Infected by the culture of unfettered laissez-faire capitalism and emboldened by its discovery of actuarial method, the fire insurance industry pursued a market-oriented solution to the problem of fire in the last three decades of the nineteenth century. With a few notable exceptions, most companies paid little heed to preventive measures until late in the century. Indeed, as late as 1894, the leading industry trade association argued that it was “not the province of the insurance companies to regulate fires,” but rather that of ordinary citizens. The industry claimed that it recommended methods for preventing fire, but ultimately, insurers could “make our profit out of these conflagrations, for we can figure them up, and assess them to the public.” Gathering information and managing it properly became increasingly crucial to understanding how fire affected company risk portfolios. Toward this end, underwriters developed standard administrative procedures and forms, created classification systems to order risk, and used representational technologies, such as maps and statistics, to organize everyday practices. Through common routines the industry sought to develop a unified self-discipline that would produce economic security for firms and policyholders.¹

The industry argued that security from fire would increase only if it developed standard practices of inspecting and rating properties and then applied them in
an unvarying fashion. Such consistency would encourage the long-term process through which safety would be “burnt in” to the landscape, to borrow industry leader J. B. Bennett’s phrasing. As Bennett phrased it shortly after the Civil War, “experience prompts improvements everywhere, and substantial edifices of stone, brick, and metal, gradually replace the hastily and cheaply erected buildings of pine.” Bennett further argued that property owners would build safely and draw lessons from the “science of insurance” in order to reduce their expenses and exposure to danger. However, he noted emphatically that this would happen only if the insurance industry was united in its method of apprehending and rating fire risk—if, for instance, firms within the industry followed the unilateral policy of leveling large premiums on badly constructed property. According to industry leaders, then, setting high rates and maintaining them would diminish losses, raise profitability, and even encourage the spread of safe building practices. In addition, many firms advocated insuring less than the full value of property and goods, usually three-fourths of the total. Throughout the last decades of the nineteenth century, C. C. Hine, J. B. Bennett, and other experts warned against “overinsurance.” Although not new in the 1870s, this emphasis took on new significance because of the industry’s attitudes about safety. In short, underwriters believed that laying part of the financial responsibility for loss directly on the insured would provide property owners with additional incentives to prevent fires.²

Even as the industry eschewed direct responsibility for fire public safety, it remade itself by extending the business strategies developed by industry leaders in the 1850s. Between 1870 and 1900, the industry forged a common set of practices and management procedures by increasing the intensity, extensiveness, and depth of its surveillance of the danger of fire. Underwriters implemented more detailed administrative routines, used statistical principles to calculate insurance costs more accurately, commissioned ever more expansive and detailed maps of the built environment, and continued to create elaborate systems of classification to bind each of these technologies together. These dynamic activities—managerial, actuarial, representational, and classificatory—cannot be dissociated from the broader system of administrative technology being worked out within the fire insurance industry. Indeed, as underwriters took a risk, they used each of these technologies to objectify and analyze danger. Embedded in these knowledge-gathering technologies lay a set of interlocking safety standards, which thoroughly demystified fire risk. Information technologies had helped to make fire danger routine, and the fire insurance industry had begun to reimagine a safe city, at least from the vagaries of this one environmental hazard.

Equally important to fostering unity of purpose and procedure was the estab-
lishment of industrywide administrative associations. Formed by the industry's largest and most influential companies in 1866, the National Board of Fire Underwriters (NBFU) became the most important (though by no means only) such organization formed within the industry. Building on the development of standard business procedures, the NBFU specifically advocated setting rates derived from the statistical record of losses and hoped to standardize rates of premiums and expenses across the industry—both integral elements to improving the industry’s financial position. Although the NBFU never achieved its goals, and suffered through nearly two decades of retrenchment from the mid-1870s through early 1890s, it spawned a network of local and regional underwriting associations that would have a lasting impact on the industry. These organizations fostered a groundswell of cooperative activity among insurance firms, including collaborations on managing information. They filled the void left by the NBFU, and they generated intimate connections between the insurance companies and local environments. Eventually, the interrelationships fostered by the local societies would reinvigorate the National Board of Fire Underwriters. Building on the extraordinary familiarity that the industry had developed with fire danger and its relationship to the built environment, the NBFU would even begin to experiment with fire preventive measures in the 1890s, even as it stated publicly that fire insurers had no responsibility for public fire safety.³

The National Board of Fire Underwriters

When in 1866 over one hundred fire insurance companies organized the NBFU in order to pursue a “common interest,” the new organization did not explicitly identify a single overarching organizing principle, though its program nonetheless contained a coherent logic that defined the mainstream fire insurance industry’s goals for over thirty years. The NBFU most pointedly expressed concern that insurers did not manage information very well, whether it was in reference to business costs, losses, or income, and its statement of purpose focused on developing standard daily practices that would allow it to improve profitability. At its first annual meeting, the NBFU described its mission explicitly in terms of establishing and maintaining “uniform rates,” establishing “uniform compensation” for agents, repressing arson, and devising a means to increase cooperation between individual firms.

Each element of the NBFU’s agenda supported a common principle revolving around understanding how fire affected the loss portfolios and financial ledgers of companies in the industry. For instance, creating standard commissions lowered
administrative expenses and made them predictable across the industry, helping companies to manage their costs more effectively. Likewise, setting common rates would increase premium income, or at the least make it more predictable. Finally, more effectively prosecuting arson promised to reduce losses across the industry. Taken together, then, the NBFU’s advocacy of these three points was about setting in motion a strategy that was primarily about reducing and/or controlling expenses, increasing and/or regularizing income, and reducing losses.4

When the NBFU advocated creating “uniform rates” it hoped to establish an actuarial record of fire loss that would serve as a guide to the industry and that would generate a set of common practices across the industry. The industry did not—at least initially—seek to create uniform rates simply to improve profitability, although the benefits of standard rates were obvious. The NBFU wanted to create common rates in a systematic fashion that offered an objective portrait of fire danger; it wanted to establish and oversee an industrywide “mortality table,” which it believed could become the basis for the development of rational and scientific principles to guide the industry, eradicating intercompany differences and local particularities.5

Creating a master actuarial table demanded extensive industrywide cooperation in gathering the requisite information. Toward this end, the NBFU developed a partnership with local boards of fire underwriters (and encouraged the formation of such boards). Local insurance boards served the industry in seemingly mundane ways; for instance, they assigned committees to keep statistics, to classify risks, to conduct surveys, and to adjust losses. At the same time, the NBFU hoped to utilize the actuarial data gathered by large insurers, which had begun to use statistical methods into their daily operations with greater intensity. Using standard administrative routines, following a national fire-mortality table, and heeding information received from local underwriting boards increased the likelihood that insurance companies would arrive at similar conclusions about a fire risk. That is, these practices would provide underwriters with a unified front in the battle against fire. The NBFU and its members imagined an insurance business predicated on statistically self-evident rules. Not only would differences within the industry disappear, but also business practices predicated in the certainty of statistical science would make the problems of fire insurance vanish.6

The strategy of setting common rates especially benefited the large nationally oriented companies that dominated the NBFU. Indeed, as much as rates of insurance reflected company losses, they also reflected a firm’s expenses, and the nation’s largest firms had a network of agents and a (relatively) large bureaucracy, which increased those costs. For instance, companies such as Aetna needed to set
premiums at a level high enough to both pay losses and cover the expenses of their exceptionally large network of agents. As a result, the initiative to establish standard rates worked to the advantage of large insurers, especially if the rates were fixed at a relatively high level, because it eliminated price competition, which worked to the benefit of small, usually local companies with low overhead. Likewise the program of setting standard commissions for agents was designed to regularize and reduce administrative costs, thereby improving the market position of large national insurers. Generally speaking, two major tenets of the NBFU’s agenda—setting uniform rates and commissions—worked against the interests of small local and mutual insurance companies, which operated without the large staff overhead of national insurers.

