierce—then a major opponent of the Corps-run West Point, who called it “an institution for educating, gratuitously, young gentlemen, who . . . return to the pursuits of civil life” after a free education. Nathaniel Hawthorne, *Life of Franklin Pierce* (New York: Garrett Press, 1852), 30; *Life of Franklin Pierce* (Trenton, NJ: Morris R. Hamilton, 1852), 28–35. Chase’s letter advocated cutting engineers’ pay and alleged “favoritism exists at our national school.” Totten, who spent much of the 1840s coordinating a defense of the Corps’s control over West Point, wrote Chase that his opinions differed “so fundamentally that [he] took the liberty of addressing the same gentleman with a few remarks thereon.” in passim, esp. J. G. Totten to W. H. Chase, February 17, 1841; J. G. Totten to F. Pierce, February 17, 1841; J. G. Totten to W. H. Chase, April 10, 1841, Vol. 5, 67–71, 80–81, E-146, RG-77, National Archives; *Army and Navy Chronicle* 10, no. 9 (February 27, 1840): 135–36.

132. W. H. Chase to C. M. Conrad, April 17, 1851, in *Reports of Committees of the House of Representatives Made During the Second Session of the Thirty-Seventh Congress*, 4:514. Totten responded to this affront by giving Chase a series of unattractive assignments that eventually succeeded in prompting his resignation.

133. E. P. Gaines to New Orleans City Leaders, November 24, 1838, quoted in Silver, *Edmund P. Gaines*, 227.

134. Samuel Watson has suggested that there was some truth to Gaines’s claim that the engineers’ commitment to fortifications shaded into an “unthinking application of European models to American realities.” Watson, “Knowledge, Interest and the Limits of Military Professionalism,” 302.

135. Even this limited goal lost much of its significance as federal and state governments retreated from railroad aid following the Panic of 1837. Though local governments picked up some of the slack, boosterism overtook military advantage as a motive.

136. Rather than flirting with a railroad-based defense like James Barbour and Lewis Cass, their successors like John C. Spencer denied these proposals out of hand. John C. Spencer, “Report of the Secretary of War,” quoted in *Army and Navy Chronicle* 12, no. 50 (December 16, 1841): 894.

137. *New York Herald*, January 16, 1841, 2.

138. With America “destined to have a deadly struggle” with Britain, an indicative 1847 article in *Hunt’s Merchants’ Magazine* declared, the nation had a responsibility to prepare without “creating a great army and navy, which would eat out our substance and, perhaps, overturn our free government” or “fortifications which could not be properly manned without a large standing army, and which might be evaded by the foe.” Instead, the *Toledo Blade*’s Jesup Scott channeled Gaines to suggest America “Improve the organization of the militia; provide the materials of defence in safe arsenals; and, above all, make reliable your river and harbor accommodations, and your means of concentration, by a complete system of railroads. By these you increase wealth, instead of consuming it.” Jesup W. Scott, “A National System of Railroads,” *Hunt’s Merchants’ Magazine* 17, no. 6 (December 1847):

568. Predictably promoting a railroad across the Old South, *De Bow's Review* cited Gaines and Colonel James Gadsden—an engineering officer turned railroad executive—to tout “the magical power of steam” that “gives us wings to our arms, and enables us ... to realize the great problem of military success—‘*Concentration of force and celerity of movement.*’” “Southern Atlantic and Mississippi Railroad,” *De Bow's Review* 1, no. 1 (January 1846): 22, 27–32. See also, *Cincinnati Daily Chronicle* quoted in *American Railroad Journal* 16 (March 1843): 66; Ward, *Railroads and the Character of America*, 12–55.

139. *American Railroad Journal* 5, no. 17 (April 30, 1846): 262.

140. C. M. Conrad to J. G. Totten, April 17, 1851, in *Reports of Committees of the House of Representatives Made During the Second Session of the Thirty-Seventh Congress*, 4:501.

141. They were so “easily impaired or destroyed that it would be dangerous to depend entirely upon their use.” R. E. De Russy to J. G. Totten, July 26, 1851, 4:503.

142. J. G. Totten to C. M. Conrad, November 1, 1851, 4:355.

143. Major Richard Delafield reimagined Gaines’s vision of an attack on America’s commercial capital with this lesson in mind: “The many thousands of uniformed militia that could ... be concentrated by railroad and river steamers in New York,” Delafield declared, “could do positively nothing in arresting a hostile fleet from destroying the city.” Richard Delafield, “Report of Major R. Delafield,” in *Reports of Committees of the House of Representatives Made During the Second Session of the Thirty-Seventh Congress*, 4:515. See also, R. E. De Russy to J. G. Totten, July 26, 1851, 4:347–54; J. G. Totten to C. M. Conrad, November 1, 1851, 4:502.

