



FLAMMABLE CITIES

Urban Conflagration and the
Making of the Modern World

Edited by
Greg Bankoff, Uwe Lübken, and Jordan Sand

Afterword by Stephen J. Pyne

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FLAMMABLE CITIES



Introduction

In most cities of the wealthy countries today, fires have been reduced to an occasional and isolated threat or a minor news item. Ordinary citizens entrust their suppression to professional fire departments. However, conflagration was once far more central a fact of urban life. Preindustrial cities burned frequently, and on a scale rarely seen today. Uncontrolled fires affected every aspect of society in these flammable cities, including the shape of the city itself. Yet many of them prospered, and some grew to populations of over a million inhabitants. New building and extinguishing technologies and the rise of fire insurance have fundamentally altered the relationship between cities and fire since the seventeenth century. As the world population in the same four centuries went from an overwhelmingly agrarian one to more than 50 percent urban, the history of urban fire and the changing ways that people have sought to prevent it, fight it, recover from it—and in some cases manipulate it—is also the history of how the modern world was made.

Although it has been common to conceive of the city as an artificial creation set in opposition to nature, like the agricultural landscape, cities too are human interventions in the natural environment.¹ They remain greatly affected by the forces of climate and require constant labor to sustain them against the elements.

The ways that different societies have adapted themselves to and remolded the natural environment for concentrated human settlement are vividly exposed by the history of conflagrations. At the same time, the majority of urban fires have been anthropogenic. Their history therefore reveals patterns of social and economic causes, tied closely not only to the destructive effects of crime, riots, and war, but also to the constructive processes of politics, innovation, and capital investment.

The essays in this volume examine the ramifications of urban conflagration in eighteen cities and regions around the world from the seventeenth century to the beginning of the twenty-first. Each probes in depth the historical conditions and events of a particular place. The juxtaposition of these histories brings to light a wealth of points of comparison, laying the foundation of a general typology of urban fire. It also shows the degree to which firefighting and prevention knowledge, as well as stories of great fires, have traveled, connecting urban practices and ideas in disparate places. At the same time, when viewed in global perspective, the problem of urban conflagration, far from being a matter of only historical concern, emerges as an ongoing one. Cities around the world continued to be built of wood and other flammable materials well into the twentieth century. Some still are. Particularly where large migrant populations self-build in flammable materials on small lots, conflagration continues to be endemic. And the influence of fire remains omnipresent in the wealthy cities of the developed world as well in the form of the many different strategies and institutions of prevention, from illuminated exit door signs and sprinkler systems to fire insurance.²

Our aim in assembling studies of these cities and regions is to gain new perspective on the phenomenon of the flammable city through multiple approaches, and most of all, through treatment of a global geographical range. Rather than focusing on the largest and most famous fires or only the largest cities, we have sought to bring together sites and issues that, when viewed together, might provide the beginnings of a global map of the conditions and the historical issues of flammable cities. We have grouped them here into three broad thematic sections, which also follow a loose chronology. The first treats what we call the “urban fire regimes” developed in early modern cities: the systems of building and managing cities that developed in relation to specific patterns of fire engendered by local environmental and social conditions. The second group of essays treats conflagration or the threat of conflagration both as a specific form of risk and as a catalyst for social and structural change. Examples extend from the mid-eighteenth century to the beginning of the twentieth century. The third group of essays, treating the politics of fire, brings the reader into the late

twentieth and the early twenty-first centuries, and returns to central questions concerning the political meanings of urban conflagration, particularly in the context of the squatter-built cities and conditions of urban administrative collapse that have become part of the landscape of global modernity.

Although the salient questions differ in different times and places, taken together these studies show that the process of limiting the effects of uncontrolled fire or its threat has been a central—if often overlooked—feature in the planning and building of modern cities, and more importantly, that the efforts to master and marginalize conflagration have never been based on simple economic calculation, but have involved a complex social and political calculus. Nor has the process proceeded evenly. In European and North American cities, where the conquest of fire appears the most complete, although large conflagrations were mastered through extinguishing technology as early as the seventeenth century in Amsterdam, the massive fire in Hamburg in 1842 and the fires following the San Francisco earthquake of 1906 (among other large fires in North American cities) reveal that a simple story of economic improvement and technological advance is inadequate. The evolution of fire suppression relates to modern institutions of capital in many ways, as the studies here of insurance in the United States and of real estate development in the city of Montreal both demonstrate. Some flammable cities, such as Manila and Edo-Tokyo, accommodated themselves to periodic conflagration as a necessary cost of urban living and nevertheless saw remarkable commercial and bureaucratic development. State interests more than capital formation have driven fire suppression in other cities. From Russia's Peter the Great in the early eighteenth century to Singapore's People's Action Party in the 1960s, ruling authorities have sought to display enlightened modern government by rebuilding districts in fire-resistant materials. Finally, when viewed globally, it becomes clear that uncontrolled fire continues to be part of modern urbanism not only as a hazard but as a *useful* social and political tool. This is shown in a variety of different ways in cases from Cleveland, Beirut, Lagos, and Jakarta.

Historiography

Urban history has tended to treat fires as catastrophic events belonging mainly to the premodern past rather than integral parts of the processes that shaped modern cities. Paul M. Hohenberg and Lynn Hollen Lees's widely read survey, *The Making of Urban Europe, 1000–1950*, for example, refers to fire along with siege and famine as “the enemies of cities in early centuries,” but apart from

reference to replanning following the 1666 Fire of London, omits further discussion of the subject.³ Louis Mumford's classic *The City in History* cites building restrictions imposed in Lübeck and in London in the thirteenth century for purposes of fire prevention, and notes that pervasive conflagration may have had a "cleansing effect" by clearing unsanitary housing (a belief acted upon in later centuries—see below).⁴ But despite his consciousness of environmental questions, Mumford otherwise leaves fire at the margins of consideration in his account of European urban growth.

Some studies of individual cities known for their flammability give fire a more central place. Zeynep Çelik's study of the reconstruction of Istanbul traces the role of conflagrations as a catalyst for replatting neighborhoods during the nineteenth century.⁵ William Rowe's *Hankow*, which treats the early modern life of a city that is said to have burned more frequently than any other in China, demonstrates the large social role of fire brigades, discussing in detail the actual operations of firefighting and the difficulties of prevention.⁶ Studies of the Japanese capital of Edo (modern-day Tokyo) also recognize the centrality of fire to the city's growth and social institutions.⁷ By contrast, histories of London often abandon the subject of fire altogether after the Great Fire of 1666. Numerous books can be found about that devastating event. Yet, contrary to the popular image that London was rebuilt in brick and thus rendered fire-proof, conflagrations continued well into the nineteenth century.⁸

A handful of studies, beginning with the seminal work of Stephen Pyne, have treated urban fire more comprehensively as a universal aspect of human settlement.⁹ Johan Goudsblom's remarkable synthesis, *Fire and Civilization*, considers conflagration together with controlled fire in both urban and rural contexts.¹⁰ Cathy Frierson's *All Russia Is Burning* opens new ground in the history of fire by exploring the social meanings of fire, and arson in particular, in villages of the Russian empire.¹¹ Focusing on three US cities in the nineteenth century, Christine Meisner Rosen has used urban flammability as a means to analyze political contests over the power to build the city, noting the inertia of property rights, real estate markets, and neighborhood solidarities that prevented cities from fireproofing after large nineteenth- and early twentieth-century conflagrations.¹² Rosen's work is significant for moving beyond a whiggish meliorative history of technological advances and identifying the political complexities surrounding fire.

The work of economic historians Eric Jones and Lionel Frost on what they call the "fire gap" offers a powerful thesis connecting fire susceptibility to economic and political development. They find that in Western European and

North American cities during the nineteenth century a gap opened between population growth and the incidence of fire damage: although urban populations rose, the number of large urban fires declined across the century. They attributed this to increased investment in fire-resistant materials such as brick and stone and, in North America especially, to larger house lots.¹³ Frost followed this with an analysis of the contrasting case of what he calls “Asian cities,” where building in perishable materials remained the norm—a product, he asserts, of a “prisoner’s dilemma” situation in which individual property holders considering the large investment in fireproofing lacked sufficient guarantees that others would make the necessary investment too.¹⁴ These important arguments present a framework for further discussion and a foil for debate for several authors in this volume.

In addition to great fires, firefighters and their institutions have been well documented, and there is a growing literature in the United States and elsewhere on the history of the fire brigade. In *Cause for Alarm*, Amy Greenberg shows how the combination of daring, altruism, and public-mindedness that characterized volunteer firefighting during the first half of the nineteenth century exemplified American republican ideals more completely than any other form of association or public activity.¹⁵ Studies like Greenberg’s show that the urban fire hazard engenders the growth of special civic forms, but these civic forms at the same time are locally determined by political ideals and structures, making examination of the firefighter’s role critical to understanding the politics of the city.

The chapters in this book build upon this literature. They also challenge some of the assumptions that underlay these pioneering studies, particularly the historical perspective premised on a single European–American model of progressive mastery of nature, on one hand, with the rest of the world left to suffer the effects of unmastered nature, on the other. In place of this, we suggest a range of distinct patterns of urban conflagration and response shaped by concrete historical variables that cannot be placed in a single linear progression. These studies also reveal how technology and ideas about fire management diffused globally, showing the importance, often overlooked in narrower regional and urban histories, of the transnational movement of new knowledge. We see, for example, Dutch firefighting technology exported to Portugal, Russia, and Japan; English engineers and urban models influential in Germany; British companies introducing fire insurance in Istanbul and Valparaíso; American firefighting expertise brought to Mexico; and European standards of public safety held up as a mirror by anxious elites in Buenos Aires.¹⁶

Cities as Fire Regimes

The first chapters in this book are bound together by the idea that every city functions as a particular type of fire regime. Here, “fire regime” is meant as the nexus of environmental conditions, including climate, topography, and natural resources, with the political system that organizes and sustains concentrated settlement. Nature alone never determines the way a city is built or when and how it burns. Of course, there have been cities in arid regions built of nonflammable materials because of the dearth of local timber. Records suggest that the cities of ancient Mesopotamia, built of mud brick, were free from conflagration.¹⁷ Yet timber has been transported long distances for millennia. Egypt was already importing large quantities of cedar from Lebanon in 2700 BC.¹⁸ The issue, therefore, is not simply availability of resources for building in the region but the ability to acquire and mobilize resources. Until the advent of steel, wood excelled other construction materials in transportability, flexibility, ease of workmanship, and, in most cases, cost.

Furthermore, not only wooden cities burn, and even where wood is the predominant building material, not all wooden cities burn alike. Ancient Rome, which burned most famously in AD 64, was built of wattle and daub, a construction method Vitruvius condemned for its flammability. Rome suffered forty large conflagrations between 31 BC and AD 410.¹⁹ Among cities built of wood-frame structures, the difference between tile roofing and thatch or wood shingles could greatly affect a fire’s propensity to spread and therefore could also alter firefighting methods.

Most significantly, fire regimes change as political regimes change. The greatest transformations have occurred since the seventeenth century. This began with global trade and the emergence of new kinds of cities as the centers of the global “empires of trade.”²⁰ In certain of these cities, where the Crown did not claim the wealth from trade and colonial acquisitions to itself or was absent entirely, the bourgeois elite who dominated municipal government had a special interest in public protection of private wealth. This helped catalyze developments in fireproofing, fire extinguishing, and insurance. In many senses the first such city was the premier trading and financial center of the Dutch Republic and of seventeenth-century Europe, Amsterdam, which is appropriately also the first city to be examined in this volume.²¹

Elsewhere in the early modern world, empires ruled by autocratic or feudal sovereigns centered on capital cities built on a quite different logic. Where hereditary status had precedence over wealth, rulers tended to show greater concern for the social order than for the physical one. This is by no means to

say that urban residents or governing elites in these cities failed to invest in fire prevention and firefighting. Rather, the rulers chose not to treat preservation of privately accumulated wealth as a public good. In these cities, populations were exhorted to guard against fires, private vigilance being a grave social responsibility, and in some conflagrations huge numbers of firefighters were mobilized. The primary aims of city building and management, however, were social control and protection of the palace. The essays on Ottoman Istanbul, the Tokugawa capital of Edo, and the cities of imperial Russia in this volume reveal the workings of this autocratic urbanism and suggest some of the social and political upheavals that would be involved as these cities moved during the nineteenth and twentieth centuries toward the universal modern goal of creating a zero-hazard environment.

A third type of urban fire regime appears in the colonial capitals and entrepôts of the “neo-Europes” built by European empires. Environmental conditions in these places varied widely, of course. These cities, however, were often characterized by a sharp distinction between the colonists’ districts and districts of indigenous settlement. Since colonial economies were based on resource extraction and long-distance trade, local capital development in these cities was configured to serve these needs.²² Here, too, chapters in this volume explore the transition fire regimes underwent as global capitalism, modern nation-state systems, and transfer of the norms and forms of modern urbanism affected patterns in the city and its management. In the city of Valparaíso, which was a critical entrepôt in Pacific trade, the transformation follows the founding of the Republic of Chile—although in a period when Valparaíso’s economy continued to be dominated by foreign trading houses, and foreign navies commonly contributed to firefighting. In Manila (treated in part 2), it occurs under a colonial regime but was similarly affected by the impact of global trade.

These three types of fire regime should be understood more as schemas than as descriptions of the way actual cities functioned historically. Every city is politically, socially, and environmentally a hybrid. Nevertheless, classifying cities on the basis of these traits allows us to begin formulating propositions about what has made different cities respond to, and evolve with, conflagration in different ways.

Fire as Risk and as a Catalyst of Change

As Stephen Pyne reminds us, the built environment is as much a fire environment as forest and field, and fire cares little whether it burns old-growth slum

or ancient spruce.²³ Fire is central to the human notion of a home, the hearth about which the rudiments of a dwelling were first erected with the express purpose of keeping fire alive: villages are so many hearths, towns many more, and cities a multitude of tended flames. Throughout most of urban history, these structures were mainly built of materials readily sourced from the surrounding environment, particularly wood. Even when a building was constructed from more substantial matter such as bricks or stone, much of the framework, floors, and ceilings continued to be made from timber. These were wooden cities, which burned fiercely and with regularity either through accident or from intent.

Fire was a major hazard to the built environment and continues to be one in many parts of the world. Yet its nature does not lend itself to be included among the reported “natural disasters” that increasingly plague our world: major urban conflagrations outside of conflict situations have been rare since 1945 in the developed world, infrequent in most city centers, and prevalent only in the fringe settlements that ring the burgeoning mega-conurbations of the developing world, which lie largely beyond the realm of published statistics. Yet the Paraffin Safety Association of Southern Africa estimates that each year in South Africa, there are between forty thousand and eighty thousand household fires that result in the destruction of over one hundred thousand dwellings and the deaths of 2,500–3,000 people.²⁴ Even fire’s wildland counterpart merits scant mention in the official disaster compilations, amounting to barely 2 percent of all such events listed in the *World Disasters Report* for the decade 1999 to 2008 despite the fact that every year during the 1980s an estimated ten thousand fires raged across the state of California alone.²⁵

The nature of fire is complex, depending on a combination of fuel, climate, and ignition. It is “natural” in that lightning, “the vestal flame of the ancient earth,” is responsible for starting many forest and grassland fires.²⁶ As many as six thousand lightning discharges occur across the globe each minute, but barring exceptional conditions such as drought, natural fires are largely confined to certain drier climatic regions such as the southwest of the continental United States, the Brazilian savannah, southern Africa, and Australia.²⁷ Urban fire is also occasionally attributed to lightning—some 3.8 percent of building fires in Slovenia were started this way in 1997—but ignition in most cases is the deliberate or inadvertent result of human agency.²⁸ This human dimension to urban fire more than any other hazard reveals the extent to which disaster is embedded within the social system, so that fire cannot be understood only as a physical event: it represents the interplay between the material surroundings, reduced to so much fuel, and people rendered vulnerable to varying degrees through their unequal exposure to its impact. Critical to discerning the nature of urban

fire is an appreciation of the ways in which human systems place people at risk in relation to the environment and to one another, a causal relationship that can be understood in terms of an individual's, a household's, a neighborhood's, or a city's "vulnerability."²⁹ As Andrea Rees Davies shows in this volume, class was very much a factor influencing who was at risk from the fire that engulfed San Francisco after the earthquake of 1906.