Through the last years of the nineteenth century vast industrywide differences thwarted the NBFU’s program to create uniform rates. Some companies organized themselves along the principle of mutuality; others raised capital by offering stock. Some competed for business primarily in local or regional markets; others hired vast numbers of agents to prosecute their interests in faraway locations. Though there are many exceptions, for the purposes of this study company organization can be divided into two basic types: mutual and stock. Mutual insurance companies typically served particular geographic communities or regions but sometimes attended to communities of similar economic interests, such as textile mills. For the most part, these companies employed few agents, and company officers solicited business and inspected risks themselves. Less bureaucratically complex than many stock companies, mutual companies also functioned on a different principle. Unlike stock companies, mutuals returned dividends to the insured (less administrative costs and losses) rather than to stockholders. Over time, mutual insurers gradually expanded beyond local boundaries and adopted practices more characteristic of stock companies, but this did not occur until well into the twentieth century.7

Another distinction typically made within the industry was the organization of a company’s business—local, regional, or national. When the NBFU spoke of a common interest it referred to a relatively select group of large companies “doing an agency business.” The term agency business designates companies that required the services of business agents located in distant places to solicit new business, inspect risks, write policies, and adjust losses. Companies that did business across a broad geographic area typically hired agents to serve as intermediaries between the underwriting company and the insured. As a result, the NBFU represented especially the financially secure, well-capitalized firms doing business nationwide, often headquartered in places like Hartford, New York City, and Philadelphia. By contrast, local companies had a more direct relationship with the insured and of-
ten dealt directly with their clients. Among other things, these different relationships produced different cost structures. Agency companies relied on an extensive, expensive bureaucracy to conduct business; they compensated brokers or agents from 10 to 20 percent of the premiums they collected. Local firms avoided this expense by doing inspections and policy writing themselves. Of course, agency companies and local firms disagreed vehemently on which mode of organizing was superior. For example, many smaller insurers criticized larger, so-called agency companies for gouging consumers. In addition, these regionally focused firms often accused big, national concerns with removing capital from their local economies—usually represented in terms of money moving from southern and western towns to eastern metropolises. In response, executives of those large organizations, such as Aetna’s J. B. Bennett, argued that nearly all the capital spent on premiums within any given city was returned to that community through payment of losses, taxes, and commissions to agents. Bennett further argued that the extensive portfolios of larger firms distributed fire risk across the national economy, thus affording greater protection to customers. J. B. Bennett described this benefit by noting that “no experience can be cited to warrant the expectation that five hundred [separate risks] will burn at once.” Bennett further claimed that well-capitalized companies were more cautious because “capital, by its very nature, is conservative, and holds to the more sure and the safer modes of business.” Lastly, he argued that if managing large volumes of business “required a higher order of experience,” it also meant that large firms suffered many losses. According to Bennett, the resulting glut of data made insurers with major firms more knowledgeable about the problem of fire. Thus substantial portfolios of geographically dispersed risks actually buttressed good practice, which, according to Bennett, “was governed according to certain laws of average, only obtainable from a broad and varied experience.”

Despite the clear advantages of such an approach, the fire insurance industry remained a risky investment in the final decades of the nineteenth century, which reveals the industry’s deep divisions and speaks to the difficulties of enacting what was sometimes termed “scientific underwriting” in a competitive market economy. The NBFU’s ongoing struggle exemplifies the waves of success and failure that the industry faced following the Civil War. Immediately after its formation, the board experienced explosive growth and modest success in its attempts to enforce a rating discipline. Over 135 underwriters drawn from 99 companies and 32 agencies attended the NBFU’s 1867 meeting, and the executive committee reported that it had organized “over two hundred local boards with rates more or less advanced, and uniform in character.” Within three years, the NBFU had established an ex-
tensive administrative apparatus for the express purpose of advocating its “basis rates” and enforcing them among agents and companies. By 1869, it had formed a Rating Bureau, divided the nation into six departments staffed by paid employees, and enlisted the support of 475 new boards. In Chicago, thirty-seven companies formed the Chicago Compact and pledged to remove local agents if they violated the NBFU’s rates a second time.10

The organization’s mandate, though, was short lived, and it declined in the 1870s as rapidly as it had grown. In particular, the board’s authority to raise and standardize rates lasted for a very short time, and in 1869 it disappeared abruptly in a flurry of rate cutting. Even those companies that had signed the Chicago Compact evaded its provisions. Forming a “Special Committee on Reorganization” in an attempt to maintain its authority, the NBFU reported “bad faith among those who have been understood to consent to the legislation of the board,” and proposed a solemn oath be signed by all members—“The Articles of Association and Obligation.” Although a few companies signed the articles, most did not. By 1870, the NBFU acknowledged defeat when it allowed members and local boards to “modify, suspend, or declare advisory any or all rates fixed by them.”11

Just as quickly as the NBFU had lost rate-making authority, it regained it in the wake of the disastrous Chicago and Boston conflagrations of 1871 and 1872. The story of the massive destruction wrought by those fires is well known. After the Chicago fire, more than one hundred fire insurance companies went belly-up; similar consequences followed the Boston blaze, and even the largest insurance companies did not escape unscathed. The Insurance Company of North America paid nearly $1 million in losses to Boston policyholders. The losses shook the fire insurance industry. One company official worried that “one more such conflagration will strip this country of every fire-insurance company.” The NBFU, whose membership was galvanized by the conflagrations, raised rates in small towns (population less than 50,000) by 30 percent and those in large cities by as much as 50 percent. Its plan worked. In 1873, according to the memories of prominent St. Louis underwriters James Waterworth, rates throughout the nation had increased by 25 to 50 percent.12

For several years following the disastrous fires, the NBFU held broad cultural authority, as firms that survived the conflagrations joined the organization in droves. By 1874, the board represented 90 percent of the nation’s insurance premiums and 95 percent of the nation’s total insurance capital. Representing such an enormous amount of the industry’s capital provided the organization with enormous political and social leverage, which was heightened by popular concern about the potential devastation of future conflagrations. The NBFU enacted its extraor-
dinary power through the office of a newly appointed general agent, Thomas Montgomery, who enforced the board’s edicts with great vigor. During 1875, for instance, Montgomery and his supervising agents held 29 trials, convicted 120 local agents for violating NBFU rates, and collected nearly $6,000 in fines. Shortly after the St. Louis Board of Fire Underwriters (STLBFU) formed, Montgomery demanded that that organization adhere to the national organization’s rating schedule. The St. Louis board complied immediately. The NBFU’s history reported that in the 1870s “the National Board constituted a virtual business monopoly” and was perhaps “the first great American trust.”

The NBFU used its renewed power to demand better methods of construction and seemed on the verge of becoming a powerful advocate of public safety. In fact at the organization’s 1873 annual meeting Henry Oakley, the board’s president, spoke of the need to “shape legislation which would benefit our own interests . . . by securing such wise and salutary laws as might prevent the recurrence of other destructive conflagrations.” In conjunction with local underwriting boards the NBFU showed intense interest in how factors such as fire defense, water systems, and urban design affected the problem of fire. In 1872, for instance, the organization published a rate sheet that recommended lower rates for towns with water supply systems, and by the 1880s, making such distinctions had become commonplace. In 1888, the American Water Works Association, which monitored rate differentials in fire insurance, reported that towns with waterworks experienced rate reductions of between 20 and 50 percent. Nonetheless, the NBFU and the insurance industry applied little direct pressure on cities to develop or modernize their water systems. As much and probably more pressure came from a variety of other sources. For instance, the growing American public health movement and engineering professionals were among the most vocal proponents of improving water systems. The American Public Health Association, formed in 1872, and the American Water Works Association were especially forceful proponents of the expansion of city water systems. Between 1870 and 1890 the number of waterworks more than tripled, and by 1890 over 70 percent of American cities had waterworks. Similarly, insurers showed brief but intense interest in improving construction practices in the wake of the Chicago and Boston fires. In fact, the NBFU argued that Chicago and Boston were being rebuilt improperly and demanded that those cities rebuild according to stricter rules. Even though both municipal governments succumbed to NBFU pressure by mandating stricter construction standards, those codes were rarely enforced.

