BLOOD AND STEAM: BOILER EXPLOSIONS AND THE BEGINNING OF
INDUSTRIAL REGULATION IN THE UNITED STATES, 1811-1871

by

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# TABLE OF CONTENTS

Acknowledgements ........................................................................................................... ii

I. Introduction .................................................................................................................... 1

II. Chapter One: Early Attempts ....................................................................................... 5

III. Chapter Two: The Interim ......................................................................................... 28

IV. Chapter Three: Promise Fulfilled ............................................................................... 47

V. Conclusion .................................................................................................................... 64

VI. Bibliography ............................................................................................................... 69

VII. Special Pages

   Vita

   Abstract
INTRODUCTION

Like many great innovations, steamboats burst onto the scene requiring some major improvements. When the first steamboat traveled down the Mississippi in 1811, people in every town that it passed thought that they would never see it again. Instead, within twenty years the economy of every Mississippi river town relied on these vessels to transport their goods and also bring them news from across the nation. But with that economic growth came danger. Any man that claimed to understand the inner workings of a steamboat’s boiler could gain employment aboard these floating steam engines even without actually possessing that understanding. The captains of these steamboats knew little more. Untrained operators piloting ships harnessing pressurized steam and water seemed a scenario ripe for disaster. Soon, the promise of disaster would be kept.¹

On April 25, 1838, the steamboat Moselle evaporated near Cincinnati. All four boilers exploded simultaneously, flinging the deck high into the sunny afternoon sky, killing almost everyone onboard. The blast launched a man into the sky with such force that he drilled through the roof of a local home and wedged himself in the ceiling like a grotesque decoration. Pieces of both the boiler and the passengers littered both the Kentucky and Ohio shores. Women lamented while the lucky survivors wept with their remaining kin or frantically searched for their family. The most horrific tableaus recorded at the sight of explosion were not the numerous mangled corpses that were slowly being pulled to shore by the thousands that rushed to help the sinking craft but instead the smaller, more personal disasters. A man desperately attempted to revive his son while his wife and daughter laid

¹ Hunter, Louis C. *Steamboats on the Western Rivers: An Economic and Technological History.* (Cambridge: Harvard University Press, 1949.)
cold and motionless next to him. Another man clung to his son while attempting to process
his lost wife and five other children. Two small children sat by the edge of the river crying
for the families they would never see again. In total, this one steamboat explosion killed
eighty-one people and more than one hundred survivors suffered some sort of burn, break, or
bruise.²

The *Moselle* was not a typical steamboat. It was considered by most as the greatest
steamboat sailing at the time of its critical failure. The *Moselle* held a well-deserved
reputation as the fastest steamboat on the water with trips taking half the time of less
powerful steamboats. At the time of its explosion, another steamboat had recently come close
to matching the *Moselle’s* speed and Captain Perrin, the boat’s celebrated captain, wanted to
ensure that the vessel maintained its sterling reputation. As the *Moselle* left port, some things
seemed amiss. The steam exiting the steamer appeared unusually high according to several
observers and one man even left the vessel in protest of the lack of care for safety. Despite
signs of danger, the ship remained fuller than usual in the hopes of witnessing her speed.
Instead, they witnessed one of the most damaging steamboat explosions in the history of the
United States. The following day, the mayor of Cincinnati held a meeting decrying the
carelessness of steamboat operators and called for Congress to intervene. Three months later,
Congress passed a law regulating steamboats, beginning a regulatory journey that took forty
years to reach maturity.³

² James T. Lloyd, *Lloyd’s Steamboat Directory, and Disasters of the Western Waters.* (Cincinnati: James T. Lloyd
and Co., 1856), 89-93. This source is from forty years later than the explosions actually occurred and at points
seems slightly sensationalized. As far as I can tell, there are not citations or anything of that nature. Despite
that, most of the things it describes do not seem out of line with other sources that described steamboat
explosions and what common sense would dictate as a result of a steamboat explosion.
While reading much of the available works on steamboats during the antebellum period, many works treated steamboats as a fully-fledged industry rather quickly into their development cycle. While historians like Leland Baldwin wrote about the changes wrought by the introduction of steamboats and others like Louis C. Hunter wrote extensively about the technological change in steamboats, the changes in public view over time was rarely addressed. Therefore, more than anything else, this paper seeks to understand those changes through regulation, rather than focus on economic or technological change. The first chapter of this thesis sets the stage by examining the story of the first steamboat to sail on the Mississippi River. This chapter discusses the history of federal involvement in steamboats prior to the first steamboat regulation, mostly focusing on the dissolution of the Fulton-Livingston monopolies. The chapter also includes descriptions of steamboat disasters prior to 1838 other than the Moselle in order to provide a sense of scale for the destruction perpetrated and to provide an understanding of the different ways steamboats sunk. Each archetype had an impact on subsequent legislation. Finally, a small part of the chapter is dedicated to applying the ideas of Jacksonian America and Henry Clay’s American System to the idea of steamboat explosions while also providing some political background. The chapter concludes with an examination of the text of the Act of 1838, explaining the reasoning behind the different parts of the act.

In the second chapter, the failures of the Act of 1838 become apparent through descriptions of the multitudinous ways that the statutes within prevented no steamboat explosions. To show the scale of destruction during this time, the chapter focuses on the year 1838 and collated the most notable explosions to provide an idea of the fear and destruction wrought by these steamboat disasters. Public opinion towards government intervention on the
part of steamboats worsened, revealed through the changing manner in which newspapers described these boiler explosions. Throughout the chapter, possible fixes presented by newspapers and engineers for the Act of 1838 reveal how they influenced future legislation. The few addendums actually added to the Act of 1838 provide context to what the federal government viewed as necessary and within their power. Additionally, the paper examines how the English system of regulating steamboats provided a model for later American legislation.

In the final chapter, the Act of 1852 finally comes to the forefront as the beginning of modern regulatory action. The most important parts of the act are examined in great detail, paying great attention to how the new act improved the Act of 1838 by providing a more detailed and thorough set of statutes. Much of the discussion centers around the two-fold impact of the Act of 1852: The paper examines the legislation’s influence on steamboat regulation and the eventual creation of the Steamboat Inspection Service; the other the effect of the Act of 1852 on other forms of regulation in the United States. The chapter concludes with an extended discussion of the role fear played in the early days of regulation in America.

The project posits that while the steamboat regulation did break the seal on industrial federal regulation in the United States, it did not signal a major change in how Americans viewed regulation. Instead, this regulation resulted solely from a fear of random death rather than a change in American ideals. The infectious fear caused by the suddenness and brutality of boiler explosions created a unique scenario where a relatively minor issue could create the first regulated industry in American industry.
CHAPTER ONE: EARLY ATTEMPTS AT STEAMBOAT REGULATION

The raucous party that marked Andrew Jackson’s ascent to the presidency often delineates the Jacksonian Era from the Era of the Founding Fathers. As adoring throngs nearly crushed Jackson to death, a party the likes of which seemed unthinkable for one evening turned the White House into a common bawdyhouse. In the midst of this insanity, historians can be forgiven for forgetting the rest of the details of Jackson’s journey from his home in Tennessee to the nation’s capital. The first leg, from Nashville to Pittsburgh, took place on a steamboat traveling up the Mississippi and Ohio River. During this trip, General Jackson became the first elected president to ride on a steamboat to his inauguration. It seems to have been an unremarkable ride despite traveling up the Mississippi, an impossible feat without expending an immense amount of manpower just twenty years earlier. With Jackson aboard, the trip included much of the pageantry of his inauguration. Jackson commandeered three ships, including the Pennsylvania, the Robert Fulton, and the Hercules. The Pennsylvania served as the flagship of this voyage, leading the other two steamboats in intricate movements to wow the crowds that came out to glimpse the newly widowed Old Hickory as he left the steamboat to stay in a hotel near Cincinnati.

While the crowds came out to see Jackson, his method of conveyance did not interest them in the slightest. Why would it? For the average resident of Cincinnati, steamboats made up a familiar part of their day-to-day life. Steamboats had become an accepted part of American life. After all, James Monroe became the first sitting president to travel by steam almost a decade earlier. The sheer banality of Jackson’s steamboat ride speaks volumes of

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the place steamships had taken in the American consciousness. The steamboat made up part of the fabric of their lives, almost unnoticeable except when in cases like that of the Moselle, something went wrong. Then, this convenient mode of conveyance sprayed entrails over the idyllic American Dream. As Jackson spoke of improving the navy to protect commerce in his inaugural address, no mention of protecting commerce from itself was made. Americans understood how to protect themselves from the obvious threats like foreign nations or slave revolts. Nothing in American history to this point had attacked with such ferocity and purposelessness. At the time of Jackson’s inauguration, steamboats occupied a prominent place in the American life, yet little attention had been focused on their alarming propensity to explode inexplicably. In many ways, Jackson’s innocuous steamboat ride signaled the end of America and steamboats’ honeymoon phase. As people slowly noticed the iron menaces patrolling their rivers, calls to regulate steamboats ran into stiff opposition from Jacksonian ideals. Jackson embraced the steamboat, but the country he created would need time to embrace the idea of the federal government creating a safer river. The clash between safety and freedom found a new battlefield onboard steamboats, leading to the creation of the Act of 1838.

The rise of steamboats on the Mississippi River is a well-treaded topic and one that needs no real introduction. Commercial steamboating in the Western Hemisphere began with Robert Fulton in 1807 sending steamboats up and down the Hudson River. After achieving great success on the Hudson, Fulton brought his steamboat operation onto the greatest waterway in America, the Mississippi River. The first steamboat he produced, the New

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Orleans, set sail from the shipyards in Pittsburgh in the fall of 1811. Despite a journey fraught with a massive earthquake and other unexpected issues, the New Orleans arrived in New Orleans in early January 1812. The steamboat began making regular trips from New Orleans to Natchez until it hit a snag in the summer of 1814 that ruptured the hull, ending its life only two years after being built.

The lifespan of the New Orleans provided an unfortunate foreshadowing for the average lifespan of a steamboat on the great river, which averaged roughly two years during the early years of steamboating. The lifespan began to improve when Captain Henry Shreve, a sailor on steamboats during the War of 1812, used that expertise on sailing the Mississippi to create a new model of steamship. Fulton’s steamships, while effective, had been designed with the deeper, snag-free, rivers of New York and the Northeast in mind. Inland rivers like the Mississippi tend to be shallower and feature more obstructions dotting their landscape. Therefore, Fulton’s designs lacked features and modifications that made them better-suited for life on the Mississippi River. The introduction of the Washington in 1816 completely changed the landscape of steam travel on inland rivers. Shreve created a ship with a lighter engine and a flatter bottom. These innovations allowed the ship to sit higher in the water, therefore avoiding the many snags that lined the bottom of most rivers. Shreve’s design added the upper passenger deck that gave steamboats their distinctive appearance and also allowed for slightly more spacious and luxurious accommodations for passengers. Steamships following Shreve’s design proved more successful than any other design on inland rivers.\(^8\) Under the capitalistic economic system present in the United States, the

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\(^8\) Klein and Zellmer, *Mississippi River Tragedies*, 25.
success of Shreve’s design would lead to greater popularity and ultimately the economic ruin of Fulton’s company, although Fulton and Livingston had died by this time. The Fulton Company still had one desperate play left to prevent their economic ruin. They signed exclusive steamboat licenses with the territory of Louisiana, giving them complete and total control over steamboat travel on the Mississippi River. Fulton impounded ships owned by Shreve and others, breaking their monopoly. At one point, Fulton even had Shreve imprisoned while Shreve sued the Fulton-Livingston Company for free movement. If the government allowed the Fulton-Livingston Company to control the trade on the Mississippi and the rivers of New York, growth in commerce could have come to a screeching halt when steamboat operators paid onerous licensing fees to the company.