Stephen Pyne has attempted to evaluate this vulnerability by schematically dividing the fire ecology of the urban environment into three: an urban core of heaped fuels and scattered flames where fire behaves much as wildland conflagrations and for identical reasons; a suburban frontier whose dispersed settlement confines flames more to individual buildings and where a "fire gap" began to appear in the late nineteenth century as the incidence of fire decreased even as the extent of the city increased; and an exurban fringe, the so-called wildland-urban interface (WUI), more a rural than an urban landscape and one where increasingly the city established "a de facto fire protectorate" over extensive hinterlands, suppressing natural burning with periodic dire consequences.³⁰ The application of this model to the developing world is questionable, however, as these spatial divisions of the urban-rural continuum are commonly "in-filled" by informal housing made from more flammable materials and ringed by slum settlements often many times larger than the "city" proper.³¹ In the past, too, the great cities of Asia and the "colonial" ones of the New World and beyond burned to other rhythms. Vulnerability here was of a different order, in which building houses cheaply and furnishing them sparsely was an effective response to the constant threat of fire.³²

Fire has long been perceived as either "bad" or "good": despised for the damage it caused or appreciated for its regenerative properties. Bad fires outside cities were those lit by farmers, hunters, and herders and viewed by urban-based elites and office-bound officials as destructive, wasteful, and primitive, a threat to valuable economic assets such as timber stands, cash-crop plantations, and buildings. Good fires were lit by much the same indigenous actors but seen as an effective management tool by increasing numbers of local officials, resource managers, foreign ethnographers, and more recently ecologists. Urban fire, however, was almost always detrimental, a major cause of property loss and disruption to commerce if located in the city proper, and a potential threat if allowed to spread from the surrounding slums to the center. Only rarely have urban elites and administrators perceived fire as possessing beneficial qualities that might offset its destructive impact. During the global resurgence of plague in the 1890s, buildings or even entire neighborhoods were deliberately set alight by municipal authorities in attempts to destroy the *pestis* bacilli. British health

officials torched some six acres of the Taipingshan district of Hong Kong in 1894, and US authorities burned down the Chinatown district of Honolulu in 1900. Contrary to widely held perceptions, the wholesale burning of buildings had not been resorted to prior to the late nineteenth century or, at least, not as a deliberate measure, although the Great Fire is believed to have checked plague in London.³³

The other purposeful use of fire in an urban area was as a weapon of war to disrupt industrial production and destroy civilian morale. Firebombing was largely an innovation of the later years of World War II. The most destructive were the incendiary raids carried out by Allied air forces on German and Japanese cities, beginning with the raid on Hamburg in July 1943 that destroyed nearly half the city and reaching a climax with the attack on the Japanese capital in March 1945 that burned down forty-one square kilometers of the urban area. The congested, highly combustible, mainly working-class neighborhoods of inner cities like Dresden and Tokyo were largely burned to the ground. The intensity of the consequent conflagrations generated some of the worst firestorms in history.³⁴

Fire, however, is also a catalyst of change, an inadvertent driver of urban renewal and regeneration. In the most general sense, fire affects architectural style, particularly the materials used in buildings and the rules governing urban planning. Thus in Slovenia, a regulation from 1524 forbade the erection of timber buildings in Ljubljana, while the distinctive style of traditional domestic architecture in Japan was another form of adaptation that allowed for the rapid disassembly of all but the structure's framework.³⁵ In many cities like Manila, though, fire was only one of many hazards that influenced construction.³⁶ Fire also influenced urban centers in a very fundamental way in the sense that what had been destroyed needed to be rebuilt. This periodic clearing way of "old growth" could facilitate innovation and change, especially if reconstruction was entrusted to central authority. The central cityscape of today's Lisbon owes much to the extent of the damage caused by the great earthquake and fire of 1755 and the urban vision of the Marquês de Pombal.³⁷ And finally there is nothing like a major conflagration or two to help focus people's minds on the need to reform existing practices, improve the city's firefighting capabilities, and find better ways to share the losses. Building codes, emergency services, and insurance are all innovations if not born out of the flames at least warmed by their heat.³⁸ Not that there was necessarily a direct correlation between fire and reform: there were many barriers that tempered and impeded change, although ultimately fire today in the city is a less common hazard than it used to be.³⁹

The Politics of Fire

Fire is not only a hazard, a resource whose controlled use is indispensable to human habitation, and a catalyst of urban renewal; it is also a highly political phenomenon. The origins, the course, and the consequences of urban conflagrations can legitimize and strengthen as well as undermine power. Fires can shape and alter the way a city is governed, and they can be utilized to play off one part of the population against another. Measures to fight and cope with fire, such as crucial firefighting decisions or the distribution of aid after a disaster, reflect the social order. Finally, the politics of fire includes willful destruction, including not only fires used by militaries to damage infrastructure and demoralize an enemy, but also arson committed by the disenfranchised within the city.

The urban fire hazard has been governed by various instruments and methods and contained by a wide array of public and private actors, encompassing not only voluntary and professional firefighting associations but also night watchmen, market inspectors, and insurance agents. In addition to institutions and individuals, regulations and discourses have significantly contributed to the politics of preparedness. Inhabitants of early modern European cities were constantly reminded of their duties regarding the fire hazard by specific fire orders. Often listing up to fifty different points on thirty or more pages, these documents were regularly read aloud in public places. Citizens were expected to adhere to these rules, keep a printed copy at home, and present it upon request. In some cases, punishments for violators of the code were explicitly stated.⁴⁰ Authorities in cities that were not on the Western European path of “brickification” were no less assiduous in exhorting urban populations to guard against fire. Fire was the second most common subject of edicts issued by the Tokugawa regime in Edo, for example.

Because of the vulnerability of many cities to fire—especially “tinderbox” cities like Edo, Hankow, or Istanbul—it often took only a spark to trigger a severe conflagration.⁴¹ Wind, flammable building materials, and the dense concentration of houses would do the rest. The motives for setting a building on fire (or for tolerating a fire’s spread) vary, ranging from personal vendettas to insurance fraud. The latter turned out to be especially problematic in highly industrialized countries. Arson “for profit . . . committed by or at the orders of the owner of a building, in order to obtain insurance payments,” became a new kind of fire.⁴² In countries where the government subsidized the insurance industry against losses, arson could even become a “way of life.” For landlords, it proved gainful to destroy their property and thereby transform urban

space for profitable future use. Cleveland witnessed the staggering number of 1,593 arson incidents in 1974 and 1,976 incidents in 1975. From November 1970 through September 1973, fire insurance underwriters in this city paid out \$2,386,457.⁴³

Wherever arson is suspected, however, the issue of assigning responsibility enters. Minorities have often been blamed and persecuted for starting a fire. After devastating fires in Cairo in 1321, for example, Christians bore the brunt of the population's wrath after several individuals were caught with incendiary devices.⁴⁴ In Istanbul, the fire of 1660 was linked most of all to the Jewish population of the city. Jews, as a result, had their property expropriated and were forbidden to rebuild their houses and synagogues in the burned-down districts. For the Valide sultan, the fire was a welcome opportunity to consolidate power in the midst of an economic and social crisis.⁴⁵ In European cities, too, accusations of arson were often aimed at "social scapegoats, such as Jews, Gypsies, vagabonds or other people on the margins of early modern society." At the same time, these accusations also posed a religious problem, since they ascribed agency to human beings, which was difficult to reconcile with the notion of fire as God's punishment.⁴⁶

The politics of fire are also evident in the reconstruction efforts (or the lack thereof) after a conflagration. In many instances, large fires were a welcome opportunity for local, regional, and even national rulers to redesign a city. By temporarily eliminating the physical barriers to "urban renewal," fires created many possibilities to change the urban fabric, in projects that otherwise would have been much more difficult to realize. Sometimes the rapid physical transformation of a city by fire was even appreciated by its inhabitants. The citizens of Chicago, Baltimore, and Boston, for example, welcomed the destruction of their cities by fire in the late nineteenth and the early twentieth centuries, as Christine Meisner Rosen has pointed out. In all three cases "they achieved a number of important advances in business and residential location patterns, as well as improvements in building design, street layouts, water systems, and other things, changes that went a considerable distance toward ameliorating long-standing environmental problems."⁴⁷

In many cases, fires triggered fundamental changes with regard not only to the physical but also to the social composition of a city. The history of urban conflagrations clearly shows that the social risk of fire was spread unevenly among different segments of the population. In New York, for example, certain parts of the population benefited from the vast increase in land prices after the fire of 1835, while others suffered from skyrocketing rents and a net decline in real wages.⁴⁸ It was common practice in many cities for municipal governments

to expropriate private landholders in fire-affected areas and then sell the land at much higher prices.⁴⁹ The frequent fires in the kampongs of postcolonial Southeast Asia were an integral part of development and growth that imbued “slum clearance” projects with a sense of urgency and inevitability. Rulers could thus legitimize massive resettlement projects and point to the beneficial effects of modernization programs, as was the case in Singapore in 1961.⁵⁰ The relocation of poor and vulnerable sections of society after a disastrous event also served to rationalize urban space by making the population more legible and easier to control in the new quarters.

Reconstruction after a fire is not just a struggle against the devastating consequences of the flames but also a fight against the imagery of chaos and lawlessness. Fire narratives, such as the well-known story of a city’s rise from the ashes, smooth over the violent and unjust aspects of reconstruction.⁵¹ Mandatory resettlement after a fire, for example, can be portrayed as part of a larger modernization program, while traditional ways of living and of rebuilding after a fire are discredited as weak and vulnerable.⁵² Together with such discourses of modernization and triumph over backwardness, command over the actual resources of relief—both material and cultural—can bolster political power and legitimacy after a fire. Where disaster relief from the state is lacking, religious or political parties have filled the void by offering help to fire victims. In turn, these groups seek to exploit the social capital gained from disaster aid by extending patronage and by expanding their power bases. By the same token, the wild and intense imagery of a conflagration is an effect sought by those who start fires as a means of protest. Therefore, the fires that usually accompany riots, for example, not only destroy; they also express.⁵³

In the twentieth century, new technologies of fire prevention and suppression increasingly removed the battle with uncontrolled fire from the hands of ordinary citizens. At the same time, new actors emerged in the politics of fire, including mass-based political parties, media organizations, international aid groups, and guerrilla armies. In a growing number of megacities, where state authority has been weak and urban development has occurred with only limited planning control, fire and postfire recovery have become important sites of competition between multiple nonstate actors. Yet, as the case of Cleveland in the 1960s and 1970s shows (along with subsequent cases in cities such as Los Angeles and Detroit), even in the so-called first world, fire has continued to be a weapon of the weak, used to throw the social order into disarray and register protests that would otherwise go unheard, as well as a tool of elites, used to manipulate the urban poor and to reconfigure physical and social space in the city to serve their own interests.

Historically, the most drastic and arguably the most consequential politicization of fire has occurred during violent conflicts, most importantly during wartime. Cities have proved to be especially vulnerable to the devastating application of fire as a tool of war. During World War II the worst casualties of warfare stemmed from the systematic aerial assaults on cities. Even the atomic bombs dropped on Hiroshima and Nagasaki in August 1945 wrought their greatest damage by the fires they triggered.⁵⁴ If firefighting in the midst of an international air war proved to be an almost impossible task, firefighting in a civil war can be even more difficult. Arriving at the scene is a huge challenge in the first place due to roadblocks and other physical barriers between the front lines. More importantly, firefighters run the constant risk of being injured or killed accidentally by the actual fighting or of being kidnapped because they are easily recognizable by their uniforms. Some of the issues surrounding fire in the context of civil war are discussed in Sofia Shwayri's chapter on Beirut in this volume. The broader relationship between urban fire and warfare as a whole deserves a volume in its own right.

The existing historiography that deals with urban fire purely as an event rather than also as a process fails to recognize its proper significance and the importance of modeling "urban fire regimes" to complement their forest counterpart. This reassessment needs to be made if for no other reason than that half the world's population already live in cities and the trends indicate that more will do so in the decades to come, especially in developing countries. Indeed, Mike Davis suggests that our world will become a "planet of slums," sprawling conurbations of informal settlement built from scavenged materials and the detritus of consumer society.⁵⁵ The flammable cities of the past may prove to be forebears of the flammable cities of the future, and the much touted "fire gap" more a temporal phenomenon than a spatial one.

NOTES

1. See Martin V. Melosi, "Humans, Cities, and Nature: How Do Cities Fit in the Material World?," *Journal of Urban History* 36, no. 1 (2010): 3–21.

2. See Stephen Pyne, afterword to this volume.

3. Paul M. Hohenberg and Lynn Hollen Lees, *The Making of Urban Europe, 1000–1950* (Cambridge, MA: Harvard University Press, 1985); Johan Goudsblom also observes this tendency in the historiography of cities.

4. Louis Mumford, *The City in History: Its Origins, Its Transformations, and Its Prospects* (New York: Harcourt, Brace and World, 1961), 283.

5. Zeynep Çelik, *The Remaking of Istanbul: Portrait of an Ottoman City in the Nineteenth Century* (Seattle: University of Washington Press, 1986), 52–67.
6. William T. Rowe, *Hankow: Conflict and Community in a Chinese City, 1796–1895* (Stanford, CA: Stanford University Press, 1989), 92–94, 158–68, 220, 346.
7. See William Kelly, “Incendiary Actions: Fires and Firefighting in the Shogun’s Capital and the People’s City,” in *Edo and Paris: Urban Life and the State in the Early Modern Era*, ed. James L. McClain, John M. Merriman, and Ugawa Kaoru (Ithaca, NY: Cornell University Press, 1994), 310–31.
8. Pearson notes that construction in wood actually continued to increase in London until about 1800. Robin Pearson, *Insuring the Industrial Revolution: Fire Insurance in Great Britain, 1700–1850* (Aldershot, UK: Ashgate, 2004), 60–61, 85.
9. See Stephen Pyne, *Fire in America: A Cultural History of Wildland and Rural Fire* (Seattle: University of Washington Press, 1997); *Fire: A Brief History* (Seattle: University of Washington Press, 2001); *World Fire: The Culture of Fire on Earth* (New York: Holt, 1995).
10. Johan Goudsblom, *Fire and Civilization* (London: Allen Lane, 1992).
11. Cathy A. Frierson, *All Russia Is Burning: A Cultural History of Fire and Arson in Late Imperial Russia* (Seattle: University of Washington Press, 2002). Frierson turns to examination of urban imperial Russia in her contribution to this volume.
12. Christine Meisner Rosen, *The Limits of Power: Great Fires and the Process of City Growth in America* (Cambridge: Cambridge University Press, 1986).
13. E. L. Jones, S. Porter, and M. Turner, *A Gazetteer of English Urban Fire Disasters, 1500–1900*, Historical Geography Series 13 (Norwich: Geo Books, 1984); L. E. Frost and E. L. Jones, “The Fire Gap and the Greater Durability of Nineteenth-Century Cities,” *Planning Perspectives* 4 (1989): 333–47.
14. Lionel Frost, “Coping in Their Own Way: Asian Cities and the Problem of Fires,” *Urban History* 24, no. 1 (1997): 5–16. See Sand and Wills, this volume. The prevalence of traits that Frost imputes to Asian cities among preindustrial wood-built cities worldwide and the wide range of construction materials and patterns of urban management within Asia both throw doubt on the utility of identifying the patterns he describes as being specific to Asian cities. “Asia” is itself, of course, a problematic term, which has designated different geographical regions in different eras.
15. Amy S. Greenberg, *Cause for Alarm: The Volunteer Fire Department in the Nineteenth-Century City* (Princeton, NJ: Princeton University Press, 1998). Greenberg’s contribution to this volume reveals a sharply contrasting situation in Mexico. See also Mark Tebeau, *Eating Smoke: Fire in Urban America, 1800–1950* (Baltimore: Johns Hopkins University Press, 2003); Paul Robert Lyons, *Fire in America!* (Boston: National Fire Protection Association, 1976); and Shane Ewen, *Fighting Fires: Creating the British Fire Service, 1800–1978* (Basingstoke, UK: Palgrave Macmillan, 2010).
16. It is also noteworthy that these developments occurred before telegraphy and screw-driven steamships ushered in the modern age of global communications and trade.
17. Goudsblom notes that the Code of Hammurabi makes no reference to

fire-prevention measures and suggests this may indicate that fire did not pose a problem. Goudsblom, *Fire and Civilization*, 66–67.

18. K. H. Oedekoven, “Forest History of the Near East,” *Unasylyva*, no. 68 (1963), available through FAO Document Repository: <http://www.fao.org/docrep/e3200e/e3200e03.htm>.

19. Goudsblom, *Fire and Civilization*, 114.

20. See Carole Shammas, introduction to *Investing in Permanence: The Empires of Trade and the Built Environment*, ed. Carole Shammas (Leiden: Brill, forthcoming).

21. See J. L. Price, *Holland and the Dutch Republic in the Seventeenth Century: The Politics of Particularism* (Oxford: Clarendon Press, 1994), 46, 7–56; Jan de Vries and Ad van der Woude, *The First Modern Economy: Success, Failure, and Perseverance of the Dutch Economy, 1500–1815* (Cambridge: Cambridge University Press, 1997). Simon Schama distinguishes the European historical figure generically called “bourgeois” from the Dutch burgher, for whom civic duties took moral precedence and the pursuit of wealth was always accompanied by a sense of ambiguity. Simon Schama, *The Embarrassment of Riches: An Interpretation of Dutch Culture in the Golden Age* (New York: Knopf, 1987), 7. For our purposes, however, the relative moral value of civic duties and money is less important than the fact that the two came together in the capitals of European trading empires like the Amsterdam of the Dutch Republic.

22. Anthony King, *Urbanism, Colonialism, and the World-Economy: Cultural and Spatial Foundations of the World Urban System* (London: Routledge, 1990), 30–31.

23. Pyne, *Fire: A Brief History*, 102.

24. Martin Murray, “Fire and Ice: Unnatural Disasters and the Disposable Urban Poor in Post-Apartheid Johannesburg,” *International Journal of Urban and Regional Research* 33, no. 1 (2009): 184.

25. *World Disasters Report: Focus on Early Warning, Early Action* (Geneva: International Federation of Red Cross and Red Crescent Societies, 2009), 172; Mike Davis, *Ecology of Fear: Los Angeles and the Imagination of Disaster* (London: Picador, 2000), 143.

26. Pyne, *Fire: A Brief History*, 6.

27. Christian Kull, *Isle of Fire: The Political Ecology of Landscape Burning in Madagascar* (Chicago: University of Chicago Press, 2004), 64.

28. Domen Kušar, “The Impact of Natural Disasters on Buildings’ Architectural Styles,” *Acta Geographica Slovenica* 48, no. 1 (2008): 96. See also Uwe Lübken and Christof Mauch, eds., “Uncertain Environments: Natural Hazards, Risk, and Insurance in Historical Perspective,” special issue, *Environment and History* 17, no. 1 (2011).

29. Terry Cannon, “Vulnerability Analysis and the Explanation of ‘Natural’ Disasters,” in *Disasters, Development and Environment*, ed. Ann Varley (Chichester: J. Wiley, 1994), 14–15, 19.

30. Pyne, *Fire: A Brief History*, 106–12. On the “fire gap,” see Frost and Jones, “The Fire Gap and the Greater Durability of Nineteenth Century Cities.” On WUI, see Stephen Pyne, “Spark and Sprawl: A World Tour,” *Forest History Today* (Fall 2008): 4–10.