Once again, however, the NBFU’s authority was short-lived. Lack of industry consensus and consumer displeasure with high rates challenged the hegemony of
the national organization. One local board, the New England Provisional Committee, recorded this dissatisfaction when it told the NBFU that it had received over four thousand applications for revisions in rates and new ratings. Competing on rates once again became a familiar strategy of agents and companies seeking business. According to one observer, by 1875 over one hundred new “rate-cutting” companies formed. NBFU members were not exempt from the changing business climate; twenty of its members resigned, eighteen were dropped, and two were expelled. According to the NBFU’s historian, the “fire insurance autocracy” had met its death. In 1877, the Phoenix Insurance Company’s D. W. C. Skilton identified the cause of the decline: “It is plainly evident that the future success of the National Board of Fire Underwriters depends wholly on a full and firm confidence among the members in each other, . . . it being granted that it is now practically lost.” In the wake of this loss of legitimacy, the NBFU appointed a committee on retrenchment to examine the future. The committee advised abandoning rate-setting functions—a measure approved by a vote of thirty-one to nine. The committee further recommended reducing the budget from $113,000 to $15,000. In the wake of the budget cuts, the NBFU declined precipitously. By 1888, only twenty-five members remained; eight companies attended the annual meeting.15

Ironically, the NBFU’s sagging fortunes came in part because its goal of creating uniform rates was out of touch with underwriters’ and their agent’s growing knowledge of fire danger. Insurers’ daily encounters with fire suggested to them that the problem might be more complex. Those underwriters who had field experience or worked daily in assessing risks especially became sensitive to the ways in which their particular locales may have been exceptional. According to many local underwriting officials, uniform rates—or “flat rates” as critics derided them—treated the landscape with a simplicity that was being outpaced by the problem of fire, as well as the industry’s increasing understanding of it. Almost two decades after firms had begun to use statistics in evaluating risk and had expanded their programs of methodical observation, insurers continued primarily to emphasize internal dangers when setting rates, although they realized that fire risk contained an external, environmental component. That is, underwriters realized that fires and losses did not occur, or mount, simply because of how a property was used or because of its poor construction. However, the NBFU’s program of uniform rating relied almost exclusively on such a determination of this intrinsic risk. In addition, this program implied that hazards did not vary, even in different places, and were not modified by environmental conditions. Although the NBFU’s proposals were not so inflexible as critics argued, they nonetheless were out of step with an industry that viewed fire danger through an increasingly complex lens.16
Charles Hexamer, *Fire Insurance Map of Philadelphia*, volume 1, key, 1872. Fire insurance surveys helped underwriters to better comprehend the hazards of fire in distant cities; they represented danger using the categories that underwriters commonly used to distinguish between risks. Maps especially emphasized how a property was used and its basic method of construction, as suggested by the key from this 1870s Hexamer atlas of Philadelphia. Courtesy, Geography and Map Division, Library of Congress.
The shortcomings in the NBFU’s approach were especially evident in its disagreements with local underwriting associations about the program of uniform rates. Flat rates, according to detractors, were out of step with the everyday practices of local agents and community leaders. In particular, insurance consumers and underwriters with extensive experience in particular locales (especially representatives of small geographically centered firms) chafed at the lack of discernment shown by the NBFU. For instance, according to the St. Louis Board of Fire Underwriter’s president, James Waterworth, customers and underwriters in his city had never been “satisfied with the flat rate system, knowing it to be discriminatory and indefensible.” The historian of Philadelphia’s insurance industry, J. A. Fowler, echoed this sentiment. He argued that the system of flat rates ran contrary to scientific rationality. That is, it “was in subordination to the rule that each locality should be rated primarily in accordance with its own fire experience.” Although one might be able to predict how often stone warehouses burned throughout the nation, underwriters like Waterworth and Fowler argued that such tabulations could not be translated into a rate which made sense in different urban environments. In St. Louis such warehouses might burn infrequently, whereas in Spokane they often caught fire. As a result, the rates on stone warehouses in St. Louis and Spokane did not reflect adequately the differences in their likelihood to burn, which depended on local peculiarities.17

Local underwriting boards’ familiarity with their cities provided the basis for their disagreement with flat rates. For example, the St. Louis Board of Fire Underwriters actually sought to develop accurate local rates and actuarial tables, even during the periods in which it supported the higher, flat rates advocated by the NBFU. Shortly after it was established in 1872, the St. Louis board requested that one of its members, Western Bascome, prepare a plan for rating the city’s fire risks. Bascome, who had surveyed, printed, and distributed the city’s first fire insurance map in 1857, was, according to St. Louis insurance historian James Waterworth, “full of the idea of rating by schedule[,] he had in fact been laboring on it privately for some years.” Within four months, Bascome and a rating committee presented the STLBFU with its schedule of rates, together with principles of operation, illustrated with examples. The board adopted its own “St. Louis Schedule” and requested the NBFU’s financial support to do additional surveys to make the city’s rating schedule more accurate. Although the NBFU provided the resources necessary to fund a surveyor, it advised the STLBFU to adopt the NBFU’s “basis schedule.” The St. Louis board officially abandoned its own rating schedule, but it “silently and continuously” continued the project by appointing C. T. Aubin, a prominent local insurance surveyor and civil engineer, to develop an accurate
schedule. Somewhat paradoxically, the influence of the NBFU waned in direct relation to underwriters’ growing knowledge about the complexity of the problem of fire. As underwriters learned more about the particular components of the fire problem, the uniformity of approach sought by the NBFU began to seem misguided, if not impossible. Ironically, the NBFU’s recommendations for standard procedures in inspections, mapping, keeping statistics, and common forms had empowered local underwriting associations and diminished the relevance of the national organization.18

Daily Routines, Bureaucratic Standards, and Manliness

As insurers sought to remake their industry by developing standard business practices, prescriptions for behavior also spread throughout the industry. In the last decades of the century, the prescription for achievement showed striking similarity to notions of manliness developing among workers in life insurance and other financial industries. In these areas, according to historian Angel Kwolek-Folland, manliness “could be expressed through rational application of mechanical business laws of profit and loss.” This ideal of what it meant to be a man combined with common practices and business activities to bind company executives, agents, and other industry specialists into a coherent whole, and to foster the creation of a new economic calculus.19

The “visible hands” that shaped the new division of labor within the fire insurance industry drew predominantly from Aetna. One the industry’s pioneering firms, Aetna employed hundreds of representatives throughout the nation and led the effort to establish standard procedures within the industry. J. B. Bennett, who served as general agent for Aetna in the western United States from 1853 through 1870, rewrote the company’s booklet that instructed agents on company procedures. In 1857, his Guide to Fire Insurance replaced preceding instruction books. Eventually known as the “Aetna Bible,” the guide was a landmark accomplishment in advocating for the company’s interests and training its agents. Like Bennett, influential publisher C. C. Hine worked for Aetna during the 1850s, serving as special agent between 1858 and 1865. His experiences provided him a wide opportunity to survey and define Aetna’s practices across a wide region. During the same period, Daniel Sanborn, a pioneer in the insurance mapping industry, began his career surveying manuscript maps for Aetna. Well before such maps became standard, Sanborn helped Aetna to develop graphical representations of risk that would be useful in daily practice.20

The fire insurance industry’s largest companies advocated the development of
common administrative and underwriting routines. Internal procedural manuals like the “Aetna Bible” became less common as industry leaders published manuals of practice that were disseminated to a wider audience. Developed in the 1850s, national business periodicals such as the Insurance Monitor and the Weekly Underwriter, expanded their readership dramatically following the Civil War. By the 1870s, these publications became important proponents of standard procedures and began to propagate the ideal of good practice based in information gathering and in prudent and statistical evaluation of fire danger—in short, according to the principles of “science.” These publications especially encouraged companies—no matter their type or size—to adopt standard routines that involved a number of explicit procedural steps and which relied upon a bevy of administrative documents. In 1865, C. C. Hine collected eighty-six example forms in a book, Fire Insurance, Policy Forms, and Policy Writing. By 1870, Hine had collected 139 forms, and his 1882 edition contained 328 forms. The decades following the Civil War saw the number of policy forms increase tremendously, mirroring a similar explosion in management information and the use of bureaucratic technologies in the broader economy.21

Hine played an especially significant role in formalizing daily routines throughout the industry. Publisher of the influential periodical the Insurance Monitor, he spoke definitively on the subject of practice. Continuously republished for twenty years, Hine’s procedural guide—Fire Insurance: A Book of Instructions for the Use of the Agents of the United States—was adopted by many firms, including the Insurance Company of North America. The degree to which these firms followed Hine’s suggestions is unclear, but the guidelines he established 1870 remained essentially unchanged in subsequent nineteenth-century industry literature. Another guide, Francis Cruger Moore’s Fires: Their Causes, Prevention, and Extinction; Combining Also a Guide to Agents Respecting Insurance against Loss by Fire, originally published in 1877, varied little until 1903, when Moore changed the title to Fire Insurance and How to Build: Combining Also a Guide to Insurance Agents Respecting Fire Prevention and Extinction, Special Features of Manufacturing Risks, Writing of Policies, Adjustment of Losses. The title notwithstanding, Moore recommended only slightly different administrative procedures than had Hine. At the very least, industry experts and the insurance press had formulated and widely promulgated a clear and unvarying set of principles for daily practice. The continuity between Hine’s and Moore’s volumes and their wide publication also suggest that bureaucratic routines gained increasing use and regularity during the last decades of the century.22