Due to two court cases, one well-known and one more obscure, that future did not come to pass. The first court case never actually reached a decision even after several attempts by the Fulton-Livingston Company to bring suit against Shreve and others violating their monopoly on the Mississippi. In this series of court cases, the heirs of the Fulton-Livingston Company first sued Shreve for ten thousand dollars and court costs in New Orleans First District Federal Court. Unfortunately for our purposes, the result of Shreve’s court case reflected very little about American thought on monopoly at the time. Judge Hall threw out the case rather than render a verdict, making his intent difficult to discover. Instead, the verdict emanated from the fact that Shreve resided in Kentucky and the other plaintiffs resided in other states as well. The state of Louisiana or at least Judge Hall, believed that the state government could not regulate interstate commerce. The Fulton-

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Livingston monopoly technically remained on the books in Louisiana, but without enforcement it held no power.\textsuperscript{10}

Seven years after the monopoly on the Mississippi shattered, the Fulton-Livingston Company still held a stranglehold on steamboat operation in New York. In 1824, \textit{Gibbons vs. Ogden} came before the Supreme Court. Aaron Ogden and Thomas Gibbons went into a steamboat ferrying business between Elizabethtown and New York City. Due to the Fulton-Livingston monopoly, Ogden and Gibbons were required to purchase a license from the Fulton-Livingston company in order to ferry in New York. Despite protesting at first, Ogden and Gibbons eventually relented and bought a license to continue their business. Things proceeded smoothly until 1818 when the Ogden and Gibbons union collapsed. Gibbons, feeling restricted by the monopoly, started another ferry company on the same route as Ogden’s ferry. Instead of working under a license from the Fulton-Livingston company and by extension the state government, Gibbons obtained a license from a law passed by Congress in 1793 that regulated coastal trade. At this point, a spat between two business partners became a battle for supremacy between the relative powers of the federal and state governments. The case questioned the degree to which the federal or state governments could regulate interstate commerce. After the state of New York ruled that state law superseded federal law, Gibbons took his case to the Supreme Court where legendary lawyer and orator Daniel Webster took an interest in the case. Webster argued that if the federal government did not have exclusive power to regulate interstate commerce, interstate commerce would

devolve into a confusing mess of arcane regulations, taxes, and tariffs. The Supreme Court agreed and the last of the Fulton-Livingston monopolies dissipated.

The results of these two cases created an important precedent regarding regulation on steamboats. While the federal government still retained the right to create and enforce laws on steam travel, it had little intention of putting any regulation into place. A monopoly under the jurisdiction of the states no longer existed and therefore no method of controlling steamboats remained in state hands. The government washed its hands of the responsibility of regulating safety on the rivers at the expense of infringing upon the liberty of the steamboat operators.\textsuperscript{11} In 1825, a bill came before the House of Representatives to regulate steamboats and died on the House floor without ever being passed.\textsuperscript{12} While nothing is known of the contents of this legislation, the lack of headway either bill made speaks for itself and the newspapers reported it with little care. Neither the government or the newspapers considered efforts to regulate steamboats important or necessary at this point in time.

Some small efforts to cleanse the Mississippi of snags and falls materialized on the state level, but states’ inability to benefit economically prevented much development. The federal government intervened, but in a manner that suited the \textit{laissez-faire} sensibilities of the nation. They offered a thousand-dollar bounty on creating a successful method to improve the rivers of America. Henry Miller Shreve resurfaced with a plan to remove snags in an entirely new way. Previously, a group of men pulling on a snag existed as the most efficient way of removing snags. Shreve suggested the idea of creating a steamboat that could remove snags, using the power of steam. These “snagboats” consisted of a steamboat

\textsuperscript{11} \textit{American Watchmen and Delaware Register}, March 4, 1825.  
\textsuperscript{12} \textit{Alexandria Gazette and Advertiser}, March 25, 1824.
with a battering ram attached to the front that could either loosen, break off, or impale the
snag. Either the snagboat carried away the snag, reduced its height so that it posed no threat,
or loosened it enough that it could be winched out of the water. After being named
Superintendent of the Western Waters in 1827, Shreve dedicated himself to clearing snags
throughout the Ohio and the Mississippi Rivers, succeeding in clearances of many dangerous
areas. Unfortunately, Shreve attempted to clear the Arkansas River and due to a consistently
low waterflow and the loss of funding from the government, the clearance failed, leading to
the snagboat project’s relevance dissipating.\textsuperscript{13}

Often, the biggest hurdle in improving something comes not from hidden dangers or
unforeseen issues, but from incredibly obvious problems. In this case, the sheer size of the
Mississippi and the Ohio prevented the two rivers from being tamed. Snagboats cleared snags
faster than had been possible, but trees fell all the time along the banks creating new snags.
Water level changed with the seasons, allowing the same area to be safe at one time of year
and unspeakably dangerous at other times. So much needed to be done and the federal
government offering bounties to improve safety could only do so much to improve the
situation. The Mississippi required an immense outlay of resources, money, and time to clear
entirely. A project to completely clear the Mississippi would have been quite possibly the
largest infrastructure project in the history of the fledgling nation. Obviously, many
Americans felt apprehensive about such an immense infrastructure expenditure. As some
Americans clamored for safe riverways on the western waters, others worried about the cost.

\textsuperscript{13} Michael Colton Adkisson, “Snags, Sawyers, and Shifting Opinion: The Usage and Response to Snag Boats
and Improvement on the Arkansas from 1800–1860,” (MA thesis: Arkansas State University, 2017.)
The debate became subsumed into something much bigger than just a debate over removing
snags.\textsuperscript{14}

The United States in the 1820s served as the battleground between two of the biggest
personalities in American history, Henry Clay and Andrew Jackson. The battles between
these two shaped American histories for much of the 1820s and 1830s and the policy on
improving the Mississippi played a small part in their larger war. The crux of Henry Clay’s
policy for the growth of the nation, called the American System, rested on three major tenets.
First, Clay pushed for a tariff on incoming goods and the continued sale of western land to
fund the rest of his American system. The first part of his American System, unrelated for the
most part to this thesis, additionally called for the establishment of a Bank of the United
States to make credit more available across the nation and tariffs to provide funding for the
rest of the American System. Secondly, Clay pushed for an increased amount of focus on the
defense of the nation. The third and most important pillar of Clay’s American system for this
line of inquiry aimed for a series of internal improvements all across the nation. The main
gears of the internal improvements programs revolved around canals and roads, but clearing
rivers made up a small part of the planned improvements. Despite the lack of focus on river
improvements, the U.S. government including internal improvements as part of their plans
would set a precedent that could lead to more investment in river infrastructure.\textsuperscript{15}

These plans for internal improvements and the bank could have shifted the
development of the United States into high gear or the increased taxes might have led to a


\textsuperscript{15} Daniel Walker Howe, \textit{What Hath God Wrought: The Transformation of America, 1815-1848}. (New York:
Oxford University Press, 2007), 243-284
recession in the economy. The world will never know because Clay’s plan ran into
opposition from Andrew Jackson, the defining politician of the era. Jackson’s exact
reasoning for opposing the American System stemmed from any number of sources. Jackson
nurtured a strong hatred of banks from business deals gone bad during the Panic of 1819,
which could have led to his hatred of Clay and the American System. Additionally, Jackson
held a deep distaste of Clay as a result of their clashes over the presidency in 1824. Finally,
Jackson might have simply believed in limiting the power of the federal government and
protecting the rights of the states and definitely ran for President on that idea. Whatever the
reason, Jackson stood diametrically opposed to Clay’s plan for improving America through
infrastructure and a stable financial institution. The battle between Clay and Jackson over the
American System set a precedent for how the federal government acted regarding
infrastructure over the next two decades.

Ignoring Clay’s and Jackson’s personal issues with each other, the debate over the
internal improvement portion of the American System came down to the conflict of ideals
that created America as it is known today. The battle between the more laissez-faire
approach advocated by Jefferson and the more federal approach advocated by Hamilton
found a new battlefield. In this case, Clay filled the shoes of Hamilton while Jackson
inherited the specter of Jefferson. The Jeffersonian ideal being tested by the American
System was the belief that the federal government should not become involved in local trade.
Any efforts by the government to regulate trade or improve on the economy could only lead
to disaster or worse outcomes than if the “invisible hand” had guided the outcome instead.

Looking back, the idea of a laissez-faire America has always been more fiction than fact, but the belief in that ideal ran deep among Americans.\textsuperscript{18} Much of the nation had moved on from such ideas, as evidenced by the fact that Congress passed a law providing for funding for the Maysville Road, a road that extended the national road from Ohio to Kentucky. Now under the ruling of \textit{Gibbons vs. Ogden}, this law seemed completely legitimate. The government controlled all interstate trade and was well within their rights to build this road and benefit trade. However, Jackson, for reasons that may have been personal rather than political, vetoed the Maysville Road Bill. Little outrage resulted from the veto. Many of the Southern states, desperate as they were to protect the rights of states, supported the veto as a repudiation of federal overreach that might prove useful in their fight to protect slavery. Additionally, people from Pennsylvania and New York already paid to build their own roads and canals, making them less than sympathetic to the plight of Ohioans and others needing federal money to build their infrastructure. The nation interpreted Johnson’s actions as a repudiation of Clay’s attempt to create a national economy and reinforced the natural state of things, a locally based economy. The Maysville Road Veto provides an important example of the state of American thought regarding internal improvements. While many pushed for increased federal funding for internal improvements, the fear of governmental interference in local business still ran deep in the veins of the American people as a whole.\textsuperscript{19}

\textit{Gibbons vs. Ogden} and Clay and Jackson’s battle over the Maysville Road Bill exemplify how Americans felt about governmental interference in the economy in the 1820s and early 1830s. The decision in \textit{Gibbons vs. Ogden} advanced governmental control over

\textsuperscript{19} Howe, \textit{What Hath God Wrought}, 357-360.
economic development, but the method by which *Gibbons vs. Ogden* advanced governmental control made it palatable to Americans. The court case asserted that states could not sell licenses for boats or put taxes when crossing from state-to-state. While the government did limit state power, it fell in line perfectly with the anti-tax, anti-monopoly sentiment of the American public due to their experiences during the American Revolution. The government closely followed the will of the people in this case, thereby allowing a greater degree of power to be exerted by the federal government.

On the other hand, Clay and Jackson’s fight over the Maysville Road Veto delineated the limits of what the American people could accept from their federal government. Whether they believed strongly in states’ rights, local economic power, or that the South should pull themselves up by their bootstraps, building the road seemed an overextension for many Americans. The Maysville Road would not have leveled the playing field like the *Gibbons vs. Ogden* did, but instead would disproportionately benefit the citizens in Ohio and Kentucky. The government got involved in the economy in a way that would benefit one part of the country over another. Enough Americans believed that was overextension, giving the Maysville Road Veto wide support. Combined, these two reactions explicate how Americans had budged on allowing the federal government to interfere in the economy, but only to a certain point. The government could level the playing field or remove barriers to trade, but residents of states still considered themselves members of those states as much as citizens of the United States. The government got involved in something that only economically benefited a few states and the rest of the states disliked the government getting involved as part of the local economic structure. Given that people reacted this strongly to something that would undoubtedly benefit the local economy, their reaction to steamboat regulation that
might negatively impact local economies would commensurately be larger. On the Mississippi, these feelings of federal distrust confronted massive loss of life and property as Americans wrestled over what to do about the scourge of steamboat explosions.\textsuperscript{20}

From the early development of steamboats, fears of explosions existed as a black cloud over the economic opportunity they created. Combining massive amounts of heat with early 1820s ideas of engineering seemed ready-made to end in disaster. Steamboat explosions on the Mississippi began occurring almost as soon steamboats started traversing its wide throughways. The first recorded steamboat explosion on the river occurred on June 9, 1816, when the steamboat \textit{Washington} exploded, a mere five years after the first steamboat travelled down the river.\textsuperscript{21} The \textit{Washington}, at this point the fastest ship on the Ohio, holding the record for the quickest voyage from New Orleans to Nashville, had a clogged safety valve that caused the boiler to explode near Marietta, Ohio, sending scalding water spurting through the air. Those who died could be considered the lucky ones. Survivors had their clothes fuse to their body from the extreme heat and steam. Others suffered debilitating burns on the inside of their lungs from the steam. While only seven passengers and crew died, a similar number were wounded. While resulting in few deaths and little destruction, the explosion of the \textit{Washington} holds the distinction of introducing the American public to an entirely new terror.\textsuperscript{22} The average layperson barely understood how steam could possibly power a boat to travel upstream on the greatest river in the world. As the vessel steamed along and nothing of consequence happened, people simply ignored the unknown dangers of the new technology. Other craft had sunk before, but only from “normal” causes of

\textsuperscript{22} Lloyd, \textit{Steamboat Directory}, 57.
shipwreck including snags, weather, and waterfalls. Those types of disaster threatened Americans less than this new type of disaster since they had a frame of reference on how to process disasters that started happening ever since humanity set out on boats. Lloyd suggests that traditional forms of conveyance on the Mississippi River caused more death and property loss than steamboats, but that the power of boiler explosions made a vivid impact on the American people and their psyche.