31. Mike Davis, *Planet of Slums* (London: Verso, 2006), 20–49.

32. Frost, "Coping in Their Own Way."
33. James C. Mohr, *Plague and Fire: Battling Black Death and the 1900 Burning of Honolulu's Chinatown* (New York: Oxford University Press, 2005), 83–97.
34. Kenneth Hewitt, "Place Annihilation: Area Bombing and the Fate of Urban Places," *Annals of the Association of American Geographers* 73, no. 2 (1983): 263–69, 271–74. See also Thomas Searle, "'It Made a Lot of Sense to Kill Skilled Workers': The Fire-bombing of Tokyo in March 1945," *Journal of Military History* 66, no. 1 (2002): 103–34.
35. Kušar, "Impact of Natural Disasters," 96; Sand and Wills, this volume.
36. Bankoff, this volume.
37. Molesky, this volume; John Mullin, "The Reconstruction of Lisbon following the Earthquake of 1755: A Study in Despotic Planning," *Planning Perspectives* 7, no. 2 (1992): 157–79.
38. Martland, this volume; Wermiel, this volume; Pearson, *Insuring the Industrial Revolution*.
39. Rosen, *Limits of Power*.
40. Marie Luisa Allemeyer, "Profane Hazard or Divine Judgment? Coping with Urban Fire in the 17th Century," *Historical Social Research* 32, no. 3 (2007): 145–68, here 152–53.
41. See Rowe, *Hankow*; Frost, "Coping in Their Own Way," 9. See also Zwierlein, Sand and Wills, this volume.
42. Goudsblom, *Fire and Civilization*, 181.
43. *Plain Dealer*, April 7, 1975. See Kerr, this volume.
44. Anna Akasoy, "The Man-Made Disaster: Fire in Cities in the Medieval Middle East," *Historical Social Research* 32, no. 3 (2007): 75–87, here 83–84.
45. Marc David Baer, "The Great Fire of 1660 and the Islamization of Christian and Jewish Space in Istanbul," *International Middle East Studies* 36, no. 2 (2004): 159–81, here 160.
46. Allemeyer, "Profane Hazard or Divine Judgment?," 160–61.
47. Rosen, *Limits of Power*, 11. On Hamburg, see Schubert, this volume.
48. Kevin Rozario, *The Culture of Calamity: Disaster and the Making of Modern America* (Chicago: University of Chicago Press, 2007), 81.
49. Such was the case, for example, in the Finnish town of Turku after the fire of 1827 and in Hamburg after the fire of 1842. See Marjatta Hietala, "Fear of Fires: Impact of Fires on Towns in Finland at the Beginning of the 19th Century," in *Cities and Catastrophes: Coping with Emergency in European History*, ed. Geneviève Massard-Guilbaud, Harold L. Platt, and Dieter Schott (Frankfurt am Main: P. Lang, 2002), 141–62; see also Schubert, this volume.
50. See Kwak, this volume.
51. See Carl S. Smith, *Urban Disorder and the Shape of Belief: The Great Chicago Fire, the Haymarket Bomb, and the Model Town of Pullman* (Chicago: University of Chicago Press, 1995).
52. See Kwak, this volume.

53. David Wyatt, *Five Fires: Race, Catastrophe, and the Shaping of California* (Reading, MA: Addison-Wesley, 1997), 9.

54. Pyne, *Fire: A Brief History*, 134. See also the critical review of Jörg Friedrich's controversial book *Der Brand: Deutschland im Bombenkrieg, 1940–1945* (Berlin: Propyläen, 2002), by Ralf Blank, *Sehepunkte* 2, no. 12 (2002), <http://www.sehepunkte.de/2002/12/2675.html>.

55. Davis, *Planet of Slums*.



PART 1

CITIES AS FIRE REGIMES

Jan van der Heyden and the Origins of Modern Firefighting

*Art and Technology
in Seventeenth-Century Amsterdam*

SUSAN DONAHUE KURETSKY

**In memory of Fred Cheney,
Chief of the Volunteer Fire Department,
Clinton, New York,
1944–46**

When fire broke out in a London baker's shop in Pudding Lane in the early morning of September 2, 1666, it soon expanded into the vast conflagration known as the Great Fire of London. The loss of historic sites by fire remained frequent in the seventeenth century, especially when a blaze began in darkness, as in the devastation of the Palais de Justice in Paris on March 6, 1618, or the destruction of the Amsterdam Town Hall on July 7, 1652. Even today our capacity to control this most volatile of the four elements remains shaky, although more-effective strategies of firefighting evolved in the late seventeenth century, launching an age of improved technology and administrative organization.

Jan van der Heyden (1637–1712), an inspired inventor and administrator who served as fire chief of Amsterdam, can be credited with these innovations. Equally talented as an artist, he published an illustrated treatise in 1690, showcasing new strategies for saving cities by recording local conflagrations. Van der Heyden's *Description of Fire Engines with Water Hoses and the Method of Fighting Fires now used in Amsterdam*, the founding document in the history of modern firefighting, fosters understanding of an early modern era when traditional moral philosophies were being challenged by empirical science and practical invention.¹

Through verbal and visual descriptions of major Amsterdam fires, the *Fire Hose Book* evokes contemporary events with journalistic immediacy. Captioned in both French and Dutch (the text is Dutch), the illustrations suggest that the author intended his innovations to circulate to an international audience.

Van der Heyden's political, religious, and cultural milieu encouraged technological innovation. Energetic and open-minded, the Dutch had won independence from Hapsburg rule in the early seventeenth century, becoming an officially Protestant nation where emphasis on individual literacy and interpretation of the Bible promoted independence of thought. At the same time, minimal censorship encouraged intellectual inquiry. Amsterdam, the commercial hub of the republic, became its publishing center, attracting scientists, scholars, and philosophers from all over Europe. In Van der Heyden's time the Dutch global empire, administered in Amsterdam, circled the world through a network of exploring and trading ships that made this small nation the leading economic power in the world. At home patriotic pride, combined with growing concentrations of wealth, fostered development of the clean and beautiful towns so admired by visitors to the Dutch provinces.

Because this bourgeois, mercantile society centered on home and family, structures that housed a Dutch citizen's private and civic life were deeply valued and lovingly maintained. It is therefore not surprising that Van der Heyden's inventions made their appearance in this time and place or that his paintings focus on local architecture. Son of a Dutch Mennonite family that established a mirror manufacturing business in Amsterdam, he studied with a glass engraver but went on to paint meticulously detailed cityscapes in oil. His depictions of Amsterdam's streets, buildings, and waterways coincided with a construction boom in a city whose population doubled between 1600 and 1670, facilitated by investments in public buildings and elegant townhouses along the canals.

The biggest Amsterdam construction project of the period, touted as the Eighth Wonder of the World, was Jacob van Campen's neoclassical Town Hall (1648–55), now the Royal Palace, which stood near the Van der Heyden mirror factory. Jan would later recall that as a fifteen-year-old boy he had witnessed the conflagration on the night of July 7, 1652, which destroyed the Old Town Hall.² This scene appears as a dramatic double-page illustration (fig. 1.1) in his *Fire Hose Book*, where the building's central tower (the burgomasters' chamber) becomes a colossal torch, filling the sky with smoke and illuminating nearby houses and crowds in the square. His eyewitness description of what he termed "the first fire we can recall" laments how even under advantageous circumstances (the building was stone rather than wood, the square was spacious, and the helpers both numerous and diligent) the Town Hall fire was so uncontrollable that "money from the exchange was melted into great lumps."³



Figure 1.1. The burning of the Old Amsterdam Town Hall on July 7, 1652. (Etching from Jan van der Heyden's *Fire Hose Book*, Amsterdam, 1690, plate 3. Reproduced by permission of the New York Public Library, Astor Lenox and Tilden Foundations, Rare Books Division.)

Observing a major building under construction (and the burning of its predecessor) may have precipitated Van der Heyden's interest in preserving his local environment and even the distinctive intactness of his city views. Thus his *View of the Dam with the New Town Hall* in the Louvre, Paris, depicts a sunlit town square, featuring the foreshortened facade of the Town Hall at the left with its tall cupola and rows of pilastered windows.⁴ Exquisite in its finish and delicacy of lighting, the scene displays a fineness of touch (surely assisted by a magnifying lens) that seems to capture every stone and brick and preserve them in perfect suspension of time and place. Here local inhabitants go about their daily business in idyllic civic well-being amid perfectly preserved old and new architecture.

By 1668, when he depicted the new Town Hall, Van der Heyden was involved in improving the safety of a rapidly expanding city. His 1668 proposal to the Amsterdam municipality for new street lighting, informed by his family's experience with mirror manufacture, described glass lanterns fitted with mirrors and reservoirs for oil and mounted on twelve-foot poles placed 150 feet apart.⁵ Interestingly, the major argument for new street lighting was not the danger of

spreading fire from open torches but concern about the role of darkness in burglaries and pedestrian drownings in unlighted canals.⁶ More than 2,500 of Van der Heyden's lamps materialized on the streets of Amsterdam. On September 18, 1669, he became director of night lanterns, an administrative responsibility that included servicing and fueling the lamps. Following publication of his manual on street lighting in 1679, cities throughout Europe and America would produce variants of Van der Heyden's invention, which remained in use until gas lighting was developed around 1800 and carbon arc electric light around 1880.⁷

With his invention of enclosed night lighting, Van der Heyden removed one significant hazard from the streets of Amsterdam, but control of disastrous blazes ignited by lightning strikes or human carelessness remained primitive, as in the Great Fire of London of 1666. The London fire attracted close attention in the Dutch republic largely because the second Anglo-Dutch war was then at its height, but also because London's fate could so easily have been Amsterdam's.⁸ This conflagration, which was widely reported, extensively illustrated, and inspired numerous poems, sermons, and eyewitness reports, occurred only two years before Van der Heyden's proposal for safe street lighting was submitted and just five years before Jan and his brother, Nicolaas, were awarded patents for their development of a new "snakepump" (*slangpomp*), a device to pump water under constant pressure through long hoses directed toward or carried into burning buildings. In the same year they patented a new waterwheel to generate greater volumes of water for battling blazes.

That the London fire helped initiate Van der Heyden's inventions seems obvious, especially as that historic conflagration was evidently still in his mind, decades later, when he was preparing his treatise on firefighting. His elaborate drawing, datable by costume to around 1690, shows a large London square with the Royal Stock Exchange in the background as a stage for demonstration of his new pumps and hoses.⁹ The huge commemorative column at the right is Christopher Wren's and Robert Hooke's monument, completed in 1677, to the Great Fire. Significantly, this drawing exposes the inner stairway that made this tall structure a watchtower for fire control.

The lamentable state of firefighting before Van der Heyden is overwhelmingly evident in accounts of the London conflagration, which by the end of four days—accelerated by high winds and a long, dry summer—had wrought more destruction than would the Blitz, destroying some 436 acres of the venerable city center: 13,200 houses, 87 churches, along with Saint Paul's Cathedral, and all the city's major commercial and municipal buildings.¹⁰ Like other large cities of this period, London was clogged with wooden or timber-framed structures

crammed into narrow, cobblestone streets whose houses and places of business were heated by open fires and illuminated by candles. Combustible materials, carelessly stored, contributed to frequent accidents, yet organized fire brigades were nonexistent, water sources were inadequate or inaccessible, and equipment for battling blazes ineffective.¹¹

Aside from ladders and hooks or chains to pull down burning structures, buckets, scoops, and “squirts” were the major tools for extinguishing fires, along with tarpaulins saturated with water and thrown over sections of a burning structure. Buckets were deployed by lines of men passing along these leather containers to and from a water source, while wooden scoops or shovels might be used to throw water or earth onto burning embers. Larger metal squirts or syringes, which could be mounted on wheels, required at least two men: one or more to hold or direct the device and one to push the plunger. By the early seventeenth century, water pumps were being developed by German and French engineers, which featured wooden tubs mounted on sledges with handles to pump the water and metal nozzles to expel it onto burning buildings.¹²

But these apparatuses were heavy and unwieldy, water pressure was weak and intermittent, and supplying the tubs with water was problematic because of the shortness of their metal delivery pipes. In any case, water could not be ejected far, even when equipment was brought dangerously close to a fire. Thus Van der Heyden’s flexible, snakelike hoses, made of leather and sewn with linen or hemp thread, would prove to be the most innovative and influential feature of his new system.¹³ The image of a snake became his trademark, forming the serpentine railings of the building at 5 Koestraat, Amsterdam, which became in 1680 his residence and factory for production of the new equipment. His fire engines displayed the same logo.

By the time Van der Heyden published his treatise on firefighting in 1690, he had witnessed eighty-one Amsterdam fires, while developing a radically new administrative organization after he and his brother, Nicolas, a hydraulic engineer, had become joint fire chiefs of Amsterdam in 1672. Night watchmen, the lamplighter corps (also under his supervision), and volunteer firemen assigned to each city district were thoroughly trained and drilled in use of the new equipment. As illustrated in one of the preparatory drawings for his *Fire Hose Book* (fig. 1.2), the lightweight, easily maneuverable pumps (fire engines) had air chambers that produced constant pressure, greatly increasing the volume of available water, without bucket brigades, that could be aimed farther and more precisely.

Hoses sucking water directly from the canals were connected to portable pumps, the earliest of which were wheel-less and attached to poles so that they

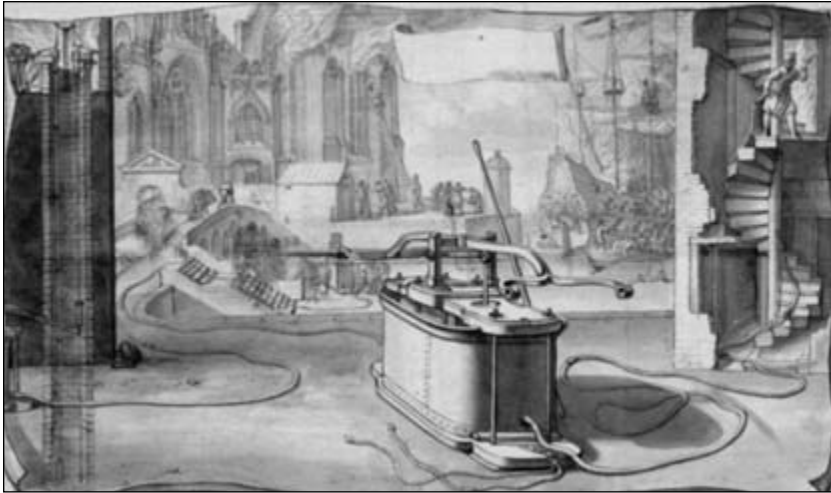


Figure 1.2. Jan van der Heyden, *Demonstration of Firefighting Equipment*, ca. 1690, pen and wash drawing. (© Trustees of the British Museum, London.)

could be carried by two men, or mounted in boats and barges within Amsterdam's canal network. Fabricated of waterproofed sailcloth, these suction hoses brought water to a bag elevated on a trestle at the water's edge and thence to a pipe at one end of the pump, while a leather outtake pressure hose at its other end could be carried up narrow stairways and into a building's interior like a long, flexible snake (a length of one hundred feet was recommended). Additional, smaller suction pumps were employed for fires at greater distances from the water source.¹⁴

Historians of firefighting will be disappointed that Van der Heyden's treatise does not explain how his hoses or pumps were made and lacks construction diagrams. This omission, which he explains in the postscript to his treatise as a safeguard against unsafe imitations, probably also reflected his reluctance to encourage competitors and his wish to promote purchase of his own system. Indeed, with its dramatic texts and vivid illustrations, the treatise must have been an effective advertisement for his product, which was widely sold outside the Netherlands.¹⁵ William of Orange brought Dutch fire engines to England when he came to the throne in 1689, while Peter the Great ordered them for Russia after he visited the Amsterdam factory in 1698 during his tour of Holland. He even had the *Fire Hose Book* translated into Russian. Not surprisingly, Van der Heyden became one of the wealthiest citizens of Amsterdam. Although the



Figure 1.3. New firefighting equipment deployed within a burning townhouse. (Etching from Jan van der Heyden's *Fire Hose Book*, 1690, plate 2. Reproduced by permission of the New York Public Library, Astor Lenox and Tilden Foundations, Rare Books Division.)

extent to which his equipment was purchased by municipalities outside the Netherlands remains largely unknown, it is clear that his innovations were enthusiastically copied by European and American engineers, even for use on merchant ships and warships, where lightweight, easily maneuvered equipment was essential.¹⁶

Van der Heyden's treatise establishes the value of his invention with authoritative before-and-after demonstrations, both verbal and visual, to explain the faults of the old system and how each is addressed by his new apparatus. Emphasizing the importance of immediate response, maneuverability of men and equipment in narrow streets, and the necessity to obtain quantities of water and accurately direct it over distance, Van der Heyden reminds the reader how easily buckets leak and spill and how quickly water is evaporated by heat. The first of his ten depictions of a conflagration in progress is one of the most stunning images of fire ever made (fig. 1.3).

This nocturnal scene, recognizably Dutch, represents no particular place or event but is a generic demonstration of the new approach to firefighting. A city square, brilliantly illuminated by a large burning house, is seen in a cutaway

view recalling Dutch dollhouses of this period made for wealthy women who enjoyed lavish miniature displays of furniture and room decorations. In elaborating such interior views, Van der Heyden could show that fire not only destroys buildings but also consumes cherished possessions within.

Accordingly, this fine dwelling displays all the material comforts of the unseen family who lived within its burning rooms. A large *kussenkast* (pillow chest) stands in an upper room at the left, while pendant portraits of a husband and wife hang in the chamber to the right. In the room below, where a little girl's dress (just beginning to burn) lies poignantly discarded on a chair, hangs a painting of a fire representing Aeneas carrying his father Anchises from burning Troy.¹⁷ The study on the first floor at the left displays the type of expensive double-hemisphere map of the world produced by the celebrated Amsterdam cartographer Joan Blaeu. The inclusion of this detail cannot be incidental because later in his treatise Van der Heyden describes an unsuccessfully battled fire that erupted on the frigid night of February 22, 1672 (the outdated fire engines froze, and his new pressure hose was not yet available) and destroyed the great Blaeu printing house "so completely . . . that even copper plates, standing in some corner, melted like lead."¹⁸

As a technical illustration, this print, etched and engraved from careful preparatory drawings and lettered to draw attention to points of interest, immediately convinces the viewer that a new world of firefighting has arrived. From all sides powerful jets of water, pumped from the ground, are directed upward into the flaming houses, as firemen with long hoses swarm onto ladders and rooftops. Within the central structure, they clamber up narrow stairways and rush into rooms at all levels, even the attic and the basement, where the fire may have begun in the storage containers at the right.