In his “working handbook,” Hine divided standard practice on insuring “ordinary hazards” into six steps, which are almost self-explanatory: Ask whether the
risk was desirable or not by taking a “survey”; take an application and write the policy in the agency “record book”; write the policy; return the “daily report” that same day to the agency; collect the premium and deliver the policy to the insured. These administrative tools—daily reports, record books, and monthly returns—possessed all the particulars about the business transaction, including the amount and specifics of insurance polices. They were especially critical, because in the taking of “ordinary risks,” the policy forms were not returned to the insurance firm’s headquarters. Rather, daily reports provided the home office with all the information that it would ever know about a risk. Not surprisingly, then, instruction manuals emphasized careful record keeping on the part of representatives, instructing them to keep a record for themselves in the agency record book, to return daily and monthly reports promptly, and to fill out the proper forms with careful attention to detail. Underwriting “special hazards” involved a few separate steps that required a higher level of surveillance. Rather than simply taking an application and surveying, Hine urged agents to be especially thorough; they should, he wrote, “take an application on the proper blank, full and complete, Diagram included, and send it to headquarters, with your view of the risk.” He reasoned that those companies willing to underwrite such properties—which usually involved significant financial exposure—were willing to lose the business rather than take an imprudent risk. If the “home office” accepted the risk, then Hine allowed the agent to write the policy.\(^2^3\)

The proliferation of standard routines and bureaucratic forms corresponded to the expansion of the industry, with its increasingly specialized division of labor. Indeed, following the Civil War, and certainly by the 1880s, the job title underwriter or insurer could no longer accurately reflect the increasingly complex organization of labor in the fire insurance industry. As early as the 1850s, Aetna had organized its management activities in a manner that prefigured the organization of the fire insurance industry later in the century. Just prior to the Civil War, Aetna employed over five hundred agents, many of whom also may have represented other firms. Few agents worked full time, but all labored under the direction of a management team that numbered fewer than ten men. However, by 1900, Aetna’s practices no longer were unique, as firms in both the fire insurance and the life insurance industries commonly employed field representatives to sell insurance. Although it is difficult to determine precisely how many firms used agents, they played a key role in the expansion of both industries. This shift is evidenced by the flourishing number of publications that explicitly spoke to an audience of agents and company managers and by the advent of professional associations for insurance agents beginning in the 1890s. In addition, the United States Census first identified “insur-
ance agents and brokers” as an occupational category in 1890, when it showed 8,554 people employed primarily as insurance agents; in a separate category, there were 1,467 “insurance company officials.” By 1900, the number of people who listed their occupation as insurance agents and brokers had grown to nearly 120,000, and the number of insurance company officials had increased to over 5,000. In 1910 there were over 88,000 fire insurance agents licensed to do business in the United States, and by the 1930s, there were over 250,000 property insurance agents throughout the country. As the number of full-time agents grew, part-time agents continued to play an important role.24

The competing agendas of field representatives and company managers threatened to throw the industry into chaos, but those different interests were contained by a common work culture. Although the two groups debated commissions and other issues, both came to depend upon one another in a team effort; as manuals observed, “The interests of the agent and the company are identical.” Their interests converged because of their economic ties and common ideals of proper male behavior in the business world. If this shared financial fate helped insurers of all stripes to negotiate the tricky world of Gilded Age capitalism, instruction from industry publications provided workers with plenty of specific guidance about how to behave properly.25

As the industry prescribed good practice, the expression moral hazard gained every wider currency, and evaluating the character of risk—specifically the men involved in the business transaction—became both more explicit and more central to industry practice. At its most basic, moral hazard remained a catch-all for the process of evaluating a relatively ambiguous component of fire danger—the reputations of customers and agents. Nonetheless, the term became more precisely defined and specifically linked to quantifiable aspects of the underwriting activity. Most noticeably, perhaps, insurers began to minimize this cultural risk through a simple economic calculation. According to insurance expert Francis Cruger Moore, moral hazards occurred when the amount of insurance on a property exceeded its economic value. This financial disjunction—easily measured and determined—provided consumers an incentive to burn their own property or to avoid practicing fire safety. To remedy this problem, the industry pushed aggressively a financial, quantitative solution, the “three-fourths clause,” which stated that only three quarters of the value of the property was covered. By deliberately underinsuring customers, the industry removed temptation for a quick profit and encouraged them to be responsible and disciplined in their home and business affairs, especially as it regarded fire safety. Of course, the danger of “overinsurance” had been discussed for many years, but it took on renewed vigor as the industry at-
tached it to moral hazard and its broader programmatic initiatives. More signifi-
cantly, by defining moral hazard using language of quantifiable economic ratio-
nality, the industry was able to link its efforts to minimize both the cultural and
physical component of risk, thereby making its strategies for dealing with the prob-
lem of fire more systematic.\textsuperscript{26}

Accompanying the objectification of cultural aspects of risk—the moral haz-
ard—was an increased emphasis on gathering information and using rational, eco-
nomic decision-making processes. The industry’s emphasis and daily use of a sys-
tematic method for gathering and evaluating knowledge was the foundation for
calculating the manhood of underwriters, agents, and their customers. Managing
information was vital. As Francis Cruger Moore urged, “That he may properly dis-
tinguish between safe and unsafe risks . . . it must be evident that the information
of an underwriter should be varied and extensive. . . . There is probably no calling
requiring so intimate a knowledge of every other as this.” In a world in which so-
liciting new business was seen as the only way for the industry to expand, “know-
ing” one’s business—the built environment, customers, and the company’s poli-
cies—proved indispensable. Urged to cultivate new business aggressively and with
 persistence, agents were instructed to persuade potential clients with substantive
knowledge about fire risk and the economic benefits of insurance. To the degree
that intelligence, effort, and assertiveness were key to an agent’s success, it was “the
duty of the agent to qualify himself, by close observation and study.” Without the
ability to make “clear and logical argument” and use “apt examples,” agents could
not sell insurance policies effectively. Command of information allowed under-
writers to balance aggression with risk aversion, individual interest with corporate
needs, and intellectual dexterity with rule-based behavior.\textsuperscript{27}

As underwriters systematized daily work routines, they contributed to a broader
redefinition of middle-class manhood, which became focused increasingly upon
economic matters—financial success, market rationality, and business acumen. A
number of factors contributed to this broader reorientation: the intense develop-
ment of managerial capitalism, the rise of scientific management theory, the in-
creasing use of bureaucratic technologies in American workplaces, and the dra-
matic expansion of white-collar work more broadly. At the same time, however,
the unrestrained drive for profit that characterized laissez-faire capitalism compli-
cated the lives of middle-class men everywhere, including the men who labored in
the fire insurance industry. Try as they might to follow their industry’s standard
practices or to adhere to rhetoric about unity and rationality, fire underwriters
found themselves competing to earn a living, to support their families, and to
achieve wealth. This countervailing tendency found expression in frequent bank-
ruptcies among firms in the industry. In the three decades before 1900, over eight hundred companies failed. Frequently, fire underwriters—agents and company leaders alike—were not the paragons of virtuous rationality that industry manuals demanded.28 Nonetheless, the industry’s emphasis on economic rationality and risk-averse behavior indicates a change in how middle-class insurers perceived their work. Standard practices and cultural ideals harnessed the manhood of middle-class, white-collar underwriters to an increasingly rationalized and bureaucratic society. Moreover, standardizing work routines heralded the development of new attitudes about safety. Fire underwriters created a vast bureaucracy designed to observe themselves, their customers, and the landscape. These observations tied underwriters’ battle against the problem of fire to behaviors driven by an economic calculus. This surveillance offered the insurance industry the possibility of using quantitative financial factors to discipline itself, its representatives, customers, and even the built landscape. Acting according to a cold economic rationale would increasingly become the basis for dealing with danger and safety.29

Mapping the Landscape

Of the many technologies used by insurers in their everyday practice, fire insurance diagrams may have had the most profound impact on the industry. During the nineteenth century, fire insurance maps became an important way that the fire insurance industry disciplined itself and the urban landscape, and they also represented one of the many ways that industry practices became more standard. More significantly, the expansion of specialized mapping agencies, the growing level of detail in the maps, and their increasing uniformity helped to objectify danger. That is, they transformed danger from something physical into an abstraction that could be quantified and then sold. Maps also fostered the development of unity within the industry by providing a common visual language of risk, serving as an important and common point of communication between insurance companies and their field representatives.