The publication of *Lloyd’s Steamboat Directory* in 1856 serves as measure of that vivid impact of steamboat explosions on the American people. Lloyd peddled the book to tourists sailing along the Mississippi and often reveled in the gory details of the explosions of the past as an almost positive part of America’s history. Steamboats explosions carried some positive connotations because of its association with technological progress. This association often blinded many Americans to the true brutality of steamboat explosions. To see the impact of steamboat explosions on groups not blinded by progress, one must look to Native Americans. By the 1830s, government agents that worked with Native Americans began to report that Native Americans had an immense fear of steamboat explosions. Native Americans cared little of the economic benefits of steamboats and cared only for their destructive power. Many Native Americans refused to travel onboard steamships due to the constant stories of explosions told by travelers. Removed from the context of the ideals of the Jacksonian Era, the horrific nature of the steamboat explosions is exposed. The intense fear exhibited by the Native Americans provides a clear picture of the impact of the economic benefit of steamboats and provides a precursor for the later outcry against these explosions.

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The explosion of the *Washington* only served as starting point for a string of explosive disasters on the Mississippi. The next major explosion occurred near Point Coupee, Louisiana in the spring of 1817, when the *Constitution’s* front boiler exploded. The massive burst of energy and heat vaporized eleven people. Panicked passengers jumped into the river to escape the conflagration only to be swept downriver and drowned. A massive quantity of heated liquid quite literally poached a man to the point that his skin sloughed off of his body although he survived for several hours past his poaching. The brand-new *Constitution* additionally burned into the minds of Americans the amount of damage that exploding steamboats could cause. The economic benefit of steamboats began to be weighed against the damage caused to American lives.

Steamboat explosions continued to be a consistent, yet infrequent part of life on the Mississippi. By 1824, the American public had grown slightly weary of the deaths on the Mississippi River. After the explosion of the *Etna* on May 15, plans to stop steamboat explosions came before Congress for the first time. The Congressional Committee on Commerce received a resolution calling for the end of steamboat explosions on the Mississippi. An idea of the thought at the time comes from Congressman Samuel Vinton of Ohio, who stated “A country agitated with terror and dismay looks to us for protection, and demands, at our hands, security for the future.” Using that resolution as a basis, the committee created a report and bill that they passed along to the full House of Representatives. The bill never passed and disappeared without a trace from the public view,

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25 “Steamboat Disaster,” *Wilmingtonian and Delaware Register*, May 27, 1824.
but the government began to explore regulating steamboats. How newspapers reported on those efforts shines a light on America at the beginning of the Jacksonian Era.

This first attempt at steamboat regulation began at an interesting time for the government exerting power on economic affairs in the nation, especially on rivers. Three months prior to the bill being brought before the House of Representatives, *Gibbons vs. Ogden* came before the Supreme Court, with the Court deciding in favor of increased federal power. Someone in the government, such as Samuel Vinton, may have taken that decision as evidence that Americans wanted or would accept more federal interference in their lives. Whether or not the people would have accepted this intrusion into economic life is open to debate. What is not up for debate is that members of Congress thought it possible that the people might accept greater governmental intrusion into their lives. Americans still believed in their *laissez-faire* ideals and the time was not right to begin the regulation of steamboats.

More evidence of this position appeared in the *Wilmingtonian and Delaware Register*, which reported, “We trust that Congress will devise means to prevent a recurrence of these distressing accidents.”27 While this statement does profess faith in the federal government, the statement is fairly neutral. The people, through their avatar of this newspaper, lacked the demanding tone that characterized future newspapers demanding steamboat regulation in the 1830s and beyond. The American people’s level of distaste and disgust with the current state of affairs on the Mississippi had not yet reached the fever pitch required to overcome strong Jeffersonian principles described earlier. Further proof of this lack of acceptance for a greater level of regulation comes from the Secretary of the Treasury’s, William Crawford, report on

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27 “Steamboat Disaster,” *Wilmingtonian and Delaware Register*, May 27, 1824.
the proposed bill.\textsuperscript{28} It claimed that any legislative enactments outside of fines would only create more mischief. This report set the tone for regulation for the next several years, wherein any regulation beyond fines met with distrust from Congress and the general public.\textsuperscript{29}

While Congress and everyday Americans dithered about how to approach the steamboat crisis without compromising their dearly held principles, vessels continued to explode and people died in unusual and terrifying ways. For example, the \textit{Teche}, which exploded near Natchez on May 4, 1825 could have come straight out of a horror movie. At two in the morning, passengers aboard the steamship awakened to a sound like that of cannon fire.\textsuperscript{30} Simultaneously, a rush of air from the explosion blew through the entire steamship, extinguishing every light on board the ship. Thrust into sudden darkness, panic set in among the passengers. Soon, a new light source appeared: the ship had caught fire. Passengers published accounts of the mad dash to reach safety and the gruesome sights they saw while escaping the flames and the steam and jumping into the murky and unwelcoming water that claimed more lives. So much confusion and devastation occurred that no accurate death numbers ever reached the newspapers. The unknown cause of the steamboat explosion struck even greater fear into the hearts of Americans than if the causes were known and somehow fixable. Every piece of evidence from the boiler that could have explained the cause of the explosion had been atomized. Incidents along these line intimated steamboats could and would explode at any time for any reason. Explosions like that of the \textit{Teche} created inaction due to their mysterious origins. Regulation of an unknown problem required a

\textsuperscript{28} H.R. Exec. Doc. No. 69, 18\textsuperscript{th} Cong., 2 Sess. (1825).
comprehensive approach that a regulation-averse nation led by men like William Crawford would not accept. Steamboat explosions needed to be attributed to a specific cause in order for regulation to be enacted.

In the late summer of 1828, the explosion of the *Grampus* allowed Americans to focus their energy on what could actually prevent steamboat explosions. The vessel’s explosion served as one of the three archetypes of steamboat explosion that the Act of 1838 attempted to prevent. *The Grampus* worked as a towboat near New Orleans and while performing its duties all six of the *Grampus*’s boilers exploded sending the captain and passengers fifty feet into the air.\(^{31}\) While the death toll reached the double digits, two aspects of the disaster mark the *Grampus* as unique. The ferocity with which the *Grampus* tore itself apart went unmatched by any steamboat for at least a decade. The destructive explosion may have been influenced by a second unique factor. A passenger that survived noted some irregularities with the boiler prior to the explosion.\(^{32}\) The head engineer went to sleep for the night, leaving his assistant in charge of the boilers. The assistant accidentally left a valve closed for too long after falling asleep at his post, creating a lack of water in the boiler. The amount of heat in the boiler remained the same, creating a white-hot boiler. The assistant engineer realized his mistake and opened the valve, sending cold water into direct contact with the white-hot walls of the boiler. Once the two met, an awesome amount of steam emerged, causing considerable damage. The explosion of the *Grampus* allowed Americans to understand one fix for the steamboat problem that would eventually be addressed in some fashion by the Act of 1838. From explosions caused by engineer error, the American people

\(^{31}\) Lloyd, *Steamboat Directory*, 70.
\(^{32}\) Lloyd, *Steamboat Directory*, 70.
learned that operating steamboats could be difficult and that it made sense to appoint a
governing body that could approve who worked with these engines. The Act of 1838
eventually created an apparatus that they hoped would allow only trustworthy and
mechanically minded men to work as engineers and captains on steamboats.

In late winter of 1830, the *Helen McGregor* exploded while docked in Memphis,
Tennessee. This explosion made an impact for two major reasons and provided another
archetype of steamboat explosion that the Act of 1838 attempted to prevent. One, the *Helen
McGregor* exploded in a wharf bustling with people loading and unloading ships.\(^{33}\) While
nobody aboard the ship suffered any harm, some forty people standing near the ship lost their
lives, making it one of the deadliest steamboat explosions until that time. The immediacy of
the deaths to a major town made a larger impact than a ship decimating an empty bank of a
river. Explosions near ports affected commerce more than isolated explosions due to property
damage and also resulted in more loss of life. Steamboat explosions taking place at and near
port received special treatment in the Act of 1838.\(^{34}\)

The final archetype of steamboat explosions that the Act of 1838 tried to prevent was
the mysterious steamboat explosion in general. If the engineer and the captain said
everything seemed fine, as was often the case, and the steamboat had just come off its
drydocks and started making voyages up and down the Mississippi River, then the steamboat
should not explode. Many of the cases explored earlier show that steamboats with no
outward signs of danger still exploded with alarming regularity. People latched onto the only
possible explanation: boiler failure. Anytime the explosion could not be traced back to

\(^{34}\) Hunter, *Steamboats on the Western Waters*, 266-267.
engineer error, newspapers claimed a boiler defect to be the culprit.\textsuperscript{35} As more and more steamboat explosions began to be reported because of increased river traffic in the 1820s and 1830s, more and more reported defective boilers earned the wrath of scared American citizens. An explosion that scalded fourteen United States citizens only earned five lines and the headline “Another Explosion.”\textsuperscript{36} Earlier, newspapers calmly asked for steamboat regulation and hoped that the government heeded their calls. By 1838, Americans demanded that the Congress act.\textsuperscript{37}

Congress heard concerns about these three archetypes of steamboat explosion and as a result passed the Act of 1838 on July 7, 1838. This legislation focused on vague pronouncements that fell in line with American thought at the time. The legislation focused more on keeping steamboats as a cheap mode of transport and paying lip service to safety rather than actually setting forth meaningful regulation. Some portions of the law set out concrete laws and punishments, but much of the Act left enforcement up to local entities. The largest step ever taken by the federal government to regulate commerce at that time forced every steamboat operating in the United States to acquire a license from their local inspector after a grace period.\textsuperscript{38} The license served as the one portion of the Act of 1838 that if managed better, likely could have prevented future steamboat explosions. Unfortunately, that would not prove to be the case.

\begin{footnotesize}
\textsuperscript{35} Delaware Register, March 28, 1829.
\textsuperscript{36} Southern Argus, April 10, 1838..
\textsuperscript{37} Brockmann, Exploding Steamboats, 95.
\textsuperscript{38} 25th Congress, Session II, Chap. CXCI, Sec 2. Other concrete details are noted in the Act of 1838, most notably in Section Nine, which provides for the usage of signal lights and other methods of preventing steamboat-on-steamboat collisions.
\end{footnotesize}
The method of acquiring a license did not match the ironclad nature of requiring every steamship to hold a license. The Act of 1838 gave local district judges the power to appoint inspectors at their own discretion with no restrictions on how or why those inspectors would be appointed. Of course, the Act instructed the judge to appoint knowledgeable and experienced inspectors but provided no explanation of what knowledgeable or experienced meant. An appointed inspector could have served on steamboats as an engineer for his entire life or simply been an enthusiast interested in the craft. The inspectors examined both the hull and the boilers of steamboats and if everything seemed in order, proffered two certificates stating that the hull and boiler were sound and fit for sailing. In return for the certificates, the steamboats’ owners paid five dollars to the inspector for the inspection. At first glance, this bylaw appeared to stand a decent chance of preventing boiler explosions. Unfortunately, the vagueness of the law did not specify boiler requirements and lacked any real guidelines other than to make sure the steamboat would not explode. Finally, the act required steamboat operators and owners to renew their certificates for boilers every six months and those for hulls once a year.

This portion of the Act attempted to fix the constant unexplained boiler explosions that plagued steamboat travel. The laws seemed encouraging, but the lack of specificity damaged its effectiveness. The government, in line with Jacksonian principles still at the forefront of the public mind, put much of the power of the Act in the hands of local executors who carried out the act without guidelines or specific measurements like the minimum allowable hull or boiler thickness. The law relied on the personal responsibility of local

39 25th Congress, Session II, Chap. CXCI, Sec 3.
40 25th Congress, Session II, Chap. CXCI, Sec 4-5
41 25th Congress, Session II, Chap. CXCI, Sec 6.
42 25th Congress, Session II, Chap. CXCI, Sec. 6.
district judges and the inspectors they appointed to certify that the steamboats driving American commerce were not ticking timebombs.

One other major issue that legislators attempted to fix was the constant threat of operator error. Unfortunately, capitalist America at the time disliked the idea of the government restricting which white men businesses could hire, which made accomplishing that task nigh impossible. The law stated that steamboat owners must employ any number of skilled and experienced engineers necessary to run the ship safely. Again, no description defined what exactly skilled and experienced meant. No attempt was made as to what differentiated a skilled and experienced engineer as opposed to an unskilled and inexperienced engineer. The law basically asked for steamboat owners to provide experienced engineers for their ships and insinuated that steamboat owners could be punished for negligent hiring practices. The lack of any definition of non-negligent hiring practices completely defanged the threat.