Comparison of this scene to that of the burning of the Old Town Hall in 1652 (fig. 1.1), mentioned above, is telling, for there the rushing crowds and bucket brigades are obviously inadequate to contain a blaze that is visibly turning the edifice into a ruin, even as a boat on the foreground canal arrives with more fire buckets. The disciplined, tightly organized procedures in fighting fire with new equipment may not save the owners' possessions, but the containing walls of the affected buildings will clearly survive with nearby structures spared. The importance of immediately addressing a fire from *within* a building, which Van der Heyden's new hoses made possible, was and remains of paramount importance in such rapid-developing situations. As he stated, "Now a fire can be extinguished early in its life, often in the first room in which it originates. This almost completely prevents not only most damage, but also unrest and fright among the inhabitants, lootings and other disorders which fires inevitably

bring.”¹⁹ Examining Van der Heyden’s depictions of the burning townhouse and the fire in the Old Town Hall reveals the great differences between the old and the new systems of firefighting through the artist’s choice of descriptive imagery and his artful way of manipulating it. Irregular shapes dominate the view of the Old Town Hall, where the burning building, smaller in relation to the foreground canal, appears beyond help; even three double lines of bucket brigades will clearly not save it. The implacable progress of a fire that reduced a grand structure to rubble overnight is also revealed from left to right, beginning with the still-intact Court of Justice wing (the building’s medieval core), where rescuers on ladders attempt to reach those trapped within, and ending at the right with the gutted ruin of the Discount Bank. By contrast, the cutaway device in the depiction of the townhouse forms a stable grid that accentuates the order and control of the procedures represented. At the same time, sharp diagonals of water jets and massive billows of smoke, black with soot yet absorbing light from the fire, capture the incessant movement and high drama of a battle in progress as battalions of small, active figures methodically infiltrate the scene. Interestingly, all of Van der Heyden’s depictions of fire evoke the brilliance of color even though the print medium can express it only through dark lines on white paper.²⁰ Employing extreme light and dark contrasts with areas of densely worked hatching, the artist silhouettes the darkly inert shapes of solid structures against the radiant, bodiless energy of fire, evoking the wonder and terror of events in which the largest creations of human effort and ingenuity are seen to be under attack by an assailant who always arrives unexpectedly, whose strategy is unpredictable, and who can rarely be vanquished before severe damage or injury has been inflicted.²¹

As a catalog of seventeenth-century Amsterdam fires, the *Fire Hose Book* is of journalistic as well as technological and esthetic interest. The opening of part 2, beginning with the year 1651, observes that many of the author’s original readers would have been directly involved, either as victims or as firefighters, in the events he describes.²² Thus his words and pictures were addressed to actual witnesses (among others) whose memories of these occurrences were still fresh. Since his book covers eighty-one fires but illustrates only twenty, he had to develop a writing style so evocative, yet so exacting, that it could inject believable mental pictures of each fire and its consequences into the minds of readers who had not been present at them, while doing justice to the recollections of those who had.

Any modern journalist would admire the economy and verbal punch of these concise, highly informative reports, which, in many cases, include enumeration of the costs of damage to both the building and its contents. Whenever

possible Van der Heyden included information about where and how the fire began (and in what kind of building), following its progress and describing the attempts to extinguish it, while inventorying which parts of a structure were damaged and which parts were not. In an era before fire insurance, damages were paid by the owner of a building. Van der Heyden's comments indicate how often he discovered human error or lack of oversight as the cause of these conflagrations. The unillustrated discussion of a fire in a grease-rendering plant on the Spui on the night of November 6-7, 1654 (before his new fire engines and hoses became available in 1673), describes a situation caused by habitual negligence, when five adjoining houses burned, along with the factory, even though they fronted on a canal and had an empty lot behind them: "A forgotten candle started the fire in the attic, and when the renderer who by his carelessness had often been in danger, noticed the fire he tried, as he had managed before, to quench the fire by throwing a mattress on top of it. But this time he had the misfortune to slip in the grease; he fell backwards with the mattress and before he could save himself, the fire had taken the upper hand."²³ The human loss and suffering caused by fire are repeatedly acknowledged in Van der Heyden's treatise, nowhere more touchingly than in his dispassionate description of a bakery fire on the night of November 19, 1672, for which he declined to assess damages because the catastrophe was so terrible that both parents and all but one of their children perished as the building burned to the ground:

The fire spread so rapidly that the baker who had just gone to sleep hardly woke up in time to flee with two of his children who were both injured. His wife, who was still in childbed with her newborn baby, and an older girl were left behind, and he ran immediately back into the house to save them. But the fire overwhelmed him in such a manner that neither he nor the rest of his family could come out. Of the wife and baby nothing was found that looked like part of a human body, but remains were found of the man and his little daughter. Even of the two children who were brought out, one died shortly afterwards.²⁴

A turning point in the recognition of the new equipment's effectiveness can be pinpointed to January 12, 1673, when one of Van der Heyden's new fire engines arrived (late) at a furious blaze in an admiralty storehouse for warships and shipping equipment where there was so much combustible material that "the flames lighted up the whole city."²⁵ Haulers with old fire engines were attracted by the sight from all over town, crowding the area with their heavy, ill-functioning equipment. Only after much of the building had collapsed was the single new engine, which none of the bystanders knew how to operate, given its

chance. Burning sheds near the fire and all else within reach of the hose were immediately saved.

During the subsequent transitional period, when few of the new fire engines were available, Van der Heyden continued to catalog outbreaks of fires with increasing frustration about the weight and awkwardness of old apparatuses (even as attempts were made to remodel them) and exasperation at the slowness or dereliction of duty of some of the fire corps. Not until 1682 were they subject to the thorough performance regulations Van der Heyden developed. The importance of clearly articulated procedures as well as viable equipment becomes clear in his account of a fire of October 24, 1678, which broke out at 4:00 a.m. in a grain chandler's shop located next to a brandy tavern on the outskirts of the city.

Confined to bed by illness, neither Van der Heyden nor his son Jan II (who would become his father's partner after Nicolaas van der Heyden's death in 1682) was able to be at the scene to supervise, so the firefighters who arrived first decided to begin drinking in the bar instead of going to fetch the fire engines. They continued drinking even as houses across the street caught fire and the tavern ignited over their heads. Even so, Van der Heyden points out proudly, the arrival of his modern equipment managed to save a number of the buildings in the block, including a wooden barn filled with highly flammable hay.

Van der Heyden's abilities as a journalist and illustrator were matched by his skill as the administrator in charge of training and overseeing Amsterdam's fire brigade. Not until the later nineteenth century did fire companies elsewhere in Europe and in the United States begin to achieve the organization and efficiency made possible by the bylaws and city ordinances he devised for a fire department that was already the largest and the best equipped in Europe.²⁶ In part 3 of the *Fire Hose Book*, the author spells out in the most elaborate and precise detail procedures designed to initiate the fastest and best-organized response to fire within the city's sixty districts, each of which was supervised by two fire masters. The thirty-six firemen in each district were appointed from the local guilds (men accustomed to carrying loads of cargo were often called upon) along with ordinary citizens. One could only evade such service by paying a penalty. Fines were also imposed for tardy arrival or nonappearance at a fire (with higher penalties for night fires), while the first three men to present themselves won bonuses.

Van der Heyden even figured out how to keep track of individual firefighters by issuing numbered badges from one to thirty-six, which the men were required to present to the fire master upon arrival. Regular drills in the use of equipment were held, and each person was assigned to a particular aspect of the work with



Figure 1.4. Fire in the Elandsstraat, July 27, 1679. (Etching from Jan van der Heyden's *Fire Hose Book*, Amsterdam, 1690, plate 7. Reproduced by permission of the New York Public Library, Astor Lenox and Tilden Foundations, Rare Books Division.)

only the most fit and agile allowed to climb ladders and handle hoses. The inhabitants of a burning building could also be fined if they did not immediately run into the street and call out the alarm before anyone else, in order to alert the neighbors and the watchman on the block—a rule designed to discourage a householder's attempt to put out the fire himself or waste precious time trying to save his own possessions. Throughout all parts of Van der Heyden's treatise, two factors in effective fire control are underscored again and again: speed and neighborly collaboration. As he states simply on the first page of his bylaws and ordinances: "Fires which are still small are much easier to put out."²⁷

The largest fire Jan van der Heyden ever encountered, which would become the subject of one of the most spectacular of his double-page illustrations (fig. 1.4), was caused not by human error but by the common natural phenomenon of lightning. The fire began shortly after midnight on July 27, 1679, when a violent storm struck four rows of connected houses between Elands Street (Elandsstraat) and the Elands Canal (Elandsgracht), a highly combustible district in western Amsterdam containing tanneries filled with whale oil and peat. Because the fire, at that time the largest in the city's history, broke out during a hot summer

after a long period of drought, the explosiveness of the blaze was vastly intensified and more than fifty houses were lost before firefighters even reached the scene.

Seen from an elevated viewpoint as if by a fireman standing on a rooftop within the viewer's space, Van der Heyden's depiction of the Elandsstraat disaster reveals a hellish scene unfolding with terrifying ferocity. Above, boiling clouds and raging flames are pulled sideways as if by a strong wind. The blaze was so powerful, Van der Heyden observed in his text, that the sky itself seemed to have caught fire: "The whole sky seemed to be filled with fire, flames and sparks and it lit up the whole city. It seemed that all that was connected together would be consumed, and that it was impossible to staunch."²⁸ At the far right firefighters with long hoses climb onto rooftops to aim their long jets of water, as houses at the far left begin to dissolve into the conflagration. At the center foreground, between buildings blackly silhouetted against the blaze, the viewer looks down into a quiet, undamaged canal with a moored rowboat, demonstrating how Van der Heyden's new equipment was able to save parts of the district from ruin, even in the midst of an inferno.

In the Dutch republic the most destructive accidents and disasters of the century—and the Elandsstraat fire was certainly among them—were sometimes memorialized in drawings or prints with descriptive captions that, like Van der Heyden's texts, attempt to explain the cause and the dimensions of the event and report how people responded to it.²⁹ Yet this was equally a time and place in which both texts and images often served as carriers of moral lessons expressed through an allegorical language that was familiar to the general public.

The fact that fire acquired an especially diverse range of metaphorical meanings in the seventeenth century is not surprising for, as contemporary poems and prints emphasize, it has a complex, many-sided character, only part of which is its capacity to inflict injury and destruction. The cheerfully blazing hearths in allegorical depictions of winter, for example, show fire as an allusion to domestic comfort and ease, while Dutch emblems (printed pictures with moralizing captions and poems) often focus on flaming fireplaces or burning coals and candles as metaphors for love, whose pleasures can enflame feeling or blacken one's purity as smutty cinders do. Most of all, however, the Dutch associated the fire of the flickering candles that lighted their households (and were so often responsible for burning them down) with the transience of earthly existence. Candles consume themselves as they burn, discharging their substance into evanescent smoke—a metaphor for human mortality familiar from the biblical passage: "for my days are consumed like smoke" (Psalm 102:3).

Accidental disasters on a large scale, including fires, were commonly seen by the Dutch as portents or warnings, often poetically attributed to the intervention

of the classical gods or to divine punishment. Thus the elaborately allegorized verses written in 1655 for the dedication of the new Amsterdam Town Hall by the poet Joost van den Vondel (1587–1679) are typical of this period in their invocation of Vulcan, the Roman god of fire, as the culprit held responsible for the burning of the Old Town Hall. Still, the poet observes, not even a fire god could destroy the soul of that beloved building, embodied in the letters, papers, and treasures saved by the loyal citizens who had rushed to the site to retrieve them: “Thus Vulcan left here nothing other than walls, rubble, and stone, after which architecture unfurled her wings wide to build the new phoenix plume and crown of the land rising from the grave and the ashes of the old and entrusted to the enduringness of centuries.”³⁰

By contrast, Van der Heyden’s matter-of-fact account of the same blaze, which notes that “there was hardly time to bring papers and the most valuable items to safety,” invokes no allegorical or supernatural agents, merely stating that the origin of this fire has never been discovered.³¹ The implication in his eyewitness account is that sufficient evidence allows the cause of any event to be analyzed and understood. Thus the focus throughout his treatise remains on empirically experienced problems and on the practical issues involved in resolving them so that measures can be instituted for the future benefit of all. Presenting himself as a pragmatic researcher, he employs a rational tone and methodical collection of evidence that find their closest parallels in Dutch scientific literature of this period, such as writings by Christiaan Huygens (1629–95) on the behavior of light or the measuring of time.

Van der Heyden’s solidly grounded, scientific spirit is evident in the substantial attention he gives to descriptions and images recording the aftermath of the events he recounts, for here the material evidence could be closely examined and analyzed and here the consequences of fire were exposed for all to see. In the latter part of his treatise the reader discovers views of what remained after various blazes had been extinguished (fig. 1.5), in some cases juxtaposed with depictions of the same buildings on fire (fig. 1.6). If these quiet aftermath scenes lack the excitement of conflagrations, they have a powerful effect all their own. Unobscured by flames and smoke or a nocturnal ambience, the remains of these structures, seen in broad daylight, express survival as much as damage and loss. Such is Van der Heyden’s depiction of what was left the day after a violent blaze that had broken out in a highly combustible industrial area of northeastern Amsterdam on the night of June 24, 1680. There, three interconnected buildings of a factory filled with tar and rope ignited and lit up the night sky.³²



Figure 1.5. Aftermath of the fire in the Amsterdam rope works. (Etching from Jan van der Heyden's *Fire Hose Book*, 1690, plate 9. Reproduced by permission of the New York Public Library, Astor Lenox and Tilden Foundations, Rare Books Division.)



Figure 1.6. Fire in the Amsterdam rope works, June 24, 1680. (Etching from Jan van der Heyden's *Fire Hose Book*, 1690, plate 8. Reproduced by permission of the New York Public Library, Astor Lenox and Tilden Foundations, Rare Books Division.)

Van der Heyden recounted this event to demonstrate the damage inflicted on buildings by old-fashioned firehooks used to pull down burning walls, demonstrating how much was saved in this case when the modern equipment arrived at the site. The morning-after scene of the damaged factory, shown from an elevated viewpoint, offers a persuasive lesson, for although the scene appears at first a mere ghost of its former self, the sulfur plant at the lower left is completely intact, as are large sections of the structures in the center.³³ All else consists of ruins or skeletal architectural remains being quietly observed by local inhabitants, including, at the right foreground, a dolorous couple with their child who have apparently lost their home.

In one of his final illustrations in the *Fire Hose Book*, Van der Heyden's expertise as a fireman and his love of Amsterdam as an artist truly converge. This scene depicts an exceptionally beautiful part of the city: a row of adjoining brick townhouses with step gables along the Herengracht (Gentlemen's Canal), which was, and remains, one of the most elegant sections of Amsterdam (fig. 1.7).

Since these tall, narrow dwellings were constructed with common walls, a fire in any one of them was an immediate hazard to all. Van der Heyden records the aftermath of a potentially serious blaze that began at midnight on April 25, 1683, after a group of people moving into the house had hauled their possessions up to the top floor. Leaving behind a forgotten burning candle, they descended to the lower level and worked late into the night, cleaning the shop on the ground floor. Exhausted, they fell asleep in a back room, and the fire was only discovered by the neighbors, who feared that their own house was ablaze.

Although this conflagration was not discovered immediately and the alarm was spread rather slowly, the illustration shows how much of the long, lovely facade of these buildings was saved because firemen were able to direct water from the foreground canal precisely where it was most needed. Indeed, at first glance the row of houses appears almost undamaged, for the lower floors are completely untouched. Only the exposed rafters at the very top and the blackened windows in the upper half of the central dwelling disclose what must have been a terrifying situation only hours earlier. Standing under the intact, fully foliated trees, elegantly dressed neighbors and small children have come out onto the street to discuss an accident in which not one person was killed or injured. The maidservant who stands with mop and bucket at the edge of the canal, preparing to begin cleanup chores, brings to mind the ineffectual bucket brigades of the recent past, whose best efforts would not have saved these buildings.

An image of exceptional quality, this print, which was clearly executed by the artist himself, displays meticulous draftsmanship, mapping out virtually every brick, from the plainly laid, worn brickwork that forms the retaining wall



Figure 1.7. Aftermath of a fire in a townhouse on the Herengracht, April 25–26, 1683. (Engraving from Jan van der Heyden's *Fire Hose Book*, Amsterdam, 1690, plate 13. Reproduced by permission of the New York Public Library, Astor Lenox and Tilden Foundations, Rare Books Division.)

of the canal to the intricate decorative patterns on the house facades. The damaged, yet still-standing, central building has been so closely observed that one can read its tiny plaque with the legible date of 1616, a further indication of Van der Heyden's commitment to recognizing the importance of the individual structures in his city and to making every effort to preserve them, both materially and artistically. While the treatise as a whole reflects the distinctively practical, scientific viewpoint of the Dutch republic in the seventeenth century, Van der Heyden's illustrations reveal how much his love for the city of Amsterdam stimulated his own unusual blend of artistic and technological abilities.

Van der Heyden's treatise, which is a precious document in the development and use of technology before the industrial age, reveals the built environment of a major seventeenth-century city in its full scope and variety, for the events he recorded required him to depict not only elegant townhouses but also industrial structures of minimal esthetic merit, which were almost always ignored by artists of the period. More importantly, all districts of Amsterdam come alive through his text and illustrations as places where people lived and worked peacefully, yet were frequently called forth to battle the most dangerous of all urban adversaries. Because Van der Heyden, more than anyone, understood the threat fire posed to personal and civic life, he was uniquely qualified to depict it. His illustrations for the *Fire Hose Book* capture the most mesmerizing contradiction of fire, whose bright flames and black smoke instill a corresponding polarity of elation and dread in the observer. Van der Heyden's images remind us that the price of such spectacles is always destruction of what feeds them and gives them life.