Such atlases further underscored and increased the effectiveness of each of the industry’s other strategies to standardize underwriting practices. They placed the insurance policy and daily report within a clearly delineated and carefully drawn spatial context. In fact, insurance atlases were so commonly used in the industry by the late nineteenth century that industry experts, such as C. C. Hine and Francis Cruger Moore, instructed their readers on how to “read” maps and even taught them how to draw their own diagrams of risk. As these specialized firms
actively enumerated, accumulated, and quantified the incidence and causes of fire, they fed the insurance industry’s insatiable appetite for information. And, over time, much of the underwriting community’s capacity to evaluate danger grew from the dogged thoroughness of mapping agencies. More importantly, they encouraged dynamic interplay between the built environment, statistical records of loss, and classification schemes. As much as the industry continued to struggle with questions about how statistical knowledge and categories of risk should affect rates, fire insurance maps represented safety and danger in a manner that was intertwined with actuarial charts.  

Mapmakers’ categories for assessing fire risk expanded during the last five decades of the nineteenth century as the fire insurance industry developed a better understanding of fire risk. Map keys grew from one page to two pages as underwriters became more involved in specifying this increasingly minute surveillance of the urban landscape. Such representations became more detailed according to the special conditions that underwriters believed shaped the incidence of fire. Maps listed the width, depth, and height of buildings as well as skylights, boilers, and roof construction. Later maps, those published after 1870, would include information on street length and width, wall construction, fireproof construction, breaks between buildings, shutters, thickness of walls, and other architectural details. Finally, most maps diagrammed the relevant fire extinction infrastructure of the city, such as fire hydrants, water mains (and their size), and alarm boxes. The growing sophistication of insurance maps occurred as a result of a dynamic process between surveyors and underwriters—an ongoing give-and-take about the problem of fire.  

The business records of a fire insurance surveying company—St. Louis’s Whipple Insurance Protective Agency—reveal that fire insurance maps served a purpose beyond mere representation. Insurance mapping companies placed cities under constant and comprehensive observation. Through a program of inspections, mapmakers helped to police compliance with the insurance industry’s standard practices and made insurance contracts strictly enforceable. Perhaps unique among mapping companies, Whipple published a widely distributed newsletter that takes us inside the extensive surveillance provided by insurance mapping companies. Begun in 1875, Whipple’s Daily Fire Reporter offers an astounding comment on the intensity and scope of the insurance industry’s surveillance of fire risk in the urban landscape. Whipple sold subscriptions of its Daily Fire Reporter to customers that included local firms, national insurance companies, agents, owners of commercial and industrial property within the city, and the local municipal government. Through
the newsletter, Whipple performed many services for its subscribers. First, the company inspected and reinspected property (typically in the business district or along the city’s wharves). When property owners failed to adhere to practices commonly associated with fire safety, their names, locations, and variances were published. Second, Whipple also collected, and daily disseminated, information about the origins, causes, and responses to all fires and false alarms in the city. At the end of each year, the *Daily Fire Reporter* listed the aggregate statistics and often compared them to events in previous years. Finally, subscribers were also apprised of the opportunity to purchase Whipple’s other services. For instance, Whipple could also be commissioned to survey individual commercial or industrial properties and produce an extensive report of fire risk at that location.

The single most important aspect of Whipple’s business was its frequent inspections of property in the city. The program of inspection served the practical purpose of keeping maps updated but had more far-reaching implications as well. Inspections constituted a surveillance of property owners, which coerced them into behaving according to the insurance industry’s standard of conduct regarding the risk of fire. In 1882, for instance, Whipple performed 20,632 “inspections and re-inspections” of 3,267 buildings, almost exclusively located in the business district of the city. Indeed, at every location on the block, inspectors carefully examined “every story, cellar and attic of every building,” surveying the buildings for any and all dangers of fire, “be it rubbish, dangerous gas burners, defective flues, defective furnaces, careless disposition of ashes, careless use of open lights, etc., etc.” Each day company representatives examined various “blocks” in the city corresponding to the “block” organization of Whipple maps. When Whipple announced it had inspected “Block 123” on September 1, 1882, it directed readers’ attention to an area along the 600 block of Franklin Avenue:

> On the second floor of No. 610 Franklin Avenue (R. B. Tunstall & Co.), a stovepipe is not safely adjusted in flue.

> On the attic floor of No. 612 Franklin Avenue (A. Mohl), there is an open stovepipe hole, the flue is used on first floor in cold weather. In the rear of first floor willow baskets are suspended over a gas jet.”

Naturally Whipple’s reports employed the language used by insurance companies and which appeared on Whipple’s map keys. Agents, underwriters, or anyone familiar with the insurance industry could move between Whipple’s reports, its maps, and its insurance policies with great ease.32

As much as they helped to reconceptualize the city’s susceptibility to fire risk, inspections provided Whipple an avenue to intervene in the physical landscape.
Whipple Fire Insurance Map, plate 65, volume 2, detail of city block no. 88 (Locust to Olive, North 4th and North 3rd), 1897. By the last decades of the nineteenth century, insurance maps cataloged and represented many elements of the urban landscape, reflecting the growing complexity of underwriters’ efforts to control the problem of fire. Many firms even used the oversize portfolios to manage their risks, recording policy numbers and coverage amounts directly onto the atlases, helping them to avoid taking too many risks within small or contiguous areas. Courtesy, Missouri Historical Society, St. Louis
Each time surveyors discovered a material danger of fire, they brought it to the attention of the occupants and owners of the building. In addition, the next morning the *Daily Fire Reporter* publicized which properties had passed inspection and which had not. Although on some occasions there were no hazards found in a block, usually Whipple’s surveyors found and enumerated dangers—on which the *Reporter* would comment. An entry from December 1882 under the heading “Inspection of Buildings” noted the hazards that gasoline and rubbish posed: “Block 6. At Nos. 514 and 518 South Second Street Gasoline is used. Ashes and rubbish are deposited against fence and outhouses at Nos. 508, 510, 514, & 518 South Second Street.” Strict reinspection buttressed the effectiveness of Whipple’s program—especially when it came to pressuring property owners to accede to Whipple’s recommendations. Every Monday, Whipple employees reinspected the risks they had reported the previous week. If dangers had not been removed, the building and its occupants were once again reported: “All dangers of fire reported for the week ending Thursday, January 19, 1882, have been removed, with the following exception: At No. 623 Locust Street (Read’s Restaurant), a cooking range is in use, the floor beneath which is not protected.” Reporting unsafe conditions for the first time appears to have resulted in the removal of the fire hazard in about three-fourths of the instances. Announcing the presence of fire dangers for a second time brought even more pressure on the occupants (and/or owners) to remove the dangers of fire.33

Municipal officials confirmed and legitimized Whipple’s authority. In the first half of 1882, the *Daily Fire Reporter* frequently reprinted a small notice from the chief of the St. Louis Fire Department offering assistance to Whipple. The note from Chief H. C. Sexton, dated February 1876, commended and approved of Whipple’s plan for inspections and further advised that “should parties refuse to comply with your request to have dangers of fire remedied, I will render you such assistance as may be needed.” In August 1882 the company announced that it had received a letter from John Beattie, commissioner of public buildings, regarding its system of inspection: “I have investigated your system of inspecting buildings (for the purpose of abating fire dangers), and in approving the same, I will say, that wherever dangers of fire exist and the parties responsible refuse or neglect to comply with your requests in the premises, I will render you all necessary assistance.” At regular intervals and in their year-end assessment of risk in the city, the company reiterated its relationship with the building commissioner and the municipal government. If after notice of a continuing hazard a property owner refused to act, Whipple informed the owner that the company had notified the city building inspector of the variance. As the firm explained in the *Daily Fire Reporter*: “[We sent
the party a notice signed by Mr. John Beattie, the City Building Inspector, who is legally authorized to enforce the removal of dangers by fire. We have a volume of blank notices in our office made in duplicate—when we send a notice to the party we also send a duplicate to the above named official so that he is informed of what use we are making of his name.” In cases of particularly acute danger, Whipple skipped the process of reinspection and immediately informed Beattie’s office. The Daily Fire Reporter observed that the notices sent to the building commissioner “usually” had their desired effect; further, when no attention was paid by a property owner to a notice of hazard, Beattie “never failed to enforce our recommendations.”