The final issue the Act of 1838 attempted to address was steamboat explosions occurring in ports, which caused considerably more destruction than explosions on the river due to the uninsured houses and businesses lining the shore. Therefore, Congress included a byline that required steamboats to open the safety valve of the boiler whenever the steamboat stopped for any reason, which would mostly occur in ports. Congressmen believed that by opening the safety valve, steam could not build up, preventing explosions from occurring in ports. If steamboat operators did not open the safety valve while in port, they could be fined

44 25th Congress, Session II, Chap CXCI, Sec. 6
45 25th Congress, Session II, Chap CXCI, Sec. 6
46 25th Congress, Session II, Chap CXCI, Sec. 7
two hundred dollars. Of all of the problems Congress attempted to confront, preventing
damage to ports seemed the most important. The law stated very clearly what the steamboat
operators had to do, when they must do it, and how it must be done. Unfortunately, even this
portion of the law that authoritatively stated what steamboat operators must do most probably
caused more explosions rather than fewer in the years to come.

One of the most important portions of the Act of 1838 may have been something
amended by the Senate. In the House of Representatives, a Whig congressman Timothy
Childs introduced an amendment that every death by boiler explosion incurred a fine of five
thousand dollars to be paid by the owner of the steamboat. This amendment could have
provided steamboat operators with a real consequence to steamboat explosions.
Unfortunately, the amendment likely would have stifled the growth of steamboats as possible
entrants into the field might have been scared off by the large fines associated with
catastrophic failure. The Senate removed the fine from the bill and instead added a portion
that stated that any explosion served as *prima facie* evidence for negligence, forcing
steamboat owners to prove they had not been negligent. A steamboat owner could only be
negligent if he failed to heed the laws earlier in the statute that were so loosely defined that
cases of negligence rarely ruled in favor of the victims. While the addition of this
amendment might have given the Act of 1838 teeth, its removal made the Act a paper tiger.

The Act of 1838 is representative of the struggle between the ideas of Henry Clay’s
American System, Jacksonian thought, and the people’s desire for safety, resulting in a
remarkably confused statute. The legislation contains sections that tried to promote trade and

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47 *Southern Argus*, July 24, 1838.
48 25th Congress, Session II, Chap. CXCI, Sec. 13
49 *Daily Crescent*, March 30, 1849.
safety as proponents of the American System had desired, but the Jacksonian fears undercut them at every turn. Jackson called for an improved Navy in both his inaugural and farewell address, but the system of thought he exemplified failed to protect Americans from maritime threats at home. Steamboats formed such an integral part of American economic life that attempts to regulate steamboats could be interpreted as an attack on capitalism itself. Inspections could prevent boilers from exploding but the Jacksonian unwillingness to demand personal responsibility stood in the way of stringent and codified inspections. Large, automatic fines could put the fear of God into steamboat operators and make the rivers safer, but Jacksonian thought dictated that free enterprise should not be restricted. The public outcry had not yet reached the fever pitch necessary to overcome America’s dearly held Jacksonian ideals and as a result the Act of 1838 only made half-hearted overtures towards preventing boiler explosions from claiming the lives and livelihoods of innocent Americans.

CHAPTER TWO: THE INTERIM

The steamboat *Louisiana* was in the process of leaving the port of New Orleans on November 15, 1849 when the main boiler exploded, tearing away all of its cabins and decks. To make matters worse, two passing ships, the *Storm* and the *Bostona*, got caught by shrapnel from the explosion. Both ships had decks ripped away and holes gashed in their hulls. Most other steamboat explosions had occurred away from port where damage was minimized due to the lack of nearby buildings and people. The damage to the port of New Orleans was immense. Sailors and passengers onboard the *Louisiana* died. Sailors onboard the *Storm* and the *Bostona* died. Unlucky pedestrians died. Apparently, a large enough number of newsboys died that it was even mentioned in local newspapers.\(^{51}\)

The scene described is one of gore and brutality. Rescuers found limbs scattered all over the shoreline. A man laid on the dock with his entrails spilling out as people tried desperately to put him back inside of himself. A woman sat shell-shocked while blood poured from the stump that used to be her leg. A man’s brain sat exposed while his corpse sank into the levee. The explosion sent several large pieces of the boiler arcing high into the sky. One cleaved a mule in two and retained enough momentum to hit a horse carriage, instantly killing both horse and driver.\(^{52}\) Another piece flew two hundred yards towards a local coffeehouse knocking down several support pillars in the front of the establishment’s portico. The damage could have been even more severe if not for several bales of hay that the

\(^{51}\) *The Daily Crescent*, November 16, 1849.
\(^{52}\) *The Daily Crescent*, November 16, 1849.
piece of metal sliced through on its way to the coffeehouse. In general, the scene at the explosion of the *Louisiana* stunk of blood and acrid smoke, totally encapsulating the dangers of steamboats. The exact death toll of the incident cannot be determined due to the number of passengers vaporized and the deaths of those not aboard a steamboat and therefore not on a passenger manifest. The mayor estimated one hundred and fifty dead as the lowest estimate while others suggested as many as two hundred died. In addition, the citizens of New Orleans suffered an uncountable number of injuries, scaldings, and emotional damages.

This explosion caused an unprecedented level of devastation and destruction. The explosion caused damage to three steamboats, killed a massive amount of people and inflicted noticeable damage to the areas surrounding the levee of New Orleans. Most previous explosions happened on rivers near nothing or near a small town. They were tragedies, but for most people the slow speed with which news traveled from rural areas coupled with the economic benefit of steamboats dulled the impact of the disasters. Then, the *Louisiana* exploded in New Orleans. All of the horrific violence that had once been kept at a distance became real to an entire city. News traveled all over the country immediately and since the *Louisiana* exploded in a bustling metropolis, there was no shortage of witnesses willing to share their stories. The explosion affected every layer of the social strata with even the upper classes becoming more aware of the dangers that lurked on the Mississippi River. The news-reading population heard reports of the visceral carnage in more than the standard three lines declaring location and death toll. It is no surprise that two weeks later newspapers began publishing demands to make steamboats safer and calling on the federal government to

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protect American lives with renewed vigor. The specter of steamboat explosions had been made real in a way like never before. The free market had failed. While the government was now expected to do something, it took until 1852 to actually make any significant legal changes.

After thirty years of steamboats operating relatively outside of governmental influence despite the steps taken under the Steamboat Act of 1838, the issues surrounding the safe operation of steamboats escalated during the late 1840s and early 1850s, culminating in the explosion of the *Louisiana*. Steamboat explosions did not leave the public consciousness during the interim period, but the fervor for regulation decreased somewhat. Despite this fervor, the year after the passage of the Act of 1838, steamboat explosions remained at the forefront of the general public’s mind. A Washington D.C. newspaper published a Philadelphian physician’s treatment for burns, recommending a poultice of ash and lard for the survivors of steamboat explosions claiming that it would save many valuable lives. The poultice must have helped in small amounts as the recipe reappeared twelve years later in an Ohio newspaper as a cure for burns, especially in the case of steamboats. The people still thought about the threat of steamboat explosions, but in 1839, the eye of the nation focused mostly on treatment rather than addressing the root of the cause directly after an attempt at legislating steamboats in 1838. As time passed, Americans noted the rising toll of steamboat explosions and complaints and calls to action grew louder, reaching a fever pitch by the early 1850s.

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54 *The Daily Crescent*, November 30, 1849.
55 *Native American*, March 19, 1839.
56 *Portsmouth Enquirer*, July 7, 1851.
Steamboat explosions held their place in the public’s consciousness because while the Act of 1838 attempted to minimally regulate steamboats, it failed to make even the minimal impact that legislators intended. In fact, the legislation may have made the crisis of steamboat explosions worse than it had been before its passage. According to a newspaper article written in 1839, some of the tenets of the act made steamboats more likely to explode.\(^{57}\) Some steamboats operated at a higher pressure than assumed by the Act of 1838 caused them to explode. The legislation asserted that steamboats should let off steam through a safety valve when the vessel stopped lest they pay a two hundred dollar fine. For steamboats that operated at a lower pressure, letting off steam represented a sensible safety precaution. At a higher pressure, releasing steam enhanced the chance of an explosion occurring. When high pressure steamboat came to a stop, the pumps that filled the boilers with water stopped too. With the safety valve open and the pumps stopped, a massive amount of water escaped the boiler, as the boiler continued to be heated. Therefore, the newly exposed and newly dry boiler became red hot. Once high-pressure steamboats began to move again, the pumps would intake fresh water which would come into contact with the red-hot walls of the boiler. The mixture of fresh water and a superheated boiler wall created an intense steam that the boilers could not handle. This caused more boiler explosions with a higher chance to explode near wharfs and ports leading to two-thirds of explosions occurring as steamboats left ports.\(^{58}\)

The law that Congress mandated at the risk of fines could have caused more issues than it solved, showing some of the issues with the Act of 1838. While the inspections mandated under the act could have prevented these issues, the inspections created their own

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\(^{57}\) *True American*, January 7, 1839.

\(^{58}\) Hunter, *Steamboats on the Western Waters*, 296.
set of problems. The pay for the government inspectors, five dollars per inspection, did not recruit the best men to work as inspectors and the men that did work as inspectors often did not do their due diligence.\textsuperscript{59} A steamboat called the \textit{Lost Warren} had recently patched a hole in its boiler right before an inspector inspected the steamboat.\textsuperscript{60} The engineers did not mention the patch to the inspector, assuming that the inspector would take note of the patch. He did not. Inspections could catch boiler and hull deficiencies but not for five dollars. The government grossly underestimated the cost of these inspections and therefore the inspections lacked any real regulatory power. Less than a year after the Act of 1838 passed, many of the bylaws it proscribed had already proven useless in terms of actually preventing steamboat explosions. A new law needed to be passed to make a difference and prevent steamboat explosions, but it would take several years for public opinion to encourage Congress to take an interest in steamboat regulation.

One of humanity’s greatest strengths is its adaptability to horrible situations. In this case, the American people simply accepted that people would continue to die due to faulty steamboats’ boiler explosions. A poem published in 1843 by a small Missouri paper waxed poetic about the events of the last year and looked forward to the future.\textsuperscript{61} Incredibly positive about America and even describing the nation overcoming many of the issues common to life that simply could not be solved, the poem lumps steamboat explosions alongside storms, floods, and fires as crises of the human condition, rhyming, “Duels and murders, fire and floods, storms, with the loss of life and goods, steamboat and cabinet explosions, Miller and Mormonite commotions.”\textsuperscript{62} Although anecdotal, it speaks to how America felt about

\textsuperscript{59} \textit{The Daily Crescent}, November 30, 1849.
\textsuperscript{60} \textit{True American}, January 7, 1839.
\textsuperscript{61} \textit{The Guard}, January 3, 1843.
\textsuperscript{62} \textit{The Guard}, January 3, 1843.
steamboat explosions at this time. They obviously represented disasters, but what could be done to stop them? The economy of much of the nation relied on steamboats and the occasional explosion was little more than a small issue in the face of this massive economic system. Despite some voices speaking out against the Act of 1838, in the early 1840s, the newspapers as a whole seemed to return to accepting the destruction because of the many benefits of the steamboat rather than continue to rabble rouse against steamboat explosions.\textsuperscript{63}

One of the biggest obstacles to creating more safety regulations regarding steamboats came from the American way of viewing business regulation at the time. The Commissioner of Patent issued a statement in 1849 that stated, “Nothing can add to the force of motives drawn from the love of money and the desire of self-preservation.”\textsuperscript{64} This short statement exemplifies the general thoughts of most Americans towards business during the period. The government did not need to add an incentive for safety through regulations or other methods. The invisible hand guided the economy and if the invisible hand desired safety along the American waterways, capitalism would provide. Absolutely horrific things needed to happen to convince the majority of Americans that a bill more drastic than the Act of 1838 was necessary to deal with issues of steamboat explosions.