NOTES

1. Abbreviated in the text as *Fire Hose Book* and in footnotes as *Brandspuitenboek*, the original edition of Jan van der Heyden's *Beschrijving der nieuwlijks uitgevonden en geotrojeerde Slang-Brand-Spuiten, en haare wijze van Brand-blussen, tegenwoordig binnen Amsterdam in gebruik zijnde*, written with his son, Jan van der Heyden II, was published in Amsterdam in 1690. A second edition (1735) with six additional plates, translated by Lettie Stübbe Multhauf, was reissued in a smaller format as Van der Heyden, *A Description of Fire Engines with Water Hoses and the Method of Fighting Fires now used in Amsterdam* (Canton, MA: Science History Publications, 1996).

2. Van der Heyden, *Brandspuitenboek*, pt. 2, chap. 1, 9; Van der Heyden, *Description of Fire Engines*, 25.

3. Van der Heyden, *Brandspuitenboek*, pt. 2, chap. 1, 9; Van der Heyden, *Description of Fire Engines*, 25-26.

4. Illustrated in Peter C. Sutton et al., *Jan van der Heyden, 1637–1712* (Greenwich, CT: Bruce Museum; Amsterdam: Rijksmuseum, 2006), 127.
5. Van der Heyden's system is discussed in Lettie Stibbe Multhauf, "The Light of Lamp-Lanterns: Street Lighting in 17th Century Amsterdam," *Technology and Culture* 26, no. 2 (1985): 236–52.
6. This argument appears in an unsigned document in the Amsterdam Archiefdienst that may have been written by Van der Heyden himself. Multhauf, "Light of Lamp-Lanterns," 237.
7. The treatise is titled *'t Licht der Lamp-Lantaarens ontsteken door Jan vander Heijde Inventeur derselve en opsijter der Stads Lantaarens van Amsterdam* (Amsterdam, 1679).
8. A Dutch tract, published in Rotterdam in 1666, titled *Londens Puyn-hoop, Gods Rechwaerdige Strasse* (London's Rubbish Heap, God's Righteous Punishment), described the London catastrophe as divine retribution for the British burning of 150 Dutch ships in the Vlie estuary on August 9, 1666 ("Admiral Holmes's Bonfire"), a serious setback for the Dutch, who would regain ascendancy only after London burned.
9. This pen and ink drawing (Koninklijke Oudheidkundig Genootschap, Amsterdam) is Van der Heyden's only representation of his equipment operating outside Amsterdam. Never used for a print, it remained in the artist's possession all his life, yet an etching from the late 1690s by Johannes Kip employed the same setting to advertise firefighting equipment made by John Lofting of London, apparently one of Van der Heyden's competitors. Marijn Schapelhouman in Sutton, *Jan van der Heyden*, 234–35 with illustration.
10. Samuel Pepys's *Diary* captures the experience of the conflagration as he walked, brokenhearted, around his burning city: "So near the fire as we were for smoke, and all over the Thames, with one's face in the wind you were almost burned with a shower of fire-drops" (September 2, 1666). In 1676 another major fire would destroy most of South London, while the second Great Fire of London would consume another one thousand dwellings in 1682.
11. "Firefighting in Amsterdam in the Seventeenth Century," *Duits Quarterly* 12 (1968): 101–6; E. Green-Hughes, *A History of Firefighting* (Ashbourne, UK: Moorland, 1979); Sally Holloway, *Courage High! A History of Firefighting in London* (London: H. M. S. O., 1992); Adrian Tinniswood, *By Permission of Heaven: The Story of the Great Fire of London* (London: Jonathan Cape, 2003).
12. An early version of such a device mounted in a wheeled wagon (possibly the first image of a fire engine) is illustrated in Heinrich Zeising's *Theatri machinarum*, published in Nuremberg in 1610 (see pl. ZZ). The French engineer and garden designer Salomon de Caus described a similar pump in his *Les raisons des forces mouvantes*, published in Frankfurt in 1612.
13. How Van der Heyden constructed his leather hoses so that they would not leak or burst continued to baffle manufacturers of firefighting equipment outside Holland until 1818, when the copper riveting process was developed in Philadelphia. Following this

breakthrough, hose wagons and carts also began to appear, as discussed by Peter Molloy in Van der Heyden, *Description of Fire Engines*, ix–x.

14. On the technology of Van der Heyden's system, see Peter Molloy in Van der Heyden, *Description of Fire Engines*, vii–xviii; and Sutton, *Jan van der Heyden*, 74–81.

15. Even before 1690 Van der Heyden had circulated news of his invention throughout Europe in a 1677 brochure, printed by Jan Rieuwertsz in Amsterdam, with texts in Dutch and French and one illustration: *Bericht rakende 't Gebruik der Slang-Brand-Spuiten . . . Instructie van 't Gebruik in ongeval van Brand*. A copy is pasted into the back of the 1690 edition of the *Brandspuitenboek* in the Metropolitan Museum of Art, New York. A later broadsheet, dating from the early eighteenth century and showing improvement to the original system, has recently been discovered in the Dibner Library at the Smithsonian Institution, Washington, DC, by Timothy Winkle, to whom I am greatly indebted for sharing his find.

16. Use of the Van der Heyden fire engine at sea is discussed by Peter Molloy, who also notes that, despite William of Orange's importation of Dutch equipment, England (and English colonists to America) used another type designed by Richard Newsham. Molloy in Van der Heyden, *Description of Fire Engines*, iii.

17. My thanks to Dr. Michael Thimann for recognizing that this tiny detail was inspired by a print after Federico Barocci in P. C. Hooft's collection of verses after Ovid: *Metamorphosis, dat is Veranderingh, of Herscheppingh, Van P. Ovidius Naso . . .* (Amsterdam: A. de Wees, 1662), plate B 13 before p. 369.

18. Van der Heyden, *Brandspuitenboek*, pt. 2, chap. 2, 15; Van der Heyden, *Description of Fire Engines*, 37.

19. Van der Heyden, *Brandspuitenboek*, pt. 1, chap. 3, 7; Van der Heyden, *Description of Fire Engines*, 21.

20. Although Van der Heyden designed his own illustrations, using on-site drawings, he employed several printmakers, whose stylistic variations are evident. The cutaway house print appears to have been made entirely by Van der Heyden, while the image of the burning Town Hall was apparently engraved by another printmaker with a more summarizing draftsmanship.

21. Van der Heyden did not paint depictions of fires, but his contemporaries did, especially the "Delft Thunderclap" of 1654, which exploded an underground munitions depot, leveling a large sector of the city. Views of nocturnal city fires became so numerous during this period that Dutch inventories gave them a special classification term: "brandjes," or "little fires." See John Michael Montias, "How Notaries and Other Scribes Recorded Works of Art in Seventeenth-Century Sales and Inventories," *Simiolus* 30, nos. 3–4 (2003): 217–35. Depictions of fire in Dutch art are discussed in Susan D. Kuretsky et al., *Time and Transformation in Seventeenth-Century Dutch Art* (Poughkeepsie, NY: Frances Lehman Loeb Art Center, 2005), 190–205.

22. Van der Heyden, *Brandspuitenboek*, pt. 2, introduction, 8–9; Van der Heyden, *Description of Fire Engines*, 24.

23. Van der Heyden, *Brandspuitenboek*, pt. 1, chap. 1, 10; Van der Heyden, *Description of Fire Engines*, 26.
24. Van der Heyden, *Brandspuitenboek*, pt. 2, chap. 2, 16; Van der Heyden, *Description of Fire Engines*, 38.
25. Van der Heyden, *Brandspuitenboek*, pt. 2, chap. 2, 17; Van der Heyden, *Description of Fire Engines*, 48.
26. Even before the Van der Heydens arrived on the scene, Amsterdam's fire department was impressive with its more than sixty fire engines, purchased from the Nuremberg manufacturer Hans Hautsch between 1654 and 1670 and manned by a large volunteer fire corps. In 1666, the year of the Great Fire, London had fewer than a dozen small engines and no organized firefighting organization beyond men delegated by insurance companies and local parishes. Paris only began to acquire fire engines in 1699, when Louis XIV purchased twelve from a French builder working after Van der Heyden's designs. The number of Amsterdam fires that Van der Heyden noted between 1681 and 1690 (an average of eight per year) was significantly lower than even nineteenth-century tallies for both Edinburgh (90–100 per year in the 1820s) and London (over 900 in 1851), even considering that the canal network was an enormous advantage to the Dutch. Molloy in Van der Heyden, *Description of Fire Engines*, viii; and Sutton, *Jan van der Heyden*, 74.
27. Van der Heyden, *Brandspuitenboek*, pt. 3, chap. 4, 44; Van der Heyden, *Description of Fire Engines*, 87.
28. Van der Heyden, *Brandspuitenboek*, pt. 2, chap. 3, 24; Van der Heyden, *Description of Fire Engines*, 48.
29. Captioned images of disaster include Roeland Roghman's etching *The Bursting of the Dike outside Amsterdam, 1651*, and Herman Saftleven's drawing *Delft after the Gunpowder Explosion of 1654*, Metropolitan Museum of Art, New York. Reproduced in Kuretsky, *Time and Transformation*, 181–83 and 191–99.
30. Joost van den Vondel, *De volledige Werken van Joost van den Vondel*, ed. H. C. Diferee, 7 vols. (Utrecht: Toorentrans, 1929–34), 5:462, as cited by Arthur Wheelock in Kuretsky, *Time and Transformation*, 80, 82n22.
31. Van der Heyden, *Brandspuitenboek*, pt. 2, chap. 1, 9; Van der Heyden, *Description of Fire Engines*, 26.
32. Van der Heyden, *Brandspuitenboek*, pl. 8; Van der Heyden, *Description of Fire Engines*, 50.
33. Van der Heyden, *Brandspuitenboek*, pl. 9; Van der Heyden, *Description of Fire Engines*, 55.

Governance, Arson, and Firefighting in Edo, 1600–1868

JORDAN SAND and STEVEN WILLS

The city of Edo, whose name was changed to Tokyo in 1868, presents a particularly fruitful site for examining the way in which large preindustrial settlements managed the problem of uncontrolled fire. Edo was the capital city of the Tokugawa shogunate, the dynastic military government that ruled Japan from 1600 until the Meiji Restoration of 1868. Home to a rotating population of samurai from the military clans of over 250 *daimyo* who were Tokugawa vassals, plus a supporting population of commoners, it had become the most populous city in the world by 1700. The population remained relatively stable at approximately one million inhabitants for a century and a half thereafter. Since almost all construction in this densely populated metropolis was of wood and the technology of fire extinguishing was primitive, large fires were routine. This condition of extreme flammability had political and social as well as economic ramifications.

Although small fires, both accidental and intentional, were a daily occurrence, fires that destroyed multiple buildings in Edo were a seasonal phenomenon. Data on the largest fires of the era indicate that approximately two-thirds occurred during the four winter months of November through February, when the weather was driest and strong winds often blew from the north and northwest

toward the bay. The summer months, by contrast, were wet enough that fires seldom spread. The same statistics suggest that a conflagration was nearly twenty times as likely to develop in January as in June.¹

Yet the city's endemic fires cannot be blamed on an unusually hazardous natural environment alone. Other Japanese cities had similar conditions. All were wood built and prone to conflagrations, yet none suffered as frequently or on as large a scale as Edo. According to Yoshihara Ken'ichirō's review of surviving documents, 1,798 fires were recorded in Edo during the 268 years of Tokugawa rule.² Murata Michihito has counted 184 fires in Japan's second city, Osaka, during the same period. Since the Osaka population fluctuated between about 350,000 and 400,000 throughout the period, this means that there were roughly four or five times as many recorded fires per capita in Edo as in Osaka.³ Edo's exceptional number of fires derived chiefly from the nature of construction in the city. Central Edo was denser than elsewhere and construction cheaper. Whereas roofs in Osaka were uniformly tiled and plaster was widely used on exterior walls, in Edo the majority of houses were wood shingled and clad only in flimsy clapboards. Despite occasional attempts to promote sturdier construction, residents both elite and common devoted more energy to preventing fires and to escaping them when they raged than to building a city of more fire-resistant materials.

Edo appears at first the ideal case of the "Asian" fire regime described by Lionel Frost in his insightful overview, "Coping in Their Own Way: Asian Cities and the Problem of Fire." Frost observes the space-intensive construction of the walking city, the choice of cheap building materials and sparse furnishings, and the mitigation of economic loss by rapid renewal, all of which were features of Edo. However, Frost's model only takes us so far toward understanding Edo's fire regime. To explain why the cities he discusses retained these traits, Frost describes a "prisoner's dilemma" scenario in which individual citizens chose not to build in fireproof materials because they had no guarantee that their neighbors would not "defect" by refusing to make similar investments. He describes this inertia additionally as a problem of "path dependency."⁴ This understanding is inadequate to explain a fire regime as evolved and integral to the life of the city as that of Edo. One must look to a confluence of other social and political factors to explain why Edo remained so flammable.

Edo-Tokyo Fires as a Problem of Urban Governance

The explicit principle at the foundation of the Tokugawa government's approach to fire control derived from the fact that Edo was a castle town, built in effect as

a military encampment. Thus, before all else, the authorities sought to protect the castle itself and to maintain guard against armed threat. Fires in the commoners' districts of the city, meanwhile, were treated predominantly as a problem of social control, and, as with other matters, governed through moral exhortation and threat of punishment. Edicts were published several times annually ordering vigilance against fires and making not only fire prevention but active participation in firefighting obligatory for all households. Each block (*chō*) was required to have a guardhouse with a watchtower, and guards, accompanied by a local concierge (*yanushi*), were expected to make rounds nightly. In 1742, Shogun Yoshimune decreed that accidentally starting a fire that burned more than ten *koma* (18 meters) of adjacent buildings would result in confinement of up to thirty days. To encourage mutual surveillance, punishment was meted out to the landlord, the concierge, a neighborhood official responsible for the fire watch (*gachi gyōji*), and members of the five-man group that made up the smallest unit of urban administration. If the fire occurred on the day of a shogunal audience (*onaribi*), the concierge could be placed in chains for thirty days.⁵ A century and countless fires later, a new edict made it a crime of the same degree to allow a fire to spread by failing to extinguish flying embers from a conflagration elsewhere.⁶ It is difficult to imagine how such a rule could have been enforced. Regardless of its effectiveness, laws like this underscored the shogunate's position that fire control was a communal responsibility.

Edo authorities also sought to limit the uncontrolled spread of fires by regulating the places and times at which fire could be used. Edicts were issued forbidding candles and other sources of open flame on the second floors of buildings, requiring communal bathhouses to shut down the stoves they used to heat the water after the sixth hour in the evening (the private households of commoners were forbidden to have their own baths because of fire risk), and ordering food stalls using fire to shut down at the same hour and not to move locations.⁷ Movement generally was restricted at times of the greatest fire risk. On particularly windy days, residents were ordered to stay at home, shutter their shops, and ward against fire.⁸ A strong wind was enough to precipitate this state of siege because most of the backstreet houses were roofed with wood shingles, which not only burned quickly but were easily borne aloft in the flames and carried still burning to rooftops blocks away. Vigilance on windy days was thus among the more commonsensical of shogunal exhortations. American visitor Edward Morse found Tokyoites still battenning down on windy days in the late 1870s, a decade after the change of government. "For the last few days the wind has blown a furious gale," he recorded in his diary, "and everywhere on the street are seen preparations in anticipation of a large conflagration.

Few goods are displayed; godowns [storehouses] are partially sealed with mud.”⁹ Explicitly mandating such practices was part of the Tokugawa approach to governance, which focused on guiding the behavior of persons and households rather than on confronting the larger problem of protecting the city as a whole.

Arson provided a sure rationale to treat fire as a human rather than an environmental problem. Poor and marginal Edoites had a variety of reasons to commit arson, making it a likely cause for many of the city’s fires. It was a way to erase debts, one could expect to receive alms afterward, and there would be work opportunities in reconstruction. Between 40 and 50 percent of the hundreds of fires in Tokyo recorded by the Home Ministry under the new Meiji government in the 1870s were reportedly caused by arson or suspected to have been caused by arson.¹⁰ As long as conflagrations were common, however, the authorities had a clear incentive to blame them on arson. By capturing, torturing, extracting confessions from, and executing suspected arsonists, the Tokugawa regime made what otherwise appeared an intractable problem of urban management into a disciplinary matter and, at the same time, provided evidence of its own disciplinary power to the populace. During the most violent crackdown on arson in 1722 and 1723, authorities burned 101 accused arsonists at the stake, graphically fitting the punishment to the crime. Nearly half of this number were outcasts (*hinin*) or drifters (*mushuku*).¹¹ This form of arbitrary justice not only kept the status hierarchy in place but absorbed fire into the social order as well, rendering it an isolated violent event to be suppressed with violence rather than a chronic source of administrative crisis.

If the social control of uncontrolled fire induced displays of state violence, great fires also provided opportunities for displays of transcendent and benevolent rule, as Enami Shigeyuki and Mitsuhashi Toshiaki have argued.¹² This was true in the first instance because the shogunate followed major fires with measures such as street widening and construction of firebreaks, which involved the reparceling of land and the resettlement of large numbers of people, reminding the entire urban populace, military, clerical, and commoner alike, that they inhabited Edo at the grace of the Tokugawa shogun. These moves were accompanied by demonstrations of shogunal largesse in the form of grants for reconstruction, emergency shelters for the displaced, and alms. Fires occasioned a virtual potdatch of gifts and loans in all directions. Cash was granted to affected samurai houses according to their estate size (*kokudaka*) and to commoner houses according to their frontage. The tenement-dwelling majority received rice or gruel.¹³

As Katō Takashi has noted, the “vener of administration” that the shogunate was able to maintain over the city was “thin.” Responsibilities were delegated

through a commoner hierarchy from hereditary town elders ultimately down to the five-family groups. Like policing and poor relief, fire protection was never conceived as a public service that the government was obligated to provide.¹⁴ Wherever possible, actual management was placed in the hands of commoners. Even at the city prison, day-to-day affairs were put under the charge of bosses appointed from among the prisoners themselves. In place of direct administration, the shogunate claimed the role of moral paragon with the power over life and death, displaying munificence on one hand and rapid and absolute punishment of miscreants on the other—what Daniel Botsman has called “bloody benevolence.”¹⁵

Fires received more attention than any other municipal problem. Yet, as much as the authorities sought to regulate for their prevention and control, large conflagrations were at the same time unquestionably *useful* to the shogunate’s style of rule. A nostalgic history of Edo firefighting published in 1899, when the last remnants of the old regime were disappearing, opened with the observation that under the shogunate, the city approached fires on a war footing.¹⁶ By the same token, as a military regime ruling in peacetime, the shogunate used the pattern of crisis and response engendered by large conflagrations as a way to reaffirm its hegemony.