Qualitative analysis of the Daily Fire Reporter suggests that Whipple rarely had to report property owners to the city’s building commissioner. Why was this? Was it because the St. Louis municipal government’s enforcement of building codes was that much more effective than other cities of the same era? Or did Whipple’s authority in matters of inspection derive from a source outside the local city government? How, indeed, can we explain Whipple’s apparent success at getting property owners to remove hazards?

Whipple’s ability to coerce compliance with its suggestions developed out of the company’s complex relationship to the fire insurance industry. The Daily Fire Reporter supplemented Whipple’s maps, diagrams, and surveys with information about particular risks at a site. Most of the risks identified by the Daily Fire Reporter, such as holding ashes in a wooden container, were strictly prohibited in most insurance contracts. As a result, if a fire occurred where such hazards existed (or, perhaps, had previously existed) underwriters could potentially contest a loss and refuse to pay. After the 1880s, Whipple’s maps, like other insurance maps, provided underwriters with a “warranty” on the property. In other words, property owners could not alter their property (introducing new fire hazards) without potentially invalidating the insurance contract. Evidence that Whipple was aware of these relationships appears in its 1883 explanation of its inspection process. The company advised that it is not necessary for “insurance agents with a line on the risk [which did not pass inspection]” to visit the property owner. Under close scrutiny from Whipple, property owners faced the prospect of losing their insurance coverage or not receiving payment for a loss if they did not remove fire dangers.

The threat of losing insurance coverage may not have been the only motivation driving property owners to remove hazards threatening their property. Whipple’s inspections also provided crucial information to property owners in that it identified potential hazards and recommended solutions. At a time when insurance contracts
paid only two-thirds or three-fourths of the value of goods lost, property owners bore a substantial portion of the risk. Consequently, inspections gave them the ability to diminish their financial liability. They also provided evidence that owners were abiding by the strict terms of the fire insurance contract—information that may have been useful when entering into disputes with underwriters about the terms of their contract. As a result of this process of inspection, reinspection, and publishing the results, Whipple found most of its recommendations for removing hazards had been heeded. The threat of government intervention, then, served as an important supplement to, rather than a substitute for, the authority that the market conferred upon the Whipple Insurance Protective Agency.37

Through its program of inspection, Whipple established itself as an intermediary between underwriters, agents, and the insured. Having a third party survey and analyze property eased conflicts between the parties to the fire insurance contract. Whipple performed the inspections that agents were encouraged to do on a regular basis, thus lightening the load of agents and giving underwriting companies more control over how the agents conducted business. If Whipple's maps or inspections consistently indicated that a particular “risk” was especially dangerous, insurers could advise agents not to renew that property. Rather than relying on agents to assess the fire risk of a particular property—a decision which some in the industry thought could be affected by agents’ desire to get business—underwriters used maps and inspections to assess risk independently of an agent. Indeed, during the 1920s, young men entering the insurance business could be employed as “map clerks” whose primary responsibility included writing “lines” on maps “so that the company's liability can be seen at a glance.” Maps could embolden companies to enter markets distant from their “home office” because they could be assured quality representations of fire risk in those places.38

The efforts of mapping agencies such as Whipple were a crucial component of the fire insurance industry’s increasingly sophisticated and detailed production of knowledge regarding the risks of fire. As often as possible the Daily Fire Reporter quantified or evaluated everything about a blaze from the total financial loss to insurance loss to the origins of a fire. For instance, on January 24, 1882, the Daily Fire Reporter announced that on the previous day a fire had been caused when a child lit a match to determine how much gasoline had spilled in a barbershop. At other times, entries were more speculative about the origins of a blaze. The Cass Avenue conflagration of July 21, 1882 “originated in the cellar [of the Cass Avenue Planing Mill Company], which contained the main line of shafting, and was probably caused by a hot box.” Even so, over 20 percent of the time in 1882, the Whipple Insurance Protective Agency could not determine the origins of a fire.39
Whipple transformed its daily evaluations into monthly and yearly reports of the causes, origins, and dangers of fire in the city. In its “Monthly Fire Report” for July 1882, Whipple noted that over $120,000 in fire loss had been recorded in the city; of that, approximately $115,000 had been covered by insurance. There were forty-two fire alarms, three false alarms, a second alarm, and nineteen “still” fires. Of the fifty-seven “causes” of the month’s fires, nineteen were unknown, and fireworks had caused ten fires—not a surprising fact given the July Fourth holiday. Moreover, just as insurance companies tabulated statistical records of losses yearly, Whipple created a year-end statistical portrait of fire loss and risk in St. Louis—a record often placed within the context of statistics gathered in previous years. For instance, in 1882 the company analyzed the previous year’s fire loss according to a number of categories, including “Causes of Fires in the Past Year,” “Occupancy of Buildings in which Fires Originated,” types of buildings where fires originated, a month-by-month accounting of “Loss,” “Insurance,” and “Loss to Insurance Companies,” “Recapitulation for the Past Thirteen Years,” and the “Building Inspections.” When it enumerated the causes of fire Whipple not only advanced insurers’ knowledge of the problem, but also it legitimized its own and the industry’s authority on the subject.

Additionally, the company offered evidence of the importance of insurance and helped to demystify and comprehend fire in rational terms by dissecting previous incidents of fire. In fact, the *Daily Fire Reporter* often provided a dramatic marketing message for insurance when it underscored the dire economic costs of fire. The publication gave each fire a cash value, thus clearly identifying the severe economic consequences of the fire problem (to both the community and property owners). Even relatively minor fires were reported. An early morning blaze in January 1882 caused $100 of damage to a barbershop and another “small loss” to a perfumer. It also recorded large blazes, such as the fire that destroyed an entire block of Cass Avenue and the Cass Avenue Planing Mill Company. The *Daily Fire Reporter* listed all twenty-seven insurance companies that had insured the Planing Mill Company, for $4,500 on damage to the building and $23,500 on its “contents”—both stock and machinery. The same blaze also destroyed a furniture factory that was insured by firms in London, Paris, Cincinnati, and Philadelphia. Just days after the loss on Cass Avenue, other unrelated fires in the city during the early morning hours caused over $100,000 in damage and substantial loss to insurance companies.

The *Daily Fire Reporter* also promoted insurance as the best method to protect property. The newsletter emphasized that fire danger could be combated, and it
distinguished between business owners who purchased fire insurance on their property and those who did not. In January 1882, it contrasted the uninsured barbershop owner who lost $100 with the perfumer who suffered a small loss but had “$600 in the Watertown.” In addition to encouraging consumers to purchase insurance, it also provided object lessons to insurers—especially those firms that varied from prudent business practices. For example, the *Daily Fire Reporter* listed large fires in other cities and closely detailed heavy losses that resulted from fires in St. Louis. This practice warned insurance companies against taking risks that were too large or too closely concentrated.42

As the *Reporter* enumerated the horrors of fire, it recognized the benevolence of the underwriting community. For instance, it documented the role insurers played in reducing fire losses by highlighting the work of the Underwriters Salvage Corps. Periodically, the *Reporter* praised the corps, though it was expensive to maintain: “The Salvage Corps of St. Louis have made a splendid record for 1881, and have saved to the insurance companies and property owners many times the cost of their maintenance.” Subscribed to by businesses, insurance agents, and underwriting companies, the salvage corps, or “insurance patrol” as it was sometimes called, used tarpaulins to cover items on the lower floors of a building to prevent water damage. Though not formally part of the fire department, the salvage corps sometimes helped extinguish fires, as happened on the morning of September 4, 1882, when they put out a fire in a three-story brick building.43

Insurers’ surveillance of the built landscape had grown remarkably comprehensive by the early twentieth century as surveyors mapped more cities and maps grew more detailed and uniform. As maps became standard, the business of mapping was consolidated into the hands of fewer companies, especially as the Sanborn Mapping Company absorbed its competition. By the beginning of the twentieth century Sanborn dominated the industry and published atlases for nearly five thousand U.S. cities and towns. In 1905, Sanborn published a *Surveyor’s Manual for the Exclusive Use and Guidance of Employees*, which became the de facto industry standard. In 1908, the Fire Underwriters’ Uniformity Association adopted a “Key to Plan Notations” that explained the colors, symbols, and notations used on fire insurance maps. In 1914, the NBFU appointed a special committee to determine the utility of setting up its own map-making operation. Although the NBFU did not create its own company, its map committee worked closely with businesses like the Sanborn Company (which held a virtual monopoly on insurance surveying by 1920) to produce standard maps for over twenty thousand cities and towns throughout the nation.44
Trade Associations and Schedule Rating