American identity needed to change in order for more progress to take place in the arena of steamboat regulation. A major change in the economy of the United States that only hints exist of is the rise of railroads. Trains allowed travel at these great speeds with considerably less risk than by traveling by steam. Of three major railways in Europe, the Belgian railroads suffered the most deaths with three deaths over the course of a year.\textsuperscript{65}

\textsuperscript{63} Brown, \textit{Limbs on the Levee}, 53.
\textsuperscript{64} \textit{The Republic} July 16, 1849.
\textsuperscript{65} \textit{Boon's Lick Times}, September 18, 1847.
Meanwhile steamboat explosions occurred with frightening regularity and only five people dying from an explosion would be considered a miracle. Reported by a minor newspaper from a small Missouri town, in reality the comparison between railroads and steamboats may not have affected the public consciousness towards steamboats at all. Yet, assuming that it did affect public consciousness, this interplay between railroads and steamboats appears fascinating. Steamboats and railroads existed as rivals that conduct business in such different ways, but they remain similar in so many ways. Both trains and steamboats required a massive amount of infrastructure spending in order to operate. Steamboats required river dredging and snag removal and trains obviously required tracks. The visibility of the train’s infrastructure compared to the steamboat’s infrastructure may have influenced how people viewed train accidents versus steamboat accidents. The train is mostly in the control of its operators unless a bison is crowding the track. Therefore, the expectation of safety remained much higher on these man-made tracks even though river avenues became man-made as in the case of canals. The dichotomy between the safety of these two modes of travel as rivers became more man-made and trains became more prevalent seemed too great to be ignored. Train boilers could be controlled to a greater degree than steamboat boilers due to train boilers not being submerged in water and reliant on the whims of natural waterways. Even when train boilers did explode, the boiler was located further away from the passengers meaning that boiler explosions did not pose as severe a threat for train passengers as they did for steamboat passengers. If a train’s boiler exploded, there is a very small chance it will sink as well. The considerable safety of one mode of transport may have made people realize steamboats lacked safety and security and changed their perception of the steamboat explosions that plagued the Mississippi River.
A rash of steamboat accidents between 1847 and 1852 made the idea of further regulating steamboats more palatable for a nation that little trusted federal government regulation. Not all of the disasters occurred as a result of boiler issues, the only cause of disaster that the Act of 1838 attempted to prevent. For example, the steamboat *Marengo* sunk on December 6, 1848, when it collided with the steamboat *Harry Hill* near the Tennessee city of Clarksville.66 When, the two steamboats made contact, a connecting pipe on the *Marengo* exploded, killing several members of the crew while all of the passengers survived and the *Harry Hill* towed *Marengo* to the shore where it sank. Disasters of this nature did little to move the needle of public opinion. The papers wrote about these accidents but with no editorializing about how things needed to change. Two steamboats colliding seemed like something that the government could not change without overstepping its bounds as viewed by the people of the time. Steamboats collided and the bodies of some river crew seemed to be viewed as a necessary part of river commerce. Steamboat disasters of this nature could not be sensationalized like later, more explosive disasters. In any case, disasters of this nature did little to change the mind of the nation.

Collisions on the river did not create lasting change in the minds of the American public. Changing the minds of Americans required massive loss of life on a scale that even an America remarkably familiar with death would find distasteful. Steamboat explosions like that of the *Lucy Walker* in 1844 stood out as major events and are remembered. When the *Lucy Walker* stopped for repairs, the water levels in its boiler grew dangerously low.67 The boiler burst and vaporized the ship. Pieces of the ship and pieces of the passengers splattered

66 *Southern Sentinel*, December 7, 1848.
67 *The Whig Standard*, October 29, 1844.
all over the Mississippi and the shore. A man flew fifty feet in the air and came down back through the deck of the ship. The explosion cleaved another man in two. The explosion killed or wounded some seventy men and women. Within minutes the vessel had disappeared completely.\(^68\) Massive disasters such as this obviously made an impact. What may not be as obvious is how the seemingly constant explosions wore on the American conscience.

Considering the course of significant steamboat explosions reported during the year of 1848 puts into sharp relief the level of destruction visited upon the rivers of America by faulty boilers.\(^69\) The year began with an unfortunate bang. On December 30, 1847, the new steamboat \textit{A.N. Johnson} suffered a burst boiler while traveling along the Ohio River near Maysville.\(^70\) Ice likely clogged the pumps while the \textit{A.N. Johnson} sat at port, causing a lack of water in the boiler leading to a rupture.\(^71\) Between seventy and one hundred people died when the boiler exploded. Compounding matters, the steamboat caught on fire, making rescue difficult. Sounds of screaming children and horses mixed with the acrid smoke, creating a horrendous scene. The boilers flew into a nearby corn field, creating a fire that the already strained rescuers struggled to quell.\(^72\) Only the close proximity to a port saved many of the passengers who draped themselves in sheets to protect themselves from steam or jumped off the boat to escape the devastation.\(^73\)

Two weeks later, the \textit{Blue Ridge} exploded while sailing on the Ohio River near Gallipolis on January 14. Thirty of the seventy passengers died from the explosion with most

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\(^{68}\) Lloyd, \textit{Steamboat Directory}. 142-144.

\(^{69}\) I decided to define significant as a death toll over five or multiple newspaper articles devoting a large amount of space to that disaster. Enumerating every explosion in the confines would be extraordinarily tedious. -

\(^{70}\) \textit{Alexandria Gazette}, January 1, 1848.

\(^{71}\) \textit{Lancaster Gazette}, January 7, 1848.


\(^{73}\) \textit{Spirit of Democracy}, January 8, 1848.
of the survivors floating down river on the cabin after the hull exploded. Thankfully, the
people of Gallipolis rose to the occasion and rescued the people floating rudderlessly down
the river. The fate of the Second Pilot illustrates the immense destructive power of even a
smaller boiler explosion. As the Second Pilot slept in his room, the boiler explosion threw
him more than 100 yards to the shore of the Ohio River.\textsuperscript{74} He miraculously escaped with only
minor injuries, but his flight provides an important example of the sheer destructive power of
the steamboat boiler. Also of note, two months earlier the engineer had warned the owner of
the ship that he was scared of the boilers.\textsuperscript{75} Despite his warnings, the steamboat continued to
operate as normal and no government apparatus existed to prevent them.

The next major steamboat explosion occurred in early June. The steamboat \textit{H. Kenney}
exploded June 3 on the Tombigbee River.\textsuperscript{76} Thirty people died immediately from the
explosion while twelve suffered heavy scalding from the steam. The ship sank almost
immediately into the river, leaving the survivors to swim to the shore where they were taken
to a local hospital. About the same time, on May 27 the steamboat \textit{Clarksville} caught fire on
the Mississippi River near Napoleon, Arkansas leading to the death of some twenty-five
passengers.\textsuperscript{77} The fire started near the boiler and soon swept over the entire ship.
Unfortunately, the steamboat carried a large quantity of gunpowder, and once the fire
reached it, most of the ship went up in flames. Passengers had jumped off the boat by this
point, but those who remained burned with the ship. Thankfully the owner had insured the
steamboat, allowing him to suffer no monetary loss from this disaster.

\textsuperscript{74} \textit{Tri-Weekly Journal}, January 15 1848.
\textsuperscript{75} \textit{Spirit of Democracy}, January 22 1848.
\textsuperscript{76} \textit{Richmond Enquirer}, June 6 1848.
\textsuperscript{77} \textit{Mississippi Creole}, June 9, 1848.
A few months later, on August 9, 1848, the steamboat *Edward Bates* suffered an accident while on the Mississippi River near Hamburg, Illinois.\footnote{St. Louis Union, August 14, 1848.} Two flues connected to a steamboat boiler collapsed, sending steam throughout the lower deck, massively scalding almost every man, woman, and child aboard. Passengers jumped off of the ship attempting to escape the brutal steam, which led to the drowning of several passengers and crew. Overall, twenty-eight lost their lives and thirty suffered horrible burns. The *Edward Bates* had just been built and the crew consisted of an experienced captain, first mate, and engineer. The steamship should not have exploded, yet it did. The explosion occurred far from civilization, leading to scarcity of details.\footnote{Lloyd, Steamboat Directory, 175.}

On September 17, the *Concordia* had three boilers explode while traveling on the Mississippi River.\footnote{Daily Crescent, September 19, 1848.} Hours after leaving port in Plaquemine, Louisiana, three boilers burst, ripping away much of the front half of the ship. Investigators could not discover the cause of the boiler explosion, but it is likely that a boiler with an open safety valve in port, mandated by the Act of 1838, contributed to the explosion according to investigations at the time.\footnote{Daily Crescent, September 26, 1848.} Seven crewmembers died. The *Daily Crescent* considered the *Concordia* one of the best and most popular ships sailing the Mississippi, and its explosion continued a troubling trend of steamboats having boiler issues. Brand-new ships as well as seasoned ships seemed just as vulnerable, pointing to a major issue in the testing and production of boilers for steamships.

The steamboat explosions recounted above are not meant to be a full accounting of every boiler explosion that occurred in 1848. Instead, the narrative simply gives an overview
of the general devastation that steamboat explosions took on the lives of the American people. Massive steamboat accidents killing twenty or thirty people occurred consistently through the year without any clear wrongdoing from either captains, manufacturers, or engineers. Multiple minor explosions or accidents took place frequently on American rivers and resentment towards these and the larger explosions festered. Americans had grown sick of the constant loss of life and property from the danger of steamboats. Eventually, this anger reached Washington and politicians called for practical changes on the floor of Congress.

In early 1848, the idea of making major changes to steamboat regulation came before Congress for the first time since the passage of the Act of 1838. In February, various members of the Senate and the House of Representatives called for the Committee of Commerce to prepare a report on the rash of steamboat explosions across the nation. A month later, Representative Bannon Goforth Thibodeaux of Louisiana presented the report from the Committee of Commerce to the floor. The report took much of its information from the Commissioner of Patent’s report produced in December 1847. This legislation did make a few changes to the Act of 1838, but not enough changed to make a difference, in making the waterways a significantly safer place to travel.

The most important change related to the phenomenon of inspected boilers exploding. Every steamboat and boiler that had exploded had been current on its inspection, yet explosions still occurred. Something needed to change in the inspections. The report called for adding two disinterested witnesses appointed by the collector of ports or the district judge for all inspections. Each witness would be paid one dollar to certify that all of the required

82 The Daily Union, February 15, 1848.
83 The Daily Crescent March 22, 1848.
inspections took place correctly. While a positive step, the supplementary act did not do enough to increase safety. First of all, these witnesses had no idea what a healthy boiler looked like and could in no way tell if the inspector actually performed his duties satisfactorily. Secondly, the shipowners still had to pay for their inspections, ensuring that they would get as few inspections as possible as is the wont of most business owners.  

The rest of the changes introduced in the supplemental bill were minuscule at best. The new bill added more fines for boiler explosions, if fault could be proven on either the part of the captain or the engineer. The bill outlawed charging manslaughter against either the captain or the engineer, in line with the general pro-business bent of the United States at the time. While the increased fines seem like they would force the steamboat owners to ensure the safety of their vessel, the conditions on those fines made them difficult to enforce. If the steamboat had been inspected within the prescribed period, rarely would blame be assigned to the ship’s operators.

In addition, the new supplementary act set out the required number of lifeboats onboard a steamboat. The final portions of the supplementary act required Collectors of the Port to cooperate with authorities and gather information regarding any steamboat explosions or accidents near their port. Again, this act improved on the original Act of 1838, but it did not go far enough to create substantial change. As a matter of probability, many explosions happened far away from port. Additionally, The Collectors of Port’s lack of adequate compensation meant this supplementary act accomplished very little. The American government and the American people did not yet have the impetus to shackle industry to the

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84 Hunter, *Steamboats on the Western Waters*, 266-270.
85 *The Daily Crescent*, March 22, 1848.
86 *The Daily Crescent*, March 22, 1848.
level that would be necessary to create steamboat safety. More tragedies would have to occur before the specter of Jacksonian thought lifted from the steamboat discussion.

The year after the passage of the supplementary act, the explosion of the Louisiana occurred. The supplementary law passed in 1848 had not prevented steamboat explosions. The judicial investigation into the explosion had some commonsense ideas as to what needed to be changed in order to actually prevent disasters on this scale. The biggest reform was a change in the governing body in charge of appointing inspectors. Under the Act of 1838, the judge of each federal district bore the responsibility of appointing steamboat inspectors. This system had a myriad number of issues, most of which stemmed from most judges’ utter ignorance about the workings of a steamboat. The local judge rarely had the knowledge to pick competent examiners, leading to useless inspectors or his local cronies being given the job. Additionally, the government set the price for inspections very low and paid by inspection rather than by the hour, incentivizing a rush job of the inspection. Instead, the judicial investigation argued for a board of practical engineers that appointed inspectors certified to be knowledgeable about steamboats and set qualifications for any engineer serving onboard a steamship. This board of engineers would be more active and more knowledgeable than the judges previously filling those roles.