Arson and the Regime

The shogunal officials who oversaw commoner neighborhoods had the task of investigating suspicious fires and apprehending suspected arsonists. Once a case was reported or a suspect apprehended, samurai associated either with the offices of the two town magistrates (*machi bugyō*) or with independent “robbery and arson inspectors” (*hitsuke tōzoku aratame*) conducted investigations, interrogated suspects and witnesses, and imposed punishments.

By the early eighteenth century, the shogunate regularly appointed two robbery and arson inspectors. An inspector was given an office near the castle with a staff of five to ten constables (*yoriki*) and thirty to fifty patrolmen (*dōshin*). Inspectors accompanied their subordinates on horseback to make formal arrests, presided over trials, and submitted inquiries to the senior councillor (*rōjū*) before reaching verdicts on criminal cases.¹⁷ These two small offices with roughly one hundred men between them could not possibly have kept the whole city under effective surveillance—one reason that the shogunate relied so heavily on the commoners to police themselves.

The surviving records of these offices are communications between the inspectors and the shogunate's senior governing council. After an arson case had been thoroughly investigated, the inspector would submit a report proposing a verdict and punishment and request a final opinion. In some cases, particularly those where the inspector had proposed a death penalty, the senior councillor would forward the case to the high shogunal court called the Hyōjōsho.

Although the most respected body of legal guidelines throughout the latter half of the Tokugawa period, Shogun Yoshimune's *Kujikata osadamegaki* (compiled 1742), stipulated burning at the stake for all crimes of arson, surviving case records from this period reveal that shogunal officials frequently imposed lesser punishments, ranging from banishment to house arrest to a firm scolding in the inspector's office. The burning at the stake of alleged arsonists in 1722–23 marks the zenith of the shogunate's harsh first century of rule. Records of verdicts from the latter half of the seventeenth century include over fifty cases of arsonists, roughly 85 percent of whom were burned at the stake.¹⁸ *Oshioki reiruishū* (Catalog of Punishments), a compilation of high-court cases for the period from the 1790s to the 1830s, includes fourteen cases of arson, half of which resulted in burning at the stake.¹⁹ *Keirei bassui* (A Selection of Legal Judgments), a compilation of case reports sent by the inspectors and the verdicts of senior councillors covering a brief period between the 1780s and 1804, contains thirty-four cases related to arson. Unlike the high-court cases, cases in this compilation represent more of a cross-section of typical crimes handled by standard procedure. Arsonists were sentenced to be burned at the stake in only two of these cases. Two more were beheaded. Others received lesser sentences.²⁰ These judgments suggest that while Edo's penal system became more flexible in the eighteenth century, senior officials showed no hesitation to apply the harshest punishments to arsonists whose actions they deemed particularly egregious. For the arsonist or would-be arsonist, the frightening prospect thus always loomed of receiving the officially prescribed sentence and being burned at the stake, but confessing might also bring recognition of mitigating circumstances.

Judges in the eighteenth century came to place greater weight on the mental condition and moral character of the accused. This concern dictated thorough investigation of life circumstances and personal history.²¹ Suspects deemed mentally deficient tended to receive more lenient punishments. Conversely, judges viewed the crime as more grave if they judged the arsonist to have acted in a “calculating” or “cunning” (*takumi naru*) manner. A brief description of three cases will offer some idea of the way shogunal officials took into account the convicted arsonist's mental condition and the social context of the crime.

The first case in the *Keirei bassui* collection describes a Buddhist temple acolyte named Ryūkō who is reported to have “started a fire on an aimless whim and burned the temple down” in 1795. The inspectors found Ryūkō to be a “virtually deranged simpleton” and asked their superiors if he might be turned over to his master at the temple to be placed in confinement. After further investigation, a reply came from Senior Councillor Matsudaira Nobuakira finding that the accused had “gone temporarily insane” and afterward “had no idea what he had done.” Ryūkō was placed in the custody of relatives.

Another report in the compilation, submitted by Inspector Okabe Naiki to Senior Councillor Ōta Sukeyoshi in 1800, tells the story of Daisuke, a commoner living in a tenement, who had tossed burning cotton wool wrapped in scrap paper on a trash pile next to the outhouse used by the building’s residents.²² The report states that Daisuke had simply acted on an impulse, and that he did not have any other motives in setting the fire. During the three months it took the senior councillor to issue his verdict after receiving Inspector Okabe’s report, residents from the suspect’s neighborhood became involved in the case. After summarizing the details of the crime, Ōta wrote, “Although throwing a burning object on the trash pile was reprehensible, neighborhood officials and tenants living in the same building made a petition on the grounds that Daisuke is generally unwell.” Even though it would be difficult to characterize the accused as “deranged,” Ōta wrote, he gave the overall “impression of lacking intelligence.” Under these circumstances, and taking into consideration the fact that Daisuke had not set the fire for any “cunning purpose” (*takumi sōrō gi*), Ōta ruled that the boy should be banished rather than executed. The petition filed on his behalf and the fact that he had reportedly not set the fire with devious intent earned Daisuke a measure of clemency, even though he had unquestionably attempted arson and may ordinarily have been of sound mind.

A case submitted by Inspector Ikeda Masajirō to Senior Councillor Toda Ujinori in 1798 deals with a man presumably of samurai status named Nakagawa Shitomi, who had been employed as a retainer in a warrior household.²³ According to the case record, Nakagawa had been making advances to one of the female servants in the house in whom another servant was also interested. Hoping to prompt his master to fire his rival, Nakagawa set two fires and accused him. Toda’s verdict indicated that under interrogation Nakagawa had claimed he never meant to burn his master’s house down and thus had put both fires out himself. Nevertheless, he had spread rumors that the fires were the work of the servant, which Toda characterized as “a calculated act” (*takumi naru itashikata*). Toda’s verdict recognized the arsonist’s extinguishing the fires himself as a mitigating circumstance, sentencing him to beheading rather than the more

severe punishment of burning at the stake, but the “calculated” nature of his incendiarism was judged to justify execution.

These three cases show not only that there were exceptions to the draconian standards of written law, but that in spite of Edo’s perennial vulnerability to fire, officials calibrated their response to arson cases on the basis of their assessment of criminals’ morals rather than the damage they had caused or even intended. Of the three arsonists described, Nakagawa appears to have caused the least property damage, yet his punishment was by far the most severe. The criminal in this instance was guilty of having plotted against someone else. He was also a samurai guilty of a crime in his master’s household, making his act an offense to the social order.

The Threat of Arson and the Moral Economy

Property-holding elite townsmen were expected to give generously to their tenants and neighbors whenever they were burned out by fire and to pay the commoner fire companies after the event. Arsonists could take advantage of this moral economy because they were notoriously difficult to catch. The vast majority of backstreet tenants were victims of fire and not arsonists, and the aftermath of a fire was the occasion when they needed assistance most. Property holders recognized both protection against fire and poor relief as communal responsibilities in a local society where they possessed the privileges and the greater burdens of elite status. Regardless of whether it was deliberately set, therefore, a large fire was followed by demonstrations of elite largesse that were a boon to the poor and reaffirmed the status hierarchy.

The actual motives of arsonists, of course, varied widely. Accounts in the *Yomiuri* newspaper, which began publication in 1874, six years after the Meiji Restoration, offer a glimpse of arson in everyday context, before cases arrived in the courts. Most of the 584 arson attempts reported in the *Yomiuri* during its first decade of publication were caught by someone and the fire extinguished before large-scale damage had been done. This provides a significant corrective to the image of flammability one readily derives from studies that deal with only the city’s large conflagrations. On the one hand, any small fire, particularly one ignited during the dry and windy winter months, threatened to rage out of control and destroy hundreds or even thousands of houses. On the other hand, the tightly woven networks of mutual aid and mutual surveillance that characterized the city’s downtown neighborhoods assured that nothing out of the ordinary escaped notice for long.

Since a fire in one household could quickly engulf the entire neighborhood, the mere threat of arson was enough to affect the behavior of all householders. This made such threats an effective form of blackmail. The Tokugawa legal records and the Meiji-period newspapers contain frequent references to written threats called “fire notices” (*hifuda* or *kasatsu*) posted on house doors or the entry gates to blocks. The aim was to force the ostracism of one’s enemy. Community safety readily took precedence over the rights of an individual resident. One such threat, written in formal language and posted on the gate of a landlord’s agent in the shopkeeping neighborhood of Shitaya Sukiya-chō, was reprinted in an article in the *Yomiuri* in August 1875: “Whereas Takamatsu Minosuke, who is under your charge here, is an avaricious and corrupt man, in the near future we will burn this place down; therefore for your information we apprise you of this. Thank you.” The newspaper urged readers in Sukiya-chō to take all precautions. Five days later, a letter was printed in the *Yomiuri* from a resident of the block reporting that someone had indeed set fire to the roof of the house in question but that thanks to the newspaper’s warning the neighbors had been on their guard and were able to extinguish the fire.²⁴

It is unclear what beneficial role the newspaper had actually played, however, in printing a threat already issued publicly—and thereby expanding its audience from the immediate neighborhood to the entire city. The new medium of the newspaper may in fact have been the blackmailer’s dream come true, since it guaranteed maximum publicity. Although it is possible that Tokyo residents came to practice greater vigilance at the urging of the newspapers and thus limited fire damage, what the authors of posted threats sought more than physical destruction was to get their way by involving neighbors in their grievances. The *Yomiuri* also reported more than once the nuisance caused by having a recipient of such threats in one’s midst.

Firefighting Practices and Technologies

Following the destruction of the city in the huge Meireki fire of 1657, the shogunate established the first citywide firefighting organization: the *jōbikeshi*, or “regular firemen,” overseen by ten direct Tokugawa vassals. Each *jōbikeshi* company (*kumi*) was assigned to a different section of the city, and their firehouses were strategically located at ten points around Edo Castle. Until the mid-eighteenth century, these “regular firemen,” together with the *daimyo*-sponsored squads that were assigned to protect key locations such as Tokugawa clan temples and granaries, formed the core of the city’s firefighting force.

However, dozens of independent companies existed as well. The lack of a unified institutional structure led to conflicts among firefighters in the second half of the eighteenth century.

Fire companies made up of commoner townsmen emerged in the latter half of the seventeenth century and were given formal status under Shogun Yoshimune in 1718. The city map was divided into precincts, and each of forty-seven town fire companies was assigned responsibility for a designated precinct. Companies were identified by a single character of the Japanese syllabary and a decorative standard (*matoi*), which the bearer carried up onto a roof as close as possible to the fire in order to establish the company's precedence on the scene.²⁵ Sixteen companies were added subsequently for new districts east of the Sumida River. In theory, the activities of these companies were restricted to property owned by commoners, and each was to work within a limited perimeter, but in practice this was impossible, since commoner and samurai lots were interwoven and fires recognized no administrative boundaries. In the latter half of the eighteenth century, the town companies competed with the samurai-led companies. By the beginning of the nineteenth century, they had become the city's dominant firefighting force.²⁶ A symbolic watershed came when town companies were first called in to help extinguish embers after a fire at Edo Castle in 1747.²⁷

The shift toward dominance by the town companies was abetted by the shogunate, since giving greater responsibility to the commoners themselves reduced the financial burden on the regime. It also appears to have been a natural product of the town brigade's greater success in fighting fires. Drawn from the city's guild of construction workers and roofers, the town brigade firemen (known as *tobi*, meaning "hookmen," after their fire hooks) were more habituated than samurai to dangerous work in high places.

Under the direction of construction foremen, the companies maintained a hierarchy of six ranks. All members were paid a small retainer from funds collected among the property holders of their districts. Since this was not a living wage, they continued to do odd-job construction work. Many depended on the patronage of particular wealthy merchant houses. They also received gifts of *sake* and cash from property owners whose buildings had been protected. After a fire, surviving structures were left festooned with long poles bearing the tags of companies that had participated in the fight, in anticipation of such gifts and offers of work in the reconstruction.²⁸ By the late eighteenth century, an organic relationship had thus developed between the activities of construction and of firefighting, as the skills from one were imported to the other. Not merely laborers moonlighting as firefighters, the hookmen were the creative demons of the

temporary city. Unlike carpenters, for whom precision was more important than speed, hookmen were masters of the slapdash, expert in quickly putting up, propping up, and pulling down post-and-lintel and lashed structures, roofing and de-roofing, creating temporary shelter and dismantling it.

The city's reliance on these men in fires had a number of undesirable social ramifications. To begin with, they were difficult for the authorities to control. Turf battles occurred frequently, sometimes at the sites of fires, and a few resulted in deaths. The shogunate enjoined repeatedly against fighting, but the injunctions had little effect. Dependent on the town companies' firefighting skill, city authorities could not afford to treat them harshly. In the case of at least one fight between a town company and a samurai-led company, the magistrate even showed greater leniency toward the townsmen.²⁹ The second problem was that firemen tended to protect the property of their patrons first. Even among their patrons, the firemen's efforts went to the highest bidder. A newspaper account of a fire in the Kanda district in 1881 describes them hustling for cash in the thick of a fire. According to the newspaper, as flames closed in on firefighters manning the roof of the Daimaru dry goods shop, the head clerk held up two fingers and called out to them, promising two thousand gold pieces for their effort. The offer was first mistaken for two hundred, and few men responded. When they discovered it was two thousand, however, they gathered their comrades, redoubled their efforts, and saved the building.³⁰

If firefighters could save a particular structure for a price, they could also choose to ignore property out of spite or even use the chaos of an uncontrolled fire to take revenge on enemies by damaging or demolishing buildings. The shogunate issued edicts warning against this too. In the early nineteenth century, there were reports that firefighters encouraged fires to spread (the term used is *yobihi*, literally meaning "drawing" or "calling a fire"), which would in essence have been arson, but in the confusion of a large fire it would often have been impossible to establish culpability.³¹

At bottom, hiring construction workers to fight fires created a fundamental conflict of interest. One might even expect to find them commonly among accused arsonists. This is not borne out by the limited body of cases preserved in Tokugawa documents, however. As in many cities, the firemen's derring-do made them folk heroes. Although many came from the lower classes and their unruly behavior was infamous, their bosses were respected figures backed by the patronage of the wealthiest merchants. Strong patron-client relationships extended down from these bosses to the men in their companies. Construction workers who bore the hooked poles used in demolition and firefighting were

the most highly paid members of the city's large pool of day laborers. Professional pride and patronage seems generally to have kept firemen from being the ones to set the fires that were their livelihood.³² Yet in a situation where complete suppression was often impossible and the firemen who were most skilled at limiting damage had great autonomy at the site of the fire, they had powerful incentives to be selective in their firefighting.

In a large fire, the work of the town companies consisted mainly of stripping or tearing down flammable buildings along the flanks of the fire, leaving it to burn unchecked downwind until it reached water or fields. As a result, the area burned by most Edo fires was long and narrow.³³ The width of the path they cleared naturally varied, but judging from the fact that companies from two blocks (*chō*) on either side of the fire were required by law to mobilize, this may mark an outer limit of anticipated lateral spread.³⁴ Historians usually refer to the technique as “demolition firefighting.” It was not peculiar to Edo. London brigades in the seventeenth century, for example, demolished buildings in the path of fires with explosives. The technique developed by the Edo townsman firefighters was subtler, however, and distinct from firefighting practice in other cities in Japan as well as from the London firefighters' approach. Suzuki Jun reports that the Osaka magistrate noted the superiority of Edo firefighting techniques to the Osaka practice, in which buildings were pulled down. Taking a term from Meiji-period accounts, Suzuki proposes that the Edo technique be called the “dry method” rather than “demolition firefighting.”³⁵

The difference lay in the fact that the Edo town companies worked from the roof down on burning or threatened structures, stripping away everything removable to deprive the fire of fuel and encourage the heat to rise directly skyward rather than spread laterally to other buildings. This helped extinguish fires caught in their early stages and saved the frames and walls of sturdier structures in larger fires. Demolition was nevertheless a basic part of the firefighters' arsenal of techniques. Three types of construction in the city called for three distinct firefighting strategies: the cheapest structures, usually in the backstreets, built entirely of wood and shingled in wood, which were considered expendable and referred to as “burnable buildings” (*yakiya*); sturdier structures built of wood with tile roofs and clay and plaster exterior walls on at least the first story, known as “coated buildings” (*nuriya*); and the massive storehouses and shophouses called *dozō* (earthen storehouses), wood-framed but built with walls of clay and plaster as thick as sixty centimeters. Buildings in the first category were usually pulled down immediately or left to burn, buildings in the second were the main focus of the town companies' “dry method,” and buildings in

the third category, fireproof in most circumstances and anyway impossible to strip, were left intact, their doors and windows having been sealed shut by residents or professional plasterers in advance of the fire.