144. Chase did not seek federal aid for the project, claiming that its effect on land values would effectively pay for the road. William H. Chase, *Report of William H. Chase, Chairman of the Committee of Ways and Means, Made at the Rail Road Convention Held in the City of Montgomery, December 3, 1849* (Montgomery: Job Office of the Alabama Journal, 1849).

145. W. H. Chase to C. M. Conrad, April 17, 1851, 4:511–12.

146. William H. Chase, “The National Defences as connected with a System of Internal Improvements,” *De Bow's Review* 14, no. 1 (January 1853): 54–62.

147. W. H. Chase to C. M. Conrad, April 17, 1851, 4:511.

148. *New York Times*, July 14, 1853, 1.

149. Even officers with decidedly different politics than Davis promoted the construction of a Pacific railroad after Davis’s realignment of the War Department’s priorities. They did, however, savage Davis’s politicking to promote a southern route. John C. Fremont, “Letter to the Editors,” *Daily National Intelligencer*, December 27, 1854; William T. Sherman, “Notes on the Pacific Railroad,” *Daily National Intelligencer*, January 18, 1859; *Daily National Intelligencer*, July 23 and 29, 1853; *Mississippi Free Trader*, August 9 and 16, 1853; *Washington Review and Examiner*, October 22, 1853; *New York Tribune*, January 27, 1858; Angevine, *Railroad and the State*, 110–29.

150. A political opponent once tarred Davis for his friendship with the controversial general, under whom he had served as a young lieutenant, received significant furlough time, and once been offered reprieve from a court martial. Davis later confirmed this connection by fighting in the Senate for a widowed Myra Clark Gaines’s army pension. Jefferson Davis to Edmund P. Gaines, October 3, 1832; “Special Order no. 1,” January 15, 1832; “Order no. 10,” March 15, 1835; “Proceedings of a Court of Inquiry,” January 27, 1837; “Notice of a Political Meeting,” September 22, 1845, in *The Papers of Jefferson*

Davis, ed. M. Monroe Haskell and James T. McIntosh (Baton Rouge: Louisiana State University Press, 1971); *Senate Journal*, 31st Cong., 1st Sess., at 585.

151. *New York Herald*, January 22, 1856, 4; *Jefferson Davis, Constitutionalist: His Letters, Papers and Speeches*, ed. Dunbar Rowland (Jackson: Mississippi Dept. of Archives and History, 1922), 2:310–20, 2:330–32, 2:416–17, 2:565–70.

152. Indeed, Totten insisted that a transcontinental would increase the need to fortify Pacific harbors just as Davis offered a rationale for one—emphasizing the need for interior communications with America’s new outpost—that more closely resembled Totten’s arguments for a railroad to Pensacola than Gaines’s plan. *Washington Union*, July 20, 1853; J. G. Totten to C. M. Conrad, November 1, 1851, 4:349; Angevine, *Railroad and the State*, 127.

153. Considering popular internal-improvements projects’ defeat, Richard John has questioned whether it was “entirely a matter of chance” that proslavery southerners stripped the federal government’s administrative capacity shortly after Jackson’s 1828 presidential victory—an argument John Lauritz Larson joins. John, “Governmental Institutions as Agents of Change,” 380; Larson, *Internal Improvement*. At first glance, Poinsett’s efforts against the General Survey Act fit this suggestion of proslavery obstructionism. He had been one of the founders of the ultimately unsuccessful Louisville, Cincinnati, and Charleston Railroad—a road planned, in part, “to keep Ohio [the South’s] friend on the slave question.” Col. A. Blanding, *Address to the Citizens in Charleston Convened in Town Meeting* (Columbia, SC: A. S. Johnston, 1836), 7; J. Fred Rippey, Joel R. Poinsett, *Versatile American* (Durham, NC: Duke University Press, 1935), 163–64. This agenda could conceivably have prompted Poinsett to oppose survey aid after witnessing northern railroads receive the bulk of it—much as John C. Calhoun turned against his early nationalism. Yet, southern partisans within the War Department—and other branches of government—leveraged federal power as enthusiastically in support of slavery as northerners did against it. Don E. Fehrenbacher and Ward M. McAfee, *The Slaveholding Republic: An Account of the United States Government’s Relations to Slavery* (New York: Oxford University Press, 2001); David F. Ericson, *Slavery in the American Republic: Developing the Federal Government, 1791–1861* (Lawrence: University Press of Kansas, 2011); David F. Ericson, “The United States Military, State Development, and Slavery in the Early Republic,” *Studies in American Political Development* 31, no. 1 (April 2017): 130–48.

154. Richard Delafield, *Report on the Art of War in Europe* (Washington: G. W. Bowman, 1861), 26; Browning, *Two if by Sea*, 51–53, 106–51; Clary, *Fortress America*, 46–47; 66–70, 98–123; Smith, *Engineering Security*, 124–25.

155. Daniel Carpenter and David A. Moss, “Introduction,” in *Preventing Regulatory Capture*, 21. See also, Croley, *Regulation and Public Interests*.