Other suggested small changes in how the government approached steamboat regulation included rolling together insurance inspections and government inspections, something outlawed under the Act of 1838. Insurance inspections at the time were already more strenuous than that of the government, so it only made sense to subsidize those

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87 The Daily Crescent, November 30, 1849.
88 Hunter, Steamboats on the Western Waters, 275-280.
89 The Daily Crescent, November 30, 1849.
insurance inspections rather than continuing to doubly inspect the boilers. Neither type of inspection seemed to make a huge difference regarding safety but only requiring one inspection would decrease costs. Another important change increased how often steamboat boilers were inspected. The condition of a steamboat boiler changed quickly, and yearly inspections did not actually prevent anything. Requiring inspections every trip down the river would actually make the steamboat inspections mean something. Additionally, people at the time called for an end of the certificates required by the Act of 1838, since they did not certify much of anything and only gave boat owners a false sense of security. No actual standards for steamboat boilers had been set so the certification simply showed that the local inspector thought the boiler had passed, not that it was of a certain thickness or could pull through a certain volume of gallons per minute. Certification would only mean something if there were set standards for what it meant to be certified. As those standards did not exist, the certification was worse than useless. Finally, the judicial review recommended that it be made possible to prosecute captains and engineers but thought that it seemed impossible to put into place. The commission that produced the report concluded that all of the above ideas seemed well-founded and would likely prevent explosions.

The commission recommended that none of them be put in place, insisting that enacting any of these changes would overstep the bounds of the federal government and invite oppression. After the explosion of the *Louisiana*, Americans held to their beliefs that the federal government could not be trusted and that the dangers of increased federal oversight outweighed the possible benefits. Americans held to their beliefs that it all came

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90 *The Daily Crescent*, November 30, 1849.
91 *The Daily Crescent*, November 30, 1849.
down to the personal responsibility of the steamboat engineers and captains. Personal responsibility was the be-all, end-all and the government could not legislate responsibility or morality. In that way, these sensible ideas fell by the wayside due to the fears Americans held about the federal government.\textsuperscript{92}

While several of those ideas to increase safety on the rivers and lakes of America were relatively new in America, the inspiration for many of them came from British laws on the same subject. The British passed laws regulating steamboats in 1846 and those laws made a major impact on Americans calling for changes in steamboat regulation.\textsuperscript{93} The history of steamboat regulation in Britain followed a relatively similar path to that of America. The deaths of its citizens were weighed against the \textit{laissez-faire} economic system that made them rich and it took several decades for the quantity of death and property loss to grow to the point to demand changes.\textsuperscript{94} The British Parliament did not pass more overly restrictive laws than in the American Act of 1838 in their 1846 Steam Navigation Law, but the manner in which the government enforced the laws made them quite effective. Or rather the British government got rather lucky with the man that they appointed as head of the Steamboat Department of the Board of Trade. Captain H.M. Denham, the first head of the department, played an important role in protecting the British waterways. The original law was barebones and had many blindspots. Unlike in America, where the highest governmental authority rested with district judges that cared little about regulating steamboats, Denham’s only job


was regulating steamboats. Therefore, Denham plugged many loopholes that continued to exist in America. For example, the wording of the original act made it impossible to enforce many of the laws on rivers. Denham took note of this and lobbied the government to fix this loophole and by 1848 the loophole had been closed. He noticed the inspectors appointed by local steamship owners tended to be too lax and he pushed for the Admiralty to appoint those inspectors, a goal he achieved in 1851. In general, Denham provided a shining example of how national government involvement could lead to better outcomes than relying on local enforcement. Many of the changes Denham made would be similar to the major change made by the Americans of the late 1840s and early 1850s. By going against their laissez-faire roots and appointing a national overseer, the British created an efficient system. If the Act of 1838 had been modified in that way from a local government official involved in overseeing it, many of the disasters that plagued America may have been prevented.

Despite new and borrowed ideas presented by various Congressman, no real governmental movement towards changes occurred prior to 1850. By this time, the tenor of public discussion in newspapers about steamboat explosions began to undergo an evolution. Many of the explosions that occurred in 1848 were described as unfortunate accidents that simply could not be prevented. By 1850, the tone of steamboat reporting had changed markedly. Instead of recommending a newly invented steam valve that could prevent boiler explosions for the thirtieth time or praying to God that these catastrophes stop, American eyes turned to the government and its inaction. The wording used to describe the various explosions also changed. Instead of using words like “unfortunate accident” papers described

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boiler explosions as “a disgrace to our free country to allow such merciless slaughtering of her citizens.” The country at large had finally awakened to the wholesale slaughter in their supposedly civilized, enlightened nation. Newspapers demonstrated the need for a new inspection system. Boilers exploding did not result from unforeseeable mistakes, but from serious missteps in how the country tested and inspected boilers. The disconnect between the United States fighting to save sailors in a dangerous situation in Japan but allowing massive amounts of death on its own rivers disturbed Americans and struck them as rather off. The newspapers demanded change by constantly publishing calls for governmental action and accepted that the free market was not going to solve these safety issues. The independence of the Jacksonian era had faded, and Americans seemed willing to give up some freedoms to prevent these tragedies. Congress listened and in late 1852 began to look at passing another bill regulating steamboats.

The interim period between the Act of 1838 and the Act of 1852 should not be described as a dead period for steamboat regulation. The federal government passed two laws regulating steamboats during this period and incremental progress toward true safety occurred. Real change needed to occur in 1852, and it did. The alteration in public opinion is instructive to any historian because it shows exactly how much monetary damage and death was needed to change how America as a whole thinks and feels. Six hundred people died on the Mississippi only from steamboat explosions in 1849. It may not be entirely accurate, but by looking at the number of deaths and explosion, an interesting insight into the psyche of the American people at the time can be unearthed. America so believed in its *laissez-faire*

96 *Scientific American* 5, no. 48 (1850), 384.
97 *Scientific American* 6, no. 27 (1851), 213.
98 *Scientific American* 7, no. 31 (1852), 242.
99 *Flag of the Union*, June 6, 1852.
economy and the rights of the states, but the boiler explosion crisis pushed those ideals to the breaking point by discovering how many lives the ideals were worth. It appeared that six hundred lives a year lost on the Mississippi trumped many of the ideals Americans had held dear. Obviously other important historical events occurred during this period. America fought a war with Mexico and the fight over slavery reached a fever pitch. Yet, the changing attitude towards steamboat explosions signals a massive reform movement within the United States. The new thought on steamboat explosions signaled a sea change towards a softer United States where the mass death of white people that the federal government had the capacity to prevent would no longer be tolerated. Americans agreed that regulation, albeit on a small scale, could improve the lot of the nation. A small step to be sure, but a significant step nonetheless.
CHAPTER THREE: PROMISE FULFILLED

Just weeks after the end of the Civil War and the day after federal troops caught and killed John Wilkes Booth, another disaster rocked the still-fragile nation. On April 27, 1865, the Sultana exploded near the city of Memphis, Tennessee while carrying some two thousand Union soldiers freed from the Cahaba prison in Selma, Alabama. As the story goes, the captain of the Sultana, James Mason, made a deal with the quartermaster to transport Union prisoners of war to the North. On the voyage to Memphis, one of the Sultana’s four boilers sprang a leak, forcing the vessel to sail into Memphis at lowered pressure. At this point, Captain Mason becomes the villain of the story. Rather than spend the time and money to patch adequately the leaking boiler, the captain asked the engineer to complete a hasty patch job lest the Sultana lose the lucrative contract to transport Union soldiers. The boiler mechanic who repaired the boiler believed that the bulge that had formed in the side of the boiler required the placement of an entirely new boiler wall but instead was only allowed by the chief engineer to patch the hole, a fix that the mechanic considered temporary.¹⁰⁰

Due to greed and confusion on the part of the officers in charge of the former prisoners of war, two thousand former prisoners of war were loaded onto the Sultana, even though she was certified to carry less than four hundred. Captain Mason, who had skirted the

Act of 1852 and its bylaws all throughout the Civil War, now appealed to it in order to remove some of the men from his overcrowded ship.\textsuperscript{101} Due to claims of military necessity, his requests fell on deaf ears. As the steamer left Memphis, Tennessee with too many men and an unsafe boiler, the mood on board the ship was that of jubilation. Despite the crowded accommodations, men were finally going home. Very few of them actually reached their destination.

Four hours after the \textit{Sultana} left Memphis, a boiler exploded. It occurred because of overwork, a lack of water, and the weakened boiler wall. The carnage of the explosion is indescribable. Men were thrown three hundred feet in the air. One man used both a living and then a dead horse as a life raft to survive the cold waters of the Mississippi. The fire and steam transformed men into shrieking facsimiles of their previous selves. Several men simply gave up attempting to escape the conflagrations and asked to be left to die onboard the floating coffin. Even the survivors suffered light scalding from the massive explosion. Some that did not die in the initial blast died due to the confusion and despair that infected the massively overloaded vessel as fire spread across all decks. Entire books could and have been written on the horrific stories of death and destruction onboard the \textit{Sultana}. To be concise, few disasters in American history have ever stunk so much of fear and death.\textsuperscript{102}

Outside of the horrible destruction perpetrated by the \textit{Sultana}, this disaster shines a light on the strengths and weaknesses of the Act of 1852. If the proscriptions of the act had been followed tightly, it is likely that this disaster would have been prevented. Once local inspectors were given reason to reinspect by the hiring of a boiler mechanic, inspectors could

\textsuperscript{101} Salecker, \textit{Disaster on the Mississippi}, 51.

\textsuperscript{102} William O’Bryant, \textit{Cahaba Prison and the Sultana Disaster}. (Tuscaloosa: University of Alabama Press, 1990.)
have prevented the *Sultana* from leaving port. One more layer of redundancy could have prevented the greatest maritime disaster in American history. In many ways, the tragedy of the *Sultana* illustrates the problems with the Act of 1852 as a whole. The guiding principles behind the Act of 1852 were all valid, but the government did not give itself enough power to adequately enforce its bylaws, leading to most of its failures.

The Steamboat Act of 1852, while imperfect, improved on many of the failures of the earlier Act of 1838, which it technically amended. As a whole, the Act of 1852 uses significantly more precise language throughout the entire bill. For example, while in the Act of 1838 inspectors were required to make sure that boilers and hulls were safe, the Act of 1852 states specifics such as the size of the hose and pumps required on every steamboat. Ships of a larger size required more lifeboats, while in the Act of 1838 each vessel regardless of size stocked the same number of lifeboats. A historian could record the different ways the Act of 1852 provided more specificity, but as a whole the new law injected structure that the earlier laws completely lacked. Even small changes like how Congress approached the strictness of their laws signals a new willingness for Congress to actively regulate industry without concerning themselves about restricting industry. This concept of increased governmental restriction continued through the regulation of steamboats after 1852.\(^{103}\)

The lack of oversight or specificity within the Act of 1838’s inspection had been one of the most lambasted portions of the earlier act and one of the problems that the Act of 1852 focused on. The law did not direct inspectors to examine any part of the steamboat in any real detail and expected every inspector to fully understand every part of a steamboat despite the specialized knowledge required to build and operate each individual part. The first

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\(^{103}\) 32\(^{nd}\) Congress, Session I, Ch. 106, Sec. 2-4
change made by the Act of 1852 reformed the bodies in charge of appointing inspectors. Instead of relying on a district judge ignorant of steamboats to appoint inspectors, other officials more likely to have some understanding of steamboats joined the judge in picking inspectors. The collector of customs in a select number of collection districts and the closest supervising inspectors across the United States would be sanctioned to join the local judge in selecting steamboat inspectors. In the case of the Mississippi River, the collectors of customs in St. Louis and New Orleans served in this role. The president appointed the nine supervising inspectors, all men who could creditably claim to understand the inner workings of steam vessels. The law allotted fifteen hundred dollars per year for each supervising inspector. The collector of customs obviously had considerably more contact with steamboat operators and would likely have a better idea of who to appoint as steamboat inspectors. The supervising inspectors served as experts in the field and oversaw the actions of the inspectors beneath them. Each collection district appointed two inspectors, each of whom examined a different part of the steamboat prone to causing disasters. One inspector certified that the hull of the steamboat was sound while the other certified the soundness of the boiler. The law required that each man served as either a shipwright or an engineer aboard a steamboat and demonstrated practical knowledge about their professed area of specialty. Once certification of engineers from the Act of 1852 became commonplace, finding qualified inspectors became relatively easy as there was a known pool of candidates from which to draw from. The law specifically notes the parts of both the hull and the boiler that must be examined by the inspectors rather than simply leaving the safety of the vessels up to the personal thoughts of the appointed inspector. Finally, once the credentials of each inspector had been inspected, the appointment was sent to Secretary of the Treasury, who confirmed the appointment. The
inspectors’ annual salary depended on the district they worked in. An inspector in New London earned three hundred dollars while inspectors in New York and New Orleans earned two thousand dollars. The steamboat operators still paid for the privilege of inspections, but the pay no longer went directly to the inspectors. Additionally, even if it had, an inspection for the smallest steamboat cost thirty five dollars, meaning that inspectors had a greater incentive to take greater care with the inspection.¹⁰⁴