Creating standard routines, a common visual language, and similar approach to categorizing risk helped the industry to define the problem of fire more clearly. In particular, insurers began to develop a network of local and regional underwriting associations that filled the vacuum left by the NBFU’s decline in the 1870s and 1880s. These organizations created a platform from which insurers began to remake the industry’s priorities, including intervening in the built landscape to promote fire safety. Likewise, the industry began to experiment with new methods of rating risks that corresponded to the developing interest in preventing fire and to the intensive process of gathering and assessing data. The expanded cooperation of underwriters, though imperfect, began to remake the industry, helping it to find more cohesion and to take the first tentative steps in a new direction during the 1890s.45

Beginning in the 1870s, underwriters established a rapidly expanding network of local and regional associations dedicated to supporting everyday routines and industry regulatory activities. These trade associations fostered the development of standard practices by providing crucial services to companies doing business in their region or locale, including mapping, inspection, rating advice, and loss adjustment. For example, in 1879 a number of national (and international) insurers founded the “Western Union” to control rates and practices in western states. Such associations multiplied in rapid succession. In the Southeast and West, fire insurance companies formed the Southeastern Tariff Association in 1882, the Pacific Insurance Union in 1884, and the Rocky Mountain Fire Underwriters Association in 1889. About the same time, in the Northeast and Midwest, insurance companies organized the New England Fire Insurance Exchange, the Underwriters Association of the Middle Department, and the Underwriters Association of New York State. These decentralized organizations began to receive broader coordination from the Eastern Union, established in 1893, with similar arrangements developing nationwide between local and regional underwriting associations.46

This loosely affiliated network of associations provided the platform from which underwriters hoped to re-create industry priorities. Through the activities of local, state, and regional associations, underwriters acquired a new appreciation for the complexities of the built landscape and fire protection. The associations operated at multiple levels—national (i.e., the NBFU or, later, the National Fire Protection Association), regional (e.g., the Western Union or Southeastern Tariff Association), and state and local (e.g., the Ohio Inspection Bureau or the Philadelphia Underwriters’ Tariff Association). And, although they were not formally linked
though many insurers insisted that they were not in the business of fire prevention, underwriters became accustomed to meddling in the urban environment. If insurers’ focus on simple profitability and expanding their business remained central to their endeavor, their core mission gradually began to expand as they developed a taste for controlling the built landscape. In 1884, for instance, the St. Louis Board of Fire Underwriters—led by James Waterworth, C. T. Aubin, and Western Bascome—assessed the city’s fire protection and argued that the infrastructure was inadequate. It recommended nearly $500,000 in improvements, which included $190,000 for several new engine houses and apparatus and over $270,000 for new water mains and fire hydrants. Within a year, nearly all the changes had been made or at least acted on. The fire department located four new engine companies in the city’s commercial and industrial districts and expanded by eighty-three men, a 24 percent increase from the previous year—the largest single increase in the department’s history.

Underwriters’ associations performed many mundane, albeit overlapping tasks; they inspected and rated fire risks, and especially sought to regulate local (or state or regional) practices. For example, the Philadelphia Fire Underwriters’ Tariff Association (later the Philadelphia Fire Underwriters’ Association, or PFUA), formed in 1884, worked closely with the Hexamer Mapping Company and its proprietor C. J. Hexamer to survey and rate risks throughout the city. The organization compiled minimum rates for dwellings, churches, and other small or non-commercial risks. It established a rating system for mercantile hazards such as factories, warehouses, and department stores. Each such property required a special survey, usually conducted by Hexamer, in addition to the already extant company map. During its first year of existence a tariff committee—which included nearly every member—met four days per week and set rates on hundreds, if not thousands, of properties or property classes throughout Philadelphia. As a way to circumvent the 75 percent majority needed to approve each rate, the association created rating schedules for various districts and types of properties. Using many such schedules, the PFUA surveyed and inspected each risk underwritten—especially those of large commercial hazards. In the process, the association suggested improvements in construction and design. It reported that “hundreds of risks have been permanently improved and many fires prevented.” Just as the surveys of the
Whipple Mapping Agency aided the St. Louis Board of Fire Underwriters, Hexamer’s maps and board-sponsored inspections provided the Philadelphia underwriters’ association an avenue to alter the built environment in a manner that would prevent fires.49

As underwriters developed an increasingly pervasive surveillance of the built landscape, of their clients, and of themselves, leading insurers experimented with new approaches to setting rates. Many firms began to utilize a rating method known “schedule rating,” which contrasted dramatically with the methods that the NBFU had proposed for establishing common rates. Inaugurated in 1893 with the publication of Francis Cruger Moore’s *Universal Mercantile Schedule*, this mode of setting rates depended upon a complex formula of charges and credits based on the internal and external hazards of a risk as well as a structure’s protective features. Rating in this manner rapidly became tied to the inspection and categorization performed by fire underwriting associations, and insurance companies that used the schedule for determining premiums assigned a “base rate” to a building of particular construction, type, and use. After establishing a base premium, insurers referred to the complex schedules and added or subtracted value based on a variety of factors. Dangerous fixtures, design, or construction materials would increase the premium, whereas aspects of construction deemed fire preventive would result in the lowering of a premium. Using schedule rating techniques to figure premiums involved far more effort and care than underwriters had previously shown. When they evaluated risks using such schedules they assessed more than categories of construction, occupation, and (to a limited extent) immediately external hazards. This method inventoried a wide range of information, including the material produced and/or warehoused in a building, minute details of construction that might render a building more or less safe, in-depth examinations of external hazards, and consideration of fire extinction conditions in the locality. Schedule rating reflected the intense manner in which the industry gathered knowledge and represented an escalation in the use of information in daily practices.50

The industry hotly debated the merits of schedule rating. To many critics, it hearkened back to the mode of establishing premiums that was used by the industry early in the nineteenth century. Although schedule rating developed from the categories produced by the industry’s intense scrutiny of the landscape, it did not strictly depend upon the actuarial record. In spite of the fact that these systems, such as Francis Cruger Moore’s *Universal Mercantile Schedule*, involved a high level of rigor and care and classified risks in a more detailed fashion than previous rating schemes, many within the industry criticized the schedule as “unscientific.” Critics argued that assessments made by the schedule contained arbitrary valua-
tions of fire hazard. Indeed, the *Universal Mercantile Schedule* and other such programs deviated from the objective loss record because the assessments they made (debits and credits) did not reflect the actual statistical record of fire experience. However, according to its proponents, schedule rating produced premiums that roughly approximated the actuarial record. In addition, according to one authoritative source, this method resulted in rates that were exactly alike provided that a risk had “exactly the same construction, occupancy, fire protection and environment.”

Although underwriters remained sanguine about the potential benefits, the use of schedule rates faced many of the same difficulties that attended rating activities more generally. Competition for business usually manifested itself in debates about the price of insurance—an issue that had plagued the industry from before the Civil War. Adjusting prices as a result of competition, then, repeatedly thwarted underwriters’ efforts at establishing standard rates and even hindered the ability of individual firms to follow their own rules. Additionally, schedule rating involved so many factors that many critics believed this method of setting premiums actually spurred price competition, further undermining the industry’s ability to create uniformity. Moreover, these schedules depended upon agreements between companies and local underwriting associations on “base rates.” Not only were such accords difficult to maintain, but the task of coercing nonmember companies to comply with base premiums was nearly impossible. As a result, the *Universal Mercantile Schedule* produced rates that differed significantly from city to city and town to town but not for any objective reason. According to the *Weekly Underwriter*, market conditions accounted for price differences because the schedule was not often followed. That is, if a locale could bear higher insurance rates, then it paid higher premiums regardless of features particular to that place. The *Weekly Underwriter* further argued that the use of schedule rating systems tended to discriminate according to events of the recent past, which ran contrary to actuarial principle. In addition, the practice of using schedules often resulted in additions and subtractions to the base rate that were not contained in the actuarial record, increasing the possibility of large financial losses. For instance, in 1892 the PFUA recommended a rate hike of over 20 percent because fire losses so significantly deviated from its schedule of premiums.