It should be noted that the buildings of the ruling class—including Edo Castle itself, the urban estates of the military clans, and the Buddhist temples—were constructed of the same materials as commoners' housing, equally flammable, and approached by town companies with the same methods on the occasions they were called in to fight fires in these precincts. They were not always called in, however. Fires that began within the estates of the military clans, which enjoyed spacious gardens to buffer them from the rest of the city, were treated as private affairs requiring no outside intervention provided they did not spread beyond a certain size (variously determined by several shogunal edicts) and their main gates did not burn. If either of these things did occur, however, Tokugawa regulations called for forfeiture of the estate. Anxious to avoid this punishment, the clans were known to lock out town companies and make accidental fires appear from outside to be intentional bonfires.³⁶ As commoners came to dominate firefighting in the late eighteenth century, the samurai fire companies concentrated on protecting their own compounds along with structures connected to the Tokugawa regime. One feature of their defense was to stand on the rooftops of these buildings and wave away flying embers with enormous hand fans. These fans became a mark of firefighters in the samurai companies.³⁷

Japanese craftsmen learned to construct rudimentary fire engines (pumps) from the Dutch in Nagasaki in 1754. Ten years later, the shogunate distributed fifty-five of them among the commoner districts in the capital. These were the first pieces of firefighting equipment that the authorities had distributed. They were indeed primitive, consisting of a wooden tank suspended from a pole to be carried by two men and a bamboo nozzle without a flexible hose. Buckets were used to replenish water in the tank. These engines were sufficient to play a thin stream on the second-story roofs where firemen worked, but not to extinguish a blaze. Although a patent was sought in 1823 for a water-raising device that could deliver a steady flow, "with the power of thirty men" from a nearby water source, no significant modifications to the engines occurred in the century prior to the Meiji Restoration.³⁸

This failure must be understood in social as well as technological terms. An official investigation in 1822 found many of the companies' engines in disrepair and unusable. The commoner neighborhoods responsible for their maintenance claimed that the cost of upkeep was prohibitive. Yet if the engines had been recognized as effective tools of fire suppression, such complaints would have made little sense, since the cost of reconstructing wooden buildings surely

exceeded the cost of maintaining a wooden pump. The real expense that burdened commoner property holders was the maintenance of the companies themselves. Suggesting the commoners' own perception of the priorities among firefighting techniques and technologies, pump men in the companies earned only half the wages of a standard-bearer, who did no extinguishing at all.³⁹

Although the investment in fire extinguishing remained limited through the Tokugawa period, the shogunate's distribution of pumps and apparently vain effort to see them properly maintained reveals that the regime placed more faith than commoners did in water-based extinguishing. This may be seen as part of a more general tendency in firefighting toward a wet approach among the elite and a dry one among commoners, evidenced also in differences between the firefighting approaches of samurai and town companies. One celebrated story tells of samurai firemen of the wealthy Kaga clan running a bucket relay over six kilometers from Hongō to Shiba in order to douse a fire at the Tokugawa ancestral temple there with water drawn from their own estate.⁴⁰ In contrast, an account of a fire in 1843 that threatened the firehouse of one of the shogunate's own regular fire companies (*jōbikeshi*) describes town companies coming to the rescue with their "special techniques" and succeeding in limiting the damage of the blaze when "not a drop of water" was available.⁴¹ The wet-elite/dry-commoner distinction extended to dress. The samurai-led companies stripped down to loincloths to fight fires, while the town companies did the opposite, donning heavy cotton jackets, which they doused in water. The samurai companies presumably stripped because wet clothes would only hamper their efforts to douse the flames, whereas the town companies dressed and doused themselves to protect their bodies while standing in the midst of the fire and stripping the buildings to control the direction of the flames rather than dousing them.

Using water was, however, the inferior technique given the building conditions and technologies of the time. Nor should we think of dousing as the more "natural" way to extinguish a fire, as some modern authors have implied in writing about Edo's dry, partial-demolition approach. On the contrary, directing large quantities of water toward the seat of a fire expends vast amounts of energy—in this instance, all human energy—without contributing to the more fundamental solution of depriving the fire of fuel. As the bucket relay across the city suggests, the preference for wet extinguishing among samurai firefighters was in part a show of elite profligacy. The relative dominance of dry firefighting in Edo demonstrates that although the fire engine may seem the most obvious and essential tool in any city's management of fire, it must be understood as part of a technological ensemble, together with brick and other fire-resistant

architecture and straight, wide streets for the rapid transport of large machines. Edo operated with a different ensemble.

The Logic of Edo's Fire Regime

Frost asks why residents of wood-built "Asian" or preindustrial cities did not rebuild in fireproof materials and presents a game theory model to answer, in essence, "because they couldn't count on others to do so too." Each citizen in this multiparty prisoner's dilemma scenario avoids investing in the fixed capital of fire-resistant buildings that would be for the good of all because of the fear that his neighbor will fail to fireproof. In the absence of either a strong public authority or a strong community will, it is unprofitable to invest, and the city continues to burn.

Yet Edo was ruled by a powerful authoritarian government, and Edo commoner neighborhoods were arguably stronger communities than anything that can be found in the modern world. The proper question to ask, therefore, is not why Edoites, as individual rational actors, failed to fireproof, but what broader social and political factors caused the shogunate and the city's residents to persist in a system they might have done more to alter. For several reasons, Edo's response to fire was shaped by more than simply the failure of citizens to mobilize themselves to protect their assets.

To begin with, the Tokugawa shogunate took numerous measures to limit the occurrence of fires, but it never did so with the aim of guaranteeing an environment for the safe accumulation of capital. Its political objectives lay elsewhere. The capital city was a space for the display of power, through military ceremony and through direct exercise of absolute rule. Redistricting, reapportioning of lots, and generous distribution of aid after large conflagrations were among the tools of this politics of display, making the fires themselves useful even though the disturbance of order and the budget strain they caused were undesirable. During the eighteenth century, the regime developed a more nuanced and negotiable position both juridically and administratively in relation to the commoner population.⁴² This was not an accommodation made to promote the interests of the bourgeoisie, however, and the physical fabric of the bourgeois city remained expendable in the eyes of the city's military rulers.

Bourgeois property holders did have a clear interest in protecting buildings and their contents, and many took measures, particularly by coating walls with clay and plaster and by tiling roofs. But wholesale fireproofing of even the most prosperous districts never occurred for a combination of social and economic

reasons. Not only was fireproofing expensive, but the cost to fireproof would have fallen heaviest on those least able to afford it, since the most flammable buildings were the backstreet tenements rented by the poor, usually from petty local property managers of modest means themselves. In a society where both rulers and local elites were supposed to be moral exemplars, wealthy merchants went to considerable lengths to avoid raising rents and evicting the poor.⁴³ This moral economy rather than a lack of mutual trust hindered construction of housing in more durable and expensive materials. A certain level of flammability was viewed as inevitable, to be tolerated together with the city's large floating population of poor tenants—who were also an indispensable source of labor. The flammable environment and the high level of mutual dependence within commoner neighborhoods were intertwined social phenomena, since vigilant neighbors were the best guarantee against fire, while the risk of a rapidly spreading fire required neighborly vigilance.

This condition was viable economically too because of the capital's position within networks for exchange of goods and movement of people involving the rest of Japan. As a military-political capital where the families of all the country's domainal lords were required to dwell, Edo was founded on the consumption and display of wealth rather than its production. The large shops, which dealt primarily in luxury silks for *kimono*, had their bases in Osaka, Kyoto, and other provincial centers that were finishing sites for materials brought from throughout the country. These shops kept recent shipments in storehouses along waterways at a safe distance from central Edo. Sustained by the carefully husbanded forest resources of central Honshū, lumber for buildings flowed continually into the city to be consumed as rapidly as textiles.⁴⁴ Edo thus played a key role in an integrated national commercial economy, but that role did not depend on its being the site of large investments in fixed capital. When Japan was compelled to reenter the global trade system under the terms of the imperial powers in the 1860s, the modern state redirected itself toward success in that arena and diplomatic display for the Western powers. In this new context, durable architecture for the first time became an important asset for the capital.⁴⁵

Nor would it be correct to view the city as technologically stagnant until the modern state introduced European fire engines and pressurized water at the close of the nineteenth century. If we include building and transport technology and the human technology of fire company organization and firefighting technique within our purview, there was considerable development across the Tokugawa period. Much of that development, however, was toward a more efficiently constructed and dismantled city rather than toward a fireproof one. There are indications that the institution of the townsman brigade in the early

eighteenth century did result in a decrease in large conflagrations.⁴⁶ Although several conflagrations caused massive loss of life, it seems that none after the great fire of 1657 approached it in casualties, and the great majority of large fires resulted in no deaths at all. Frequent acts of arson continued to reveal the stresses in the social fabric, but Edoites seem to have gotten better at escaping personal harm from conflagrations, and their firefighters unquestionably got better at containing and directing them—one might almost say “orchestrating” them—if not extinguishing them.

NOTES

1. Data of Yamakawa Kenjirō, cited in Kuroki Takashi, *Edo no kajī* (Tokyo: Dōseisha, 1999), 14–15.
2. Yoshihara Ken'ichirō, cited in Kuroki, *Edo no kajī*, 3.
3. Murata Michihito, “Kinsei Ōsaka saigai nenpyō,” *Ōsaka no rekishi* 27 (Osaka, 1989): 88–105. Population figures in *Shinshū Ōsaka shishi dai 4 kan*, ed. Shinshū Ōsaka shishi henshū iinkai (Osaka: Ōsakashi, 1990), 199.
4. Lionel Frost, “Coping in Their Own Way: Asian Cities and the Problem of Fires,” *Urban History* 24, no. 1 (1997): 14–16.
5. Kuroki, *Edo no kajī*, 130–31.
6. Edict issued following the great fire of 1829, quoted in Yoshihara Ken'ichirō, “Edo saigai nenpyō kaisetsu,” in *Edo chōnin no kenkyū* 5, ed. Nishiyama Matsunosuke (Tokyo: Yoshikawa Kōbunkan, 1978), 447.
7. Kuroki, *Edo no kajī*, 137–38.
8. *Ibid.*, 132. Kuroki paraphrases an edict issued in 1830, but this was not the first of its kind.
9. Edward Sylvester Morse, *Japan Day by Day*, 2 vols. (Boston: Houghton Mifflin, 1917), 2:398.
10. Charts in Makihara Norio, *Kyakubun to kokumin no aida: Kōndai minshū no seiji ishiki* (Tokyo: Yoshikawa Kōbunkan, 1998), 24–25.
11. *Ibid.*, 28.
12. Enami Shigeyuki and Mitsuhashi Toshiaki, *Saiminkutsu to hakurankai: Kōndaisei no keifugaku, kōkan chikaku hen* (Tokyo: JICC Shuppanyoku, 1989), 44–45.
13. Kuroki, *Edo no kajī*, 174–77.
14. Katō Takashi, “Governing Edo,” in *Edo and Paris: Urban Life and the State in Early Modern Era*, ed. James L. McClain, John M. Merriman, and Ugawa Kaoru (Ithaca, NY: Cornell University Press, 1994), 53, 58.
15. Daniel V. Botsman, *Punishment and Power in the Making of Modern Japan* (Princeton, NJ: Princeton University Press, 2005), 41–58.
16. “Edo no hana,” *Fūzoku gahō*, no. 179 (January 1899): 1.
17. See Minami Kazuo, “Hitsuke tōzoku aratame,” in *Edo no machi bugyō* (Tokyo: Yoshikawa Kōbunkan, 2005).

18. *Oshioki saikyochō* (Book of Punishments and Verdicts), reprinted in *Kinsei hōsei shiryō sōsho*, ed. Ishii Ryōsuke, rev. ed. (Tokyo: Sōbunsha, 1959), 1:186–98.

19. Ishii Ryōsuke, ed., *Oshioki reiruishū* (Tokyo, 1971–73).

20. Harafuji Hiroshi, ed., *Hitsuke tōzoku aratame no kenkyū: Shiryōhen* (Tokyo: Sōbunsha, 1998). Citations for cases described in *Keirei bassui* refer to this text, abbreviated hereafter as *HTAK*.

21. For further examples, see Steven Wills, “Fires and Fights: Urban Conflagration, Governance, and Society in Edo-Tokyo, 1657–1890” (PhD diss., Columbia University, 2010), 32–88.

22. *HTAK*, 61, Case 7.

23. *HTAK*, 59, Case 2.

24. *Yomiuri shinbun*, no. 179 (August 20, 1875), 1; *Yomiuri shinbun*, no. 183 (August 25, 1875), 2.

25. The spot closest to the fire was referred to as the *hana*, or flower.

26. On competition between companies, see Ikegami Akihiko, “Edo hikeshi seido no seiritsu to tenkai,” in *Edo chōnin no kenkyū* 5, ed. Nishiyama Matsunosuke (Tokyo: Yoshikawa Kōbunkan, 1978), 91–169.

27. Kuroki, *Edo no kajī*, 92. For a social history of the town fire companies, see William Kelly, “Incendiary Actions: Fires and Firefighting in the Shogun’s Capital and the People’s City,” in *Edo and Paris: Urban Life and the State in Early Modern Era*, ed. James L. McClain, John M. Merriman, and Ugawa Kaoru (Ithaca, NY: Cornell University Press, 1994), 310–31.

28. Morse, *Japan Day by Day*, 2:126, provides a sketch of “firemen hanging out the names of the engine companies who saved the building as it stands.” The building in the sketch has been stripped of roof tiles and roofing boards, but its frame is intact.

29. Ikegami, “Edo hikeshi seido no seiritsu to tenkai,” 145–47.

30. *Tōkyō nichinichi shinbun*, February 16, 1881, quoted in *Tōkyō shi shikō shigaihen* 64, ed. Tōkyōto (Tokyo: Tōkyōto, 1973), 662. On the modern transformation of the town fire brigade, see Suzuki Jun, *Machibikeshitachi no kindai: Tōkyō no shōbōshi* (Tokyo: Yoshikawa Kōbunkan, 1999).

31. Suzuki, *Machibikeshitachi no kindai*, 18. See also Takeuchi Makoto, “Festivals and Fights: The Law and the People of Edo,” in *Edo and Paris: Urban Life and the State in Early Modern Era*, ed. James L. McClain, John M. Merriman, and Ugawa Kaoru (Ithaca, NY: Cornell University Press, 1994), 384–406.

32. On the status of the *tōbi*, see Yoshida Nobuyuki, “Kyodai toshi ni okeru mibun to shokubun,” in *Kinsei toshi shakai no mibun kōzō* (Tokyo: Tōkyō Daigaku Shuppankai, 1998), 283–308. For discussion of the only recorded case in which firemen were accused of setting a fire, see Wills, “Fires and Fights,” 39–40, 72–73.

33. Ōta Hirotarō, “Edo no bōka taisaku,” in *Nihon kenchiku no tokushitsu* (Tokyo: Iwanami Shoten, 1983), 317.

34. Yamamoto Sumiyoshi, *Edo no kajī to hikeshi* (Tokyo: Kawade Shobō Shinsha, 1993), 136. Yamamoto states that two blocks on either side of the fire, three blocks ahead of it, and three blocks behind it mobilized together with the block where the fire had broken out.

35. Suzuki, *Machibikeshitachi no kindai*, 34, 36.
36. Yamamoto, *Edo no kajī*, 225–26.
37. Suzuki, *Machibikeshitachi no kindai*, 28.
38. Yamamoto, *Edo no kajī*, 115–16.
39. *Ibid.*, 119.
40. Suzuki, *Machibikeshitachi no kindai*, 27.
41. “Edo no hana,” *Fūzoku gahō rinji zōkan*, no. 183 (February 20, 1899): 4–5.
42. See James L. McClain, “Power, Space and Popular Culture in Edo,” in *Edo and Paris: Urban Life and the State in the Early Modern Era*, ed. James L. McClain, John M. Merriman, and Ugawa Kaoru (Ithaca, NY: Cornell University Press, 1994), 105–31.
43. Tenants were protected indirectly through the presence of the landlords’ agents, or concierges, known as *yanushi*. See Morita Takako, *Kindai tochi seido to fudōsan keiei* (Tokyo: Hanawa Shobō, 2007).
44. On Tokugawa forestry, see Conrad Totman, *The Green Archipelago: Forestry in Preindustrial Japan* (Berkeley: University of California Press, 1989), and Conrad Totman, *The Lumber Industry in Early Modern Japan* (Honolulu: University of Hawaii Press, 1995).
45. This transformation receives further treatment in Jordan Sand, “Property in Two Fire Regimes: Edo-Tokyo in the Seventeenth through Nineteenth Centuries,” in *Investing in Permanence: The Empires of Trade and the Built Environment*, ed. Carole Shammas (Leiden: Brill, forthcoming). See also Fujimori Terunobu, *Meiji no Tōkyō keikaku* (Tokyo: Iwanami Shoten, 1982).
46. See Nishida Yoshio, *Kōshō: Edo no kasai wa higai ga sukunakatta no ka* (Tokyo: Jūtaku Shinpōsha, 2006), 55–57.

Taming Fire in Valparaíso, Chile, 1840S–1870S

SAMUEL J. MARTLAND

Valparaíso clings to the shore of central Chile's most usable natural harbor, poorly protected from storms at sea and hemmed in by bluffs on land. (See fig. 3.1.) After 1818, Chilean political independence and North Atlantic industrialization brought burgeoning seaborne trade to what had been a sleepy town. Early Chilean governments used their port's location on the route from Cape Horn northward to attract merchants who wanted a warehousing base for trade with the countries to the north, as well as with Chile itself. Such a base let merchants fill orders faster, avoid the more frequent political instability of some of Chile's neighbors, and enjoy the Chilean government's favorable attitude toward foreign business.¹

Valparaíso grew from 5,317 in 1813 to 24,316 in 1835 and about 100,000 in 1875, forcing a nonindustrialized city and nation to come to grips with the urban effects of industrialization. That adaptation gave the city an image simultaneously cosmopolitan and Chilean. National strategic importance coexisted with international influences. The city's elite, whether Chileans, immigrants, or temporary expatriates, tended to share values of efficiency and order associated with commerce. Many developed a strong interest in what they called "local progress." Moreover, service to Valparaíso could be a form of service to Chile. The national



Figure 3.1. Valparaíso, 1906. The three early conflagrations took place in the congested Puerto business district, along the waterfront in the northwestern part of the city. (Reproduced from Enrique Espinoza, *Geografía descriptiva de la República de Chile*, 4th ed. [Santiago: Imprenta i Encuadernacion Barcelona, 1897], following p. 188.)

and the international overlapped and interacted among everyday citizens as well.² Because buildable land was scarce, more commerce and more people brought crowding by the 1840s. As many observers noted, wooden buildings, narrow streets, untrained firefighters, scanty equipment, and frequent high winds made every fire likely to spread. Stores, warehouses, and mansions mingled with shacks, bakeries, and smithies, allowing class-based finger-pointing when fire hazards were discussed. Between them, the great fires of 1843, 1850, and 1858 burned most of Valparaíso's core. Each fire threatened to devastate the leading trading firms in Chile—most of which stored cloth or other combustible merchandise in the city—and destroy the public and private infrastructure that made Valparaíso a dominant Pacific coast port. Fires thus menaced the single largest part of the Chilean government's revenues and Chile's toehold in the industrial world.