The Act of 1852 instituted a dizzying array of laws stating what inspectors must test for every steam-powered vessel. In a continuation from the Act of 1838, only one steamboat inspection per year was required by both the Inspector of Hulls and the Inspectors of Boilers. In addition to the yearly inspection, the supervisory inspectors were expected to cursorily examine all vessels coming into their ports to make sure no drastic change or that repairs ordered by inspectors had been made. The Inspector of Hulls had a more straightforward and easier job than did the Inspector of Boilers. He checked the soundness of the hull and checked that safety equipment such as lifeboats and hoses existed onboard the vessel. The Inspector of Hulls could take further action and order more tests if they felt it necessary but their requirements were relatively simple. On the other hand, the Inspector of Boilers had many more codified duties, in line with the danger ever present in steamboat boilers.¹⁰⁵

The requirements for steamboat boilers in the Act of 1852 are incredibly technical with such as things as the spacing between flues regulated to the inch. One of the most important new requirements for boilers was the hydrostatic pressure test. The inspector would fill the boiler with water and pressurize that water using pumps to the proper pressure

¹⁰⁴ 32nd Congress, Session I, Ch. 106, Sec. 9, 18, 31, 33.
¹⁰⁵ 32nd Congress, Session I, Ch. 106, Sec. 9-1, 9-10.
rating of the boiler. If the boiler failed, a trickle of water escaped instead of a cloud of scalding steam. The inspectors tested if the safety valves in the boiler worked and if the water-gauge accurately reflected the amount of water in the boiler. Many other provisions exist as well, generally setting out the parameters for how a steamboat boiler must be built. The numerical focus of the Act of 1852 provides insight into the change that occurred in American thoughts toward regulation between 1838 and 1852. Steamboat inspectors in the Act of 1838 had only asked that steamboat boilers be safe, wary as they were of telling boiler manufacturers how to do their job. By 1852, the deaths of so many Americans had convinced Congress that regulating the boilers was necessary. That line of thought continued throughout the entire law. 106

Even if the boilers and hull of the steamboat became safer, the people operating the steamboat could prevent the operation from becoming safer. Therefore, the Act of 1852 included provisions for actively licensing both steamboat engineers and pilots. The licensing process for both followed the same path. Through study, apprenticeship or some other method, a man would become proficient in operating a steamboat or its boiler. The local board of inspectors, consisting of the Inspector of Hulls and the Inspector of Boilers, examined all their qualifications and if they found the applicant proficient, the applicant received a certificate to operate for one year. If they conducted themselves well for that year, they would be certified for another year. If at any point evidence of negligence came before the local board, the license could be revoked and the only recourse for the delicensed operator was going before the closest supervisory inspector. Again, Congress showed a new acceptance of meddling in the affairs of private business. Private businesses could no longer

106 32nd Congress, Session I, Ch. 106, Sec 9-2.
hire whoever they desired to run their steamboats, something Congress had been unwilling to regulate just years earlier.\textsuperscript{107}

The Act of 1852 enacted many fines and punishments and discussing all of them would be missing the forest for the trees. A small number should be examined to understand a change in the view towards accidents and other issues on the western waters. The government fined steamboats for operating without certified boilers, hulls, engineers, or pilots obviously, but some of the fines signaled a change in how boiler explosions occurred. For example, steamboat operators would be held liable for any damage that occurred if either their engineer or pilot expressed that either the boiler or conditions were unsafe. Previously, steamboat operators could be punished if neglect had been shown, but neglect was notoriously difficult to prove. Now, the word of one engineer or pilot, sworn to serve ably and truly at the risk of fines could make a captain liable for criminal charges. Another major class of fines revolved around fraud. As a part of this law, boiler plates were stamped to identify the thickness, strength, manufacturer and other important facts about its production. The penalties for falsifying the plates carried some of the heaviest punishments in the entire act, with either a fine of five hundred dollars or imprisonment for two years as punishment for this crime, as well as the user of the falsified plate given a fine of five hundred dollars. Compared to the Act of 1838, these fines at least attempted to offer consequences for disobeying its laws. While the fines set out in the Act of 1838 were for small amounts and could be easily avoided, these new fines carried weight. In yet another way, the Act of 1852

\textsuperscript{107} 32\textsuperscript{nd} Congress, Session I, Ch. 106, Sec. 9-8-9.
took a more active role in regulating steam travel rather than treating the industry with kid
gloves.\textsuperscript{108}

The final penalty of note relates to the unfortunate phenomenon of steamboats exploding near ports due to a lack of water in the boilers. Steamboats between 1838 and 1852 had often suffered from the interior of the boiler reaching extreme temperatures in port after all the water boiled off because the safety valve remained open due to regulation. As such, when the water rushed back in it immediately converted into an immense cloud of steam, blowing out the entire boiler. The Act of 1838 hoped to solve the issue of steam building up by regulating that the safety valves remained open in port. Steam build-up did cause explosions, but the solution put forth by the Act of 1838 created a mass of problems. This portion of the act totally encapsulates the failings Act of 1838 by failing even to fulfill its quite limited scope. The Act of 1838 either through lack of knowledge or intention completely failed to prevent steamboat explosions and encouraged them. In comparison, the Act of 1852 approached lack of water in the steamboat boilers by demanding that steamboat operators actively kept track of how much water remained in the boiler. Steamboat operators could not do the bare minimum to prevent boiler explosions as in the Act of 1838 and avoid consequences. The Act of 1852 included actual consequences to enforce actual punishments to create a safer river.\textsuperscript{109}

One major weakness of the Act of 1838 rested on its regulations regarding ferry-boats, tug-boats, and other smaller canal-traveling boats. Namely, the law specifically stated that those types of boats were not beholden to follow the laws set out for all other

\textsuperscript{108} 32\textsuperscript{nd} Congress, Session I, Ch. 106, Sec. 14-16. 28, 38.
\textsuperscript{109} 32\textsuperscript{nd} Congress, Session I, Ch. 106, Sec. 12.
steamboats. The reasoning behind the decision was eminently understandable. These vessels tended to be smaller and carry fewer passengers, if any at all. Therefore, both the destructive power and potential for as high death count were more limited. Even with that reasoning, limiting the law from regulating these smaller steamboats left a blindspot in the act as smaller steam vessels had exploded before and resulted in major loss of life.\textsuperscript{110}

The Act of 1852 represented an important step towards creating a comprehensive set of regulations to improve river safety. This improvement comes down to a few major factors. The first improvement is one of utmost simplicity. The Act of 1852 was a much larger bill than the Act of 1838. The Act of 1838 consisted of three pages and ten sections, while the Act of 1852 encompasses forty-four sections over fifteen pages. The latter act simply took the threat of steamboat explosions more seriously and therefore devoted considerably more space to it. Length was not the only change in construction between the two acts. The language of the earlier act can charitably be described as vague. The very open-ended 1838 law relies on the human element to act respectably with absolutely no supervision from higher power. Fourteen years later, the Act of 1852 uses its considerable length to draw out exactly what, when, and how steamboats should be inspected with very little initiative given to the various moving parts involved in the running of the operation. The Act of 1852’s attention to detail set it apart from the earlier act and gave it the ability to effect change on the Mississippi River and the rest of the American waterways.

The immediate impact of the Act of 1852 can be difficult to gauge. Common sense dictates that a law of such thoroughness would at least marginally decrease steamboat explosions and at the time Congress believed the new act was an unmitigated success. This

\footnote{\textsuperscript{110} 32\textsuperscript{nd} Congress, Session I, Ch. 106, Sec. 42.}
continued until historians decided to collate the data and determine the actual efficacy of the law. At first, the results seemed to deny the previous thought that the new legislation had reduced the ravages of steamboat explosions. From 1847-1851, 28 steamboats exploded and from 1853-1857 28 steamboats exploded. The country had more steamboats in service during the latter period, but only 70 more than in the earlier period. This seemed to indicate that the law caused almost no improvements in preventing steamboats from exploding. That might not have been strictly the case.

Almost all of the steamboats that exploded during 1853-1857 had one major factor in common: they had been built prior to the passage of the Act of 1852. While steamboats built prior to the act still had to be inspected, none of the new rules regarding steamboat construction were applied to these elder statesmen on the Mississippi. While of course the continuing death and destruction weighed heavily on the minds of Americans, the fact that steamboats built after the creation of these new regulations exploded considerably less than the previous fleet of steamboats reassured them that at least some progress had been made. An inspector even went on the record and stated that no steamboats had exploded that had been built after the passage of the new law. His statement seemed geared towards soothing the worried minds of the American people towards the continued prevalence of steamboat explosions and signaled a safe future for steam on the Mississippi. Unfortunately, yet again, that was not the case.

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111 Haites, Mak, and Walton. *Western River Transportation.*
113 32nd Congress, Session I, Ch. 106, Sec. 1.
During the period from 1858-1862, steamboats continued to explode, albeit at a slightly reduced rate. Fifteen steamboats exploded during this time period, with eleven of those steamboats built during or after the Act of 1852. Some positives can be taken away from these explosions. Fewer steamboats exploded during this period than the previous five years while the number of steamboats on the water continued to increase. Both absolutely and proportionally, the number of steamboat explosions decreased. Even so, much of the promise of the early years of the act had fallen flat. Americans had hoped for a river nearly free of the scourge of steamboat explosions and unfortunately the period from 1858-1862 dashed those hopes. Steamboat explosions once more plagued the Mississippi with little recourse seeming possible. Of course the preoccupation of the American people with other issues at the time meant that steamboat explosions would not be addressed until a decade later.  

While the Act of 1852 struggled in many aspects, it did a creditable job of reducing fatalities from boiler explosions due to some of its less well-known aspects. Requiring steamboats to carry a certain number of firehoses, lifeboats and other safety equipment allowed passengers to escape the burning ships, leading to more survivors. In at least this way, the length and relative comprehensiveness of the Act of 1852 did make an impact on the survivability of river travel even if the main body of the act failed to accomplish all of its goals.

The reasoning for the immediate failure of the Act of 1852 generally falls on two major factors. First, inspectors were not given the power to actively police steamboats and instead relied on other entities to enforce their decisions. The life of a steamboat captain and

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114 Haites, Mak, and Walton, *Western River Transportation.*
crew tended to be a rather transient lifestyle. Finding and forcing every steamboat captain operating without a license or operating with uncertified engineers took money and time that local boards of inspectors simply did not possess. As the country moved towards war, the government paid even less attention to steamboat explosions. Additionally, many steamboat captains argued that the technology simply did not exist at the level necessary to create safe steamboats. Despite all of the attempts of the government to introduce new laws and regulations the technology and operating techniques had not been created yet. While the Act of 1852 may have saved some lives and prevented some explosions, in the end the law made an insufficient impact.