Despite its limitations, schedule rating conformed to the changing character of everyday underwriting practices—especially the industry’s intensive program of gathering information and the growing strength of local underwriting associations. It also hinted more broadly at underwriters’ increasing interest in preventing fires. Many underwriters began to believe that schedule rating provided them
with a tool that would help to coerce property owners to build a safer urban landscape because this system discounted or increased premiums according to a variety of risk factors. According to the PFUA, “schedule rating results in the removal of articles likely to cause fire, because, if not removed, the rate is increased by reason of their presence. It also results in the introduction of fire defenses, because the absence of such defenses is charged for as a deficiency under the schedule.” Similarly, James Waterworth, former President of the St. Louis Board of Fire Underwriters, argued in his memoir that schedule rating had helped the St. Louis board improve construction in the city’s central commercial district and to pass legislation mandating safer building practices. Waterworth pointed to the appearance of several fireproof structures during the late 1880s and into the 1890s as evidence of the board’s success. The board had urged passage of a “slow-burning construction ordinance” and its adoption, according to Waterworth, “was the signal for beginning the equipment of St. Louis with suitable buildings for a more vigorous business life.” Many obstacles remained, however. Waterworth and the board faced continued resistance from some in the architectural community, and often the “public moved faster than the board” in seeking safer construction practices.53

The spread of schedule rating during the 1890s suggested that a new mentality had begun to emerge in the fire insurance industry. Emboldened by their intense surveillance and common practices, many insurers began to advocate the active removal of obvious fire hazards from the landscape in order to reduce annual losses. The 1890s marked the industry’s first full-fledged attempts to intervene in the built environments of urban America. After its dormancy in the 1880s, the National Board of Fire Underwriters began to revive itself and to reestablish its leadership role by becoming more active in fire preventive matters. In 1892, the board sponsored drawing up a national electrical code to supervise the installation of electric wiring and lighting. Furthermore, when the NBFU appointed a committee to help frame or to recast the Universal Mercantile Schedule, it abandoned its previous singular focus on setting uniform rates determined according to a national actuarial table. Rather than embracing the notion that it could establish premiums that would be followed by the industry’s many firms, the NBFU responded to the desires of its membership. It began to assist them in the process of determining categories and rating valuations for a variety of “internal” risks, as well as “external” environmental dangers.54

The NBFU also took its first hesitant steps toward an activist prevention agenda by following the leadership of local underwriting associations and firefighters. In the 1890s, for instance, the NBFU joined the National Association of Fire Engineers, along with other professional organizations, to recommend modest regula-
tions for building construction. The organization also resolved to "bring the insurance people and the National Association of Fire Engineers into closer relationship, and unite in reducing the enormous fire waste." In addition, underwriters’ aggressive inspection of fire risks generated a critique of fire departments, water systems, and other aspects of fire-protective infrastructure. Beginning in 1889, the NBFU recommitted itself to inspection of fire departments and cities across the nation—including all aspects of urban infrastructure. The comprehensive inspection regimen, which sought to upgrade, standardize, and rationalize fire departments and infrastructure, derived from the surveillance that local underwriting associations had established in their respective jurisdictions.55

The NBFU’s initiative in the 1890s only increased the scope, depth, and intensity of the fire insurance surveillance of cities. The development of a systematic, national approach to the urban and rural fire protective infrastructure had long been an interest of the fire insurance community. Ever since fire underwriters critiqued volunteer firefighting in the 1850s and advocated the use of steam fire engines, they had consistently pressured cities to improve their fire-protective infrastructure. However, the program initiated in 1890 differed from earlier efforts in several important respects. First, the effort was systematic. Spending over $5,000 annually, the NBFU hired a full-time inspector, paid for his travel expenses, and printed the inspector’s reports. In 1893, the NBFU inspected and reinspected over 150 cities—a pace that it sustained through the early twentieth century. Secondly, the effort was as comprehensive as it was deep. By 1904, the NBFU developed an extensive and detailed set of "Standards for Grading Town Public Fire Protection." The standards covered water supply, waterworks, fire department organization, and departmental equipment. Lastly, after some wrangling, the NBFU forged common ground with the National Association of Fire Engineers to upgrade the nation’s fire departments.56

During the 1890s, the NBFU drew upon the work of local associations as it began to develop a program to erect standards of prevention against fire. The Underwriters’ Laboratories (or UL), established in 1894, would become one of the most significant aspects of the fire insurance industry’s twentieth-century war against “fire waste.” Established in collaboration with the Chicago Fire Underwriters’ Association, the Underwriters’ International Electrical Association (as UL originally labeled itself) supervised electrical safety at Chicago’s Columbian Exposition. Directed by William Merrill, UL helped to make sure that the showcase “White City” electrical exhibition would live up to expectations as it began to tackle the larger issue of the safety of electricity.57

Like Underwriters’ Laboratories, the National Fire Protection Association
(NFPA) developed independently, but over time it too was drawn under the umbrella of associations that the NBFU used to popularize its program of fire safety. Formed in 1896 by men primarily associated with the Underwriters’ Bureau of New England and the Boston Board of Fire Underwriters, the NFPA’s membership consisted of stock fire insurance companies interested in improving their surveillance of “risks.” The organization’s first project involved formulating standards relating to automatic sprinklers. In subsequent years, the NFPA established committees to report on other fire-protective devices, including fire doors and shutters, hoses and hydrants (in collaboration with the National Association of Fire Engineers), fire alarms, fire extinguishers, fire retarding materials, and fire pumps. In 1900, as the NBFU refocused its agenda, it sought a cooperative relationship with the NFPA to produce standards for fire-protective devices. Recognizing the overlap in the two organizations, the NBFU and NFPA agreed to work together to formulate and promote standards for fire-protective devices. The NBFU reproduced the NFPA’s standards as its own, assumed the expense of publishing them, and printed the annual proceedings of the NFPA.

Conclusion: Disorderly Men, Competition, and the Problem of Fire

For all their rhetoric about standardized practices, unity, and discipline, the insurance industry failed to bring the problem of fire under control. On the eve of the twentieth century the insurance industry could not boast of any systematic program that had made American cities, much less the industry itself, safe from fire. More significantly, the industry’s financial status was not improving. Between 1860 and 1896, over eight hundred companies went bankrupt; profitability remained below 4 percent. Moreover, the industry remained subject to the vagaries of conflagration, much as it always had. A study conducted in 1905 confirmed that over 33 percent of the industry’s losses were produced by conflagration. Only a small segment of the insurance industry—New England’s Manufacturers’ Mutuals—had developed a coherent program of fire prevention and safety by the twentieth century. Their research, begun in the 1880s, was led by Edward Atkinson and would provide inspiration for future work in fire prevention. For example, sprinkler systems, a fixture of late-twentieth-century construction, were developed in New England textile mills. Although the experience of the mutuals could not be easily replicated outside of the tightly controlled economic and built environment of New England textile capitalism, Atkinson and his cadre of engineers became agents of change as they encouraged the spread of fireproof construction and
pushed the main body of the fire insurance industry to become more cognizant of safety. Even though stock insurance firms seemed to be awakening to new possibilities, they remained hesitant to become active in promoting public fire safety, and perhaps the most energetic voice for improving public fire safety was the National Association of Fire Engineers.\footnote{59}

In the end, the insurance industry’s attempts to make business practices and manhood more rational appeared to have fallen short on many fronts. If urban fire insurance maps diagrammed danger and offered suggestions for safety, they had not yet become the underpinnings for a electrical, building, and fire department standards. If urban cityscapes sometimes included an increasing number of “fire-proof” or slow-burning buildings, there was no systematic pattern to such construction, nor had the NBFU succeeded in its initial attempts at developing a uniform building code. If society demanded that middle-class men behave with order and regularity, such admonitions did not help the men of the insurance industry to transcend the “creative destruction” of American capitalism. Despite warnings against taking excessive risks by seeking protection from standard practices, middle-class businessmen embraced the individualistic, rough-and-tumble world of laissez-faire capitalism. As a result, their firms went belly up in large numbers. Yet, stunningly, as late as 1894 American fire underwriters remained unconcerned about public fire safety. Quite simply, it was not their responsibility, which—paraphrasing the National Board of Fire Underwriters—was to make profit from conflagration, even if this meant charging consumers higher rates. Although the seeds of change had been sown, insurers nonetheless were not succeeding in their effort to arrest the problem of fire. On the eve of the twentieth century, the marketplace, rationalized business practices, and middle-class manhood had thus far failed to bring discipline and order to the American environment.\footnote{60}