Beginning in the 1840s, prevention and firefighting gradually prevented or contained fires that had formerly seemed unavoidable and unstoppable except by a cliff or a change in the wind. Valparaíso pursued volunteer firefighting enthusiastically, in decades when many other Western cities replaced volunteers with paid professionals. New equipment and infrastructure helped the volunteers

tame fires. Fire insurance helped make fires less catastrophic, at least for the rich. Regulations diminished old hazards and new ones created by new technology and helped expand the scope of government activity throughout Chile. As they fought fires, *Porteños* (as people from Valparaíso are known) built confidence in the human capacity to control nature and to prevent damage from human causes. They were justified: by the 1880s, most fires affected a single building, rather than the city. There were no more great fires until the severe earthquake of 1906.

Firefighting

Organized firefighting began before 1840 in both Valparaíso and the capital, Santiago. At first, working-class militiamen fought fires but won little recognition. Before the 1851 founding of Valparaíso's first elite volunteer companies, officials and newspapers mentioned firefighters mostly to note their inadequacy. Nevertheless, neither city ever seriously pursued a paid professional department. The vivid historical memory of Chile's volunteer fire companies, today the country's most respected institution, often conceals the earlier firefighting initiatives that help explain the volunteers' success.

In 1838 Valparaíso's intendant, city council, and stock market directors asked the national government to approve new firefighting regulations and a new property tax, arguing that without major reorganization and better maintenance "disorder and confusion" would render the city fire pumps useless.³ (In Chile's centralized government, the intendant, the presidentially appointed head of the national government in the province and *ex officio* president of the city council, carried great weight locally and with cabinet ministers.) The national government, as owner of the customhouse, navy headquarters, and other valuable buildings, would have to contribute two hundred pesos a year, compared to one hundred from the municipal government and eight hundred from valuable private buildings in the flat part of the city. Neither fire engines nor the tax would reach those in the hills. The new revenue and organization did not materialize.

Fire devastated the Puerto business district on March 15, 1843. The fire broke out in a storeroom in a notable new building and burned a wide swath from the hill to the sea along Calle Aduana, the eastern end of the city's main street. Without a firefighting organization, soldiers, sailors, and *ad hoc* bodies of bystanders fought the fire; a French naval officer even got into an altercation when a poor Chilean refused his orders. One house was partly pulled down to

protect the “new Customs warehouses.” Fear that the rubble might reignite lingered for hours. The intendant mentioned the local pumps and local people but focused praise on French and British naval personnel.⁴ In response to the fire, local leaders wrote new regulations, talked about fire insurance, and considered better firefighting. National militia authorities ordered the intendant to found a militia fire brigade of 105 officers and working-class men, who would fulfill their obligatory militia service and gain the coveted *fuero militar*.⁵ Though small, the unit merited a navy captain (and later army colonels) as commander.⁶ The local newspaper, *El Mercurio*, seems not to have noticed, however, as its weekly English edition called for “an efficient fire brigade” eight months later.⁷ The paper’s Chilean publisher presented fire engines as a mark of the highest civilization, to which Valparaíso should naturally aspire, claiming that the Turks just ran away and the Chinese only demolished buildings.

As of 1844, the stock market superintendent and a “committee of merchants” were maintaining firefighting equipment on about 1,000 pesos (£187 10s or US\$[1844]911.25) a year in public and private contributions.⁸ The 200-peso municipal contribution paled beside the 3,960-peso streetlight budget, but the city council nonetheless hoped to shift responsibility to a mutual fire insurance company and pay only a 50–100-peso premium. (See “Insurance” below.) In the meantime, the council proposed to organize a brigade of three or four hundred unpaid firefighters, spend 1,000 pesos on new equipment, and raise 1,000 pesos a year in new revenue for maintenance.⁹ Only a quarter of property owners were contributing, so the intendant met with “the principal property owners” to ask them to support the fire department—an early citywide initiative in a city where most public projects had been restricted to a particular street.¹⁰ In the future, firefighting would enhance municipal power and civic cooperation, but this time owners who opposed a contribution proportional to property values sank the project. The insurance company and its fire brigade never materialized either, but by early 1845 the militia fire brigade had grown to 210 members.

Brigade commanders praised their men’s “boldness and enthusiasm” and noted injuries in service, but citizens and foreign sailors still had to help fight significant fires.¹¹ Colonel Juan A. Vives, commander in 1846–51, wanted more pumps, tools, money, and men. Despite his pleas, the brigade remained poorly equipped and haphazardly managed. In 1846 and 1847, the brigade did not even manage to claim the state’s yearly two-hundred-peso contribution.¹² Communication could be a problem, as the police did not always ring the proper alarm on the city’s church bells.¹³

Implicitly recognizing the limits of firefighting, Vives emphasized saving property from burning buildings and guarding it against thieves. He sought

money for uniforms, or at least matching hats, to exclude thieves and obstructive gawkers from fire scenes.¹⁴ The police sometimes treated firefighters as part of the problem. In February 1847, Vives complained that the police had detained three firefighters running to a fire scene.¹⁵ In April 1847, one of Vives's captains complained that two of his men had been arrested while fighting a fire on their own; the night-watch commander denied that the men had tools, said one of them had previously been in trouble with the police, and implied that they had joined a crowd of looters.¹⁶ In 1848, the minister of war told Congress that because firefighting was "little known in the country," militia firefighters were less disciplined than infantry or cavalry.¹⁷ Away from fires, records show seventeen arrests of members of the unit for drunkenness, theft, domestic violence, and unspecified crimes from 1848 to 1852.¹⁸

In 1847, when the national government expanded the Valparaíso fire brigade to 695 *zapadores bomberos*, the newspaper *El Comercio* treated it as a new entity, which suggests that the brigade had not been highly visible.¹⁹ (The government expanded the Santiago brigade simultaneously, a tentative step toward national firefighting.²⁰) Mixed reviews continued until 1851, when dissatisfaction and hope led to the replacement of the working-class militiamen with elite volunteers. This change proved too extreme, and a combined system developed by 1853.

At the great fire of December 15, 1850, which destroyed nearly all the buildings on Calle del Cabo (Cape Street), just southeast of the Puerto business district, the militia firefighters worked hard, but not together and not in command of the operation. Many impromptu volunteers helped fight the fire, as did French and English naval detachments. The intendant supervised operations personally. Naval and private pumps supplemented ill-maintained city ones. The wind drove the fast-burning blaze west until water and demolitions stopped it at the edge of the business district. The intendant praised the police and foreign and Chilean volunteers in his report to the minister of the interior, his direct superior. Two days later, when the fire commander reported his men's hard work and pointed out that "since they [did] not have uniforms their service was not noticed," the intendant praised them in a letter to the minister of war—but noted that when they tired, he had promised them half a peso each.²¹ Dissatisfied, the national cabinet instructed the intendant to get the leading citizens to improve the firefighting system.²²

They replaced the militia with a volunteer fire department like those described by resident US merchants, but staffed and managed by the elite property owners themselves. The owners, the state, the city, and the insurance companies funded the new organization, which received more support and appeared more efficient than its predecessors. As an institution, the volunteer

fire department took over from the militia in June 1851, when the intendant placed it in charge of firefighting. He did not send this order to Vives, who read it in the newspaper, sought instructions, and handed over the militia's pumps and tools, ending militia firefighting.²³ Though private, the department exercised certain governmental powers in return for minimal government supervision. From the start, the intendant gave the fire superintendent the power to give orders to the police in his absence, while the 1858 bylaws allowed the fire superintendent to command even military personnel at fires.²⁴ This power mattered: the department still needed outside help. As late as 1857, foreign navies landed sailors to help with fairly routine fires, and they helped with the great conflagration of November 1858.²⁵ The new volunteers built on their social prestige with energetic organization and drills. Their exercises, advertised in the newspapers, presumably enjoyed the support of the property owners who were their employers, fathers, or friends, and also served as athletic events for men with desk jobs. The involuntary fire militiamen, in contrast, had probably resented the time they spent drilling.²⁶

No one said—officially—that the new body would be better because its members were rich, although in 1852 Intendant Roberto Simpson said that the volunteer companies had replaced the old militia fire battalion “with recognized advantages.”²⁷ Newspapers and officials did call the elite volunteers courageous, self-sacrificing, and heroic much more often than they had praised the artisan-laborer militiamen. The American merchants who suggested a volunteer department, long-time expatriates, may not have known that civic leaders in the United States were turning against volunteer firefighting.²⁸ Certainly such discomfort never arose in Chile, where city leaders found the volunteers much more respectable than the working-class militiamen they replaced. Service as *commander* of the fire militia, however, did not keep Vives from being elected superintendent of the volunteer fire department in the mid-1850s.

The volunteer department first replaced the fire militia, then incorporated it indirectly. In 1852, when the battalion still existed, the intendant called its members “the best people, picked from the other civic battalions, and artisans in professions analogous to” firefighting.²⁹ He failed to persuade the national government to assign them to help the new companies with the heavy work, and as a result the battalion disappeared. In 1853, he and the fire department directors proposed drafting the city's longshoremen as auxiliary firefighters because they were already organized into crews and accustomed to carrying heavy loads through the surf, unlike “the young volunteers, who [could] withstand . . . [wet,] fatiguing labor . . . only because of enthusiasm and honor.”³⁰ He noted that property owners would not suspect the familiar longshoremen of

theft, a fear nearly as great as that of fire itself. The national government did eventually allow a certain number of artisans and longshoremen to choose to serve as auxiliary firemen instead of militiamen. By 1862, each fire company's volunteers were supported by working-class auxiliaries, who received pay and refreshments at fires.³¹ (One company reported owing 17.25 pesos for "Liquor drunk during a fire."³²) Elite men still held the most important, most dangerous, and most exciting jobs.

Volunteers served for free and auxiliaries were paid only when called out, but both received substantial benefits. Volunteers gained lavish praise for facing danger and discomfort for the public good. In 1866, for example, Valparaíso and Santiago firefighters stayed in the port to fight fires during a Spanish bombardment that all other civilians fled when the Spanish admiral announced it.³³ They demonstrated physical prowess at fires and exercises, earned public honor in leadership positions, and used fire stations as clubs. Financial records reveal modern buildings destined for more than the storage of equipment. In 1857, one company even bought six sets of dominoes, two of checkers, and one of chess.³⁴ Cristián Gazmuri argues that volunteer fire departments provided space for free discussion. Gazmuri shows extensive common memberships between fire departments, Masonic lodges, and the egalitarian Radical Party. Noting that President Manuel Montt quashed a proposal for a Santiago volunteer fire department in 1857, he argues that the authoritarian Montt, though willing to accept such useful associations in provincial cities, feared them in the capital.³⁵ Firefighting let immigrants and expatriates honor both their national origins and their present community; many founders were foreign, and within a decade there were French, German, Spanish, and Italian companies alongside largely Chilean ones.³⁶ Companies provided medical assistance for auxiliaries, funeral benefits for all members, and funeral parades for at least volunteers. Auxiliaries and volunteers, exempt from militia service, eventually carried identity cards to show skeptical recruiters.³⁷ By 1857, auxiliaries were entitled to the *fuero militar* but had problems using it; the fact that this threatened to destroy the auxiliaries by mass resignation suggests either that the auxiliaries were a rowdy bunch or that working-class men often had trouble with the law.³⁸ They were also less likely than the volunteers to be called to protect their own homes, many of which were on the hills where fire engines could not go.

Even with better firefighting, at least eight fires spread to several buildings between 1851 and 1858. Many reports mention attempts to stop fires by demolishing buildings to make firebreaks in their paths. Wind and humidity also shaped fires. In the dry or unlucky summer of 1855, three major fires struck in as many weeks. Despite the best efforts of firefighters and sailors, they destroyed

a foundry, the city icehouse, dozens of shacks and small houses, “a distillery, and Sr. Bone’s candle factory.” In his third report, the despairing intendant Julian Riesco appealed to “Divine Providence” to stop the fires, an invocation almost unheard of in official correspondence.³⁹ Valparaíso’s generally confident officials had not yet dominated fire.

Firefighting was “in part useless because of the unfavorable weather” on November 13, 1858, when a fire broke out in the elite Club de la Unión and destroyed a swath of buildings over five hundred meters long on both sides of Cabo and San Juan de Dios Streets, in an important commercial district. There was no hope of stopping the fire as it approached the lumberyard or wood-working shop next to merchant Joshua Waddington’s building, because of all the wood inside. High winds spread the fire even more rapidly than buildings could be demolished. Rough seas capsized a French boat carrying gunpowder for demolitions. Water was scarce in the area, and large waves made it hard to pump from the ocean, the usual source. The small piped water system provided a little water. The fire was eventually contained on the east, not by fire fighters but by a masonry building and a shift in the wind. Indeed, human efforts had helped the fire spread: furniture saved from two adjacent streets, Cousiño and Edwards, caught fire and carried the conflagration across the street.⁴⁰ The fire superintendent laid some blame for the fire’s spread on the owners of a building near the burned area who had refused to rent it for a firehouse.⁴¹ Valparaíso responded to this great conflagration with new fire-safety regulations, which the fire department helped to write in cooperation with the representatives of the insurance companies that had finally entered the Valparaíso market beginning in 1853.

Insurance

After the fire of 1843, municipal and business leaders pursued a panacea: a mutual insurance society that would also maintain an effective fire department, keep watch in particularly flammable areas, and replace the tiny municipal firefighting budget with an even tinier municipal insurance premium. The city council recognized that this would be the first fire insurance in Chile, and that the national government might be skeptical, but argued that Valparaíso’s high fire danger and bad firefighting demanded it.⁴² Private owners had signed up to insure four hundred thousand pesos worth of property by June 1844, but local officials thought that the society needed municipal participation to gain property owners’ trust. In November, the intendant finally convinced the national

government to let the city insure its fifty-seven thousand pesos worth of property for a one-year trial, but the insurance society went nowhere.⁴³ The national government may have withdrawn its approval because of the liability posed by the insureds' promise to chip in to cover claims that exceeded the company's reserves. Perhaps the port's businessmen realized that an insurance society operating in only one city could be wiped out by a single fire like the one that had inspired it. In any case, this first attempt at insurance is an early example of arguments that Valparaíso was both vital to Chile and different from the rest of the country, needing new technology, new institutions, and special rules.

Porteños discussed mutual insurance through 1852, but the only lasting companies were stock ones. By 1848, some owners "[insured] their properties in Europe," leading to the suggestion that it would be better to keep the premiums in Chile.⁴⁴ In 1851, a "Mr. H" came to Chile and offered his "thorough knowledge of the insurance business, as well as of the construction of public Companies."⁴⁵ This may have been Richard Heatly, one of a group of Chilean and foreign businessmen, resident in Valparaíso, who founded Chile's first successful insurance company, the *Compañía Chilena de Seguros*, in 1853.⁴⁶ The owners and the company resided in Chile, and the premiums stayed there, too. Most likely, the new company's small size worried some potential customers, while its local ties inspired trust. In 1853, Harry Griffin, probably the first local agent of a foreign insurance company, the Liverpool Royal Fire Insurance Agency, advertised credentials certified by the Chilean consul in Liverpool, implying that some people feared fraudulent agents.⁴⁷

By 1858, several Valparaíso merchants served as agents for insurance companies, most of them foreign.⁴⁸ In 1868, the *Compañía Chilena de Seguros* was advertising prominently in the local newspapers alongside several British companies. To protect their investments, the companies consistently gave more money to the fire department than did the national government, the city, or private citizens, partially fulfilling municipal hopes of the 1840s. In 1897, insurance companies gave nearly as much as all three put together.⁴⁹ By the 1870s, insurance was common enough that *La Patria* routinely reported whether a burned property was insured. There were no great fires between 1858 and the disastrous earthquake of 1906, but the city remained risky for some decades, in spite of the efforts of the fire department and the regulators. In 1870, the Liverpool correspondent of Valparaíso's English newspaper wrote that because the Chilean insurance companies were not profitable, the English companies would stop serving Valparaíso. The problem, he said, was that "every fire [meant] a total loss"; an improved water supply, he thought, might reduce risk and keep some of the companies in the market.⁵⁰ Insurance (and water mains) persevered in

Valparaíso and took hold in Santiago. In 1886, *La Patria* could say, “In 1866 a fire was considered a catastrophe; today it is seen as a matter of business.”⁵¹ The article attributed this change to insurance, to firefighting, and to volunteer firefighters’ work in saving lives, a function that had been less prominent in the 1850s.

Regulations and Precautions

Valparaíso’s 1840s fire regulations mostly attempted to contain fires that city councillors assumed would start in buildings used for certain “dangerous” activities. Over the next three decades, rules meant to prevent fires outright became more common. Documented experience gradually replaced gut assumptions as the basis for new rules. New technologies gradually replaced the poor as the main target of fire regulations. Indeed, since steam boilers, kerosene warehouses, and the like often belonged to the wealthy, arguments about fire danger gradually stopped being based on class.

In 1842, Intendant José María de la Cruz described a city of wooden buildings, narrow streets, and extremely flammable goods, with *ranchos* (the wooden shacks of the poor) “in immediate contact” with “many of [its] principal and most costly buildings.”⁵² His only action aimed at this menu of hazards was an attempt to demolish *ranchos*, which he saw as tinderboxes with careless occupants. Did he reason that the shacks were less necessary and more portable than the stores, offices, and warehouses? Was fire danger just an excuse to get poor people’s homes out of downtown? Rapid urban growth had made the Valparaíso elite afraid of criminals, sailors, and the urban poor. The national government, often reluctant to interfere with private property, vetoed the demolitions.

The great fire of March 1843 started in a rich merchant’s building, but at first property owners and officials still cast *ranchos* and small shops as illegitimate threats to legitimate warehouses full of combustible merchandise. A dozen prominent landowners asked the intendant to move the smithies, bakeries, carpentry shops, and other small