However, the Act of 1852 had a considerable impact outside of its stated statutes.\textsuperscript{115} In two important ways, the Act of 1852 continues to impact the world today.\textsuperscript{116} First, the Act of 1852 set the groundwork for steamboat regulation that the government slowly implemented in the decades following its passage. Throughout the rest of the decade, the government added in more regulations to amend the act. Congress made six additions to the bill before they made full-scale changes to steamboat regulation in the United States. The first two acts passed by the government only made small changes to the law. The first tightened up the duties of the inspectors by removing some ambiguities from the original act. The second addition, passed in 1855, further regulated the number of passengers steamboats could carry and the required accommodation, such as lifeboats. After the passage of that law, no new laws involving steamboat regulation were passed until near the end of the Civil War. In 1864, Congress finally added a new addendum to the Act of 1852. In comparison to the

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\textsuperscript{115} Paskoff, \textit{Troubled Waters}. 20-22.
\textsuperscript{116} Hunter, \textit{Steamboats on the Western Rivers}.
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two previous addendums, this addition made significant changes to the act as it stood. The law added a new supervising inspector and added two new local boards of inspection. More significantly, Congress extended the law to apply to any tug-boat and canal-boat that carried passengers, beginning to close one of the more significant loopholes in the original act. The rest of the new additions added relatively minor provisions. An act later in 1864 added new safety requirements for passengers, similar to the addendum added in 1855. In 1865, two new assistant inspectors joined every local board and another local board was established. The final change before a more permanent change occurred in 1866, when Congress fixed the salary of local inspectors and added even more required accommodations for passengers. By 1871, the current framework of the Act had become too cumbersome to work within and Congress began to work on a new system of regulating steamboats.117

While some of the issues with the Act of 1852 could be fixed by additions to the act, other issues were too entrenched within the wording of the law to be fixed without major changes. While the steamboat inspectors worked under the Secretary of the Treasury, no member of the Treasury occupied the specific role of steamboat overseer. Therefore, if the supervising inspectors wanted something done, they needed to reach the ear of the Secretary of the Treasury himself, a difficult task. Again, by looking at the British system of steamboat regulation, the value of having a dedicated steamboat regulator presents itself. If a dedicated underling in the Department of Treasury had been able to actively lead the regulation efforts in America, the Act of 1852 might have continued to make an impact past its impressive

beginning. As it were, a new act needed to be passed in 1871 to effectively complete the legacy of the Act of 1852.\textsuperscript{118}

The totality of the creation of the Steamboat Inspection Service is outside of the purview of this thesis. In short, the Steamboat Inspection Service replaced many of the provisions of the Act of 1852 with tighter regulations and more government regulation. Most importantly, the Steamboat Inspection Service operated not directly under the Secretary of the Treasury, but instead operated under the Supervising Inspector-General, appointed by the President and the Senate, who held direct control over regulating steamboats across America. He could directly petition Congress for increased action on steamboat regulation. It is no surprise that for the thirty years after the creation of the Steamboat Inspection Service a new act improving the regulation of steamboats would be introduced and passed through Congress every few years. Thirty-five years after the passage of the Act of 1838, the regulation of steamboats had finally matured.\textsuperscript{119}

While the Act of 1838 had begun the trend of steamboat regulation, and the creation of the Steamboat Inspection Service in 1871 created a fully formed regulatory body, the Act of 1852 remains more important. Even though the act needed to be improved upon twenty years after its creation, it holds a special place in American history. The Act of 1852 exists as the first comprehensive attempt to create a fully formed regulatory bureaucracy in American history. Looking at the government today, a government operating without regulatory bureaucracy seems impossible. As the very first action taken by the United States government that might damage industry, they must have had a very good reason. Obviously,

\textsuperscript{118} Short, \textit{Steamboat Inspection Service}, 6-8.
\textsuperscript{119} Short, \textit{Steamboat Inspection Service}, 8-9.
moving on from the *laissez-faire* ideals that had dominated America until this time signals a massive shift in American history. What was so special about boiler explosions that America chose to break its ideals on regulatory action to prevent boiler explosions?

The prevailing theory on why boiler explosions became the issue that the government could not ignore emanates from where the support and opposition for steamboat regulation existed. Boiler explosions terrified average Americans as shown in the accounts published by firsthand observers. Many Americans travelled on steamboats occasionally for pleasure or to visit their family. The graphic descriptions in newspapers described in earlier chapters of the explosions of steamboats like that of the *Louisiana* and the *Sultana* terrified Americans. Boiler explosions came out of nowhere and common people had no idea how to prevent these explosions. From the relative prevalence of these explosions, it seemed apparent that neither did the very men who staffed these ships. With that in mind, there remained only one body that the American people could turn to or trust: the federal government. The only people that conceivably could have argued against preventing explosions and death were the steamboat operators and captains whose profits would be cut into by increased licensing fees and fines. Even then, records of steamboat captains or their ilk speaking out against the new laws seem not to exist. Claiming that for the good of the economy, innocent people needed to die in fiery wreckages was not politically expedient for either the Whigs or the Democrats, so both the Act of 1838 and the Act of 1852 enjoyed bipartisan support. Despite the unilateral support for these bills, the record shows that Congress did not support just any bill that made the American rivers safer, only those the public demanded.120

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According to historian Paul Paskoff, boiler explosions were actually not a major issue on American rivers. Explosions obviously grabbed the headlines and sold papers, but a considerably less eye-catching issue plaguing American rivers actually caused considerably more damage and death. The snags and other obstacles populating the river created considerably more destruction than did the explosions. Taking that as true, in a perfect world the government would have acted on clearing rivers rather than focusing on boiler explosions. Despite that, any attempts on the part of the federal government to clear rivers was met with opposition from one source or the other. The issue appeared to be that while boiler explosions struck fear into the hearts of men all across America, ships hitting snags and sinking seemed like a problem for those that lived along the river. Despite the likely usefulness of improving the rivers, the American people did not support that initiative. People did not understand the threat that snags and rough water presented. Everybody understood the danger of the explosions that appeared in their newspapers.  

The Act of 1852 reveals the character of the American people and its government in the years prior to Civil War. The Common Americans asserted their power by both refuting and confirming the ideals of Jacksonian American, claiming the power that Jacksonian thought empowered them with but pushing for legislation that is antithetical to the Jacksonian ideal. In the case of steamboat explosions, Americans wielded the power they held to push for security. The regulation of steamboat explosions marks an important point in American history where regulation of industry began. The importance of this event should not be overstated though. No intellectual change had occurred in the American people, instead fear began to seep through ever fiber of their being.

121 Paskoff, Troubled Waters, 189-199.
The regulation of steamboats did not come from some change in the American people. Their ideals did not change. Fear drove the regulation of boilers, not a new kind of political thought. Intellectual leaders did not lead this charge. Instead, newspapers fanned the flames and put the heat on the government to effect change. Rather than educated debate or circulated pamphlets, sensationalist articles describing severed limbs and poached people served as the intellectual text of this revolution. The government felt the will of the people and responded by appeasing the people rather than acting to protect business interests. In the grand scheme of things, boiler explosions did not merit the first comprehensive bureaucratic attempt to regulate the economy of a nation and only entered that rarified air because of fear. Boiler explosions did merit legislative action and do hold great importance as the standard-bearer for what would become an immensely important part of American politics. As a movement entirely predicated on a popular movement and their fear, the regulation of steamboats provides both a heartening and worrying glimpse into the future.
CONCLUSION

In many ways, the development of steamboat regulations in the United States blazed a path that other era-defining innovations followed. Steamboats burst on the scene in 1812, creating an almost entirely new industry from nothing. At first, steamboats operated with complete impunity on American rivers with no oversight except the operator’s morality and inscrutable market forces. As is common in unregulated industries, ranging from railroads to software, monopolies formed among steamboat companies early in the developmental life of steamboats. The federal government declared all such monopolies null and void ensuring open competition. Then, the industry developed without much input from any governmental sources until it grew large enough and began to show problems that the federal government could no longer ignore. The federal government began regulating steamboats, ending in the Act of 1838. Afterwards, it seemed inevitable that regulation would continue and grow more harsh. Eventually, steamboats operated under a fully-formed bureaucracy created by the Act of 1852 and other subsequent acts within the Department of the Treasury ending the cycle of regulation with a mature, logical conclusion. Very little about this timeline would arouse the interest of historians because nothing seems out of place. Regulation generally occurred in a very similar way and steamboats did not travel far enough from the blueprint to make a major
impact in that way. The story of steamboat regulation does not stand out in the fact that it happened, but instead stands out in terms of timing and popular involvement.

To put it simply, steamboat regulation followed the blueprint for regulation throughout the ages because it created the blueprint for regulation. The first occurrence of anything sets the tone for every other occurrence of the same phenomenon. Therefore, by studying the early history of steamboats, we can develop a greater understanding of American views towards regulation. It may not be a solely American phenomenon, but the history of steamboat regulation set the stage for almost all American regulation as reactionary regulation. For the first time, preemptory regulatory action became anathema to American lawmakers, something that has continued throughout the history of the country. Despite that, the eventual creation of this regulation signaled that the nation had progressed far enough from its *laissez-faire* roots and its recent Jacksonian inclinations to believe that regulation could benefit the nation. This inclination continued to grow, eventually leading to the current state of regulation. Other acts of regulation proved more influential and far-reaching in the long run. Steamboats’ reign as the largest avenue of trade in America would be short-lived. Much of the formative steamboat regulation proved ineffective and ignored. With all of that in mind, it was the very first attempt and for that it deserves a place in the annals of history.

Far before other disasters like the explosion of the *Maine* demonstrated the rallying power of a disaster, boiler explosions exemplified the public power of a massive explosion. Boiler explosions were far from the most important issue in antebellum America that could be addressed through regulation. Every other industry operated with essentially no federal oversight except for steamboats. Even within the steamboat industry, boiler explosions were
not the most pressing issue. Dredging rivers and improving ports could have saved many more lives and vessels than any regulation on steamboats. The sheer destructive power of a boiler explosion created its own relevance. A ship catching a snag and slowly sinking does not make for a very exciting newspaper article. A ship exploding sending viscera and shards of metal all over the riverbank cannot be easily ignored. Due to the sensational nature of boiler explosions, the entire nation became cognizant of their danger, while improving the rivers to create a safer environment remained a goal of the politically irrelevant Americans living and working along the great river. The sensational nature of boiler explosions led to legislation while other issues along the river needed to be addressed with even more urgency.

The Monroe Doctrine provides a rather interesting framework when examining America’s relationship with regulation. As is well known, the Monroe Doctrine states that America would resist any attempts by European nations to take power in North and South America and in return the United States would not meddle with European affairs already in place in Europe or the Americas. In a subtle way, that same idea applies towards antebellum America’s attitudes towards steamboats. Issues like river improvements meddled with the affairs of the country already in place. The country did not have the authority to take control over matters of that nature because they were not directly attacking the United States. The river simply existing as a river did not constitute an attack on the United States or an infringement of its rights despite the damage the river might cause to the country. On the other hand, boiler explosions could be construed as a direct attack on the American way of life. Every person, young or old, could be taken by these random acts of violence. Boiler explosions attacked the peace of mind that a person could travel down the Mississippi without fearing that they might not make the return trip. Under the rules that America had set
for itself in foreign policy under the Monroe Doctrine, an attack such as a boiler explosion warranted some type of retaliation. While angry citizens attacking shipyards and ports attempting to forcibly end the threat of boiler explosions conjures up intriguing images, the economic benefits of steamboats meant that was never a serious consideration. Instead, the only avenue of attack available to an America that followed the Monroe Doctrine was through legislation. In that way, these acts did not fundamentally change America’s views towards regulation because this instance of regulation could fit into America’s already existing conception of America. By applying the ideals of the Monroe Doctrine to rivers, a clearer understanding of the impact of this specific form of regulation can be realized.

The regulation of steamboats did not signal a sea change in America’s views towards regulation. While the regulation of steamboats signaled that America had become open to industrial regulation, it did not signal that America was now in favor in favor of regulation. After the passage of the Act of 1852, the floodgates did not open with every industry from canneries to mining beset by bewildering rules and regulations. The passage of laws regulating steamboats had not come from reasoned debate among intellectual equals. No treatises on the favorability of regulation had swayed the hearts and minds of the American voting public. Fear drove the adoption of the Act of 1838 and Act of 1852. Quite literally, Americans willingly gave up their liberty for safety from this danger. Every American felt that fear in their heart that the next time they traveled on a steamboat might be the time that boiler burst, sending steam and blood far into the air. That fear drove regulation. For that reason, the regulations on steamboats should be viewed with care. In military terms, the regulation of steamboats should not be viewed as the first sally into the capital city or the crash of a battering ram through the gates. Instead, it more easily equates to an outpost near
the border being captured or a scouting force running into trouble. A troubling sign, yes, and a portent of things to come. Small defeats eventually add up and can lead to the final decisive blow. By itself though, those small losses do not lose a war. In that same way, regulation based on fear does not signal the end of Americans fearing regulation. Even today, almost two hundred years after the passage of the Act of 1838, the country has not decided to what level different forms of industry should be regulated. Steamboat regulation opened the floodgates, but the flood was yet to come.
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ABSTRACT

BLOOD AND STEAM: BOILER EXPLOSIONS AND THE BEGINNING OF INDUSTRIAL REGULATION IN THE UNITED STATES, 1811-1871

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This paper examines steamboat explosions during the antebellum period of the United States. While the paper examines the causes of explosions and the mechanics of steamboats in some detail, the main focus of the paper revolves around public and governmental reaction towards these explosions. The paper begins with a discussion of the efforts at the state and local level to regulate steamboats, finishing with the considerably more comprehensive statutes of the Act of 1852. Through the examination of steamboats, a greater understanding of American views towards federal regulatory action during the antebellum period can be gained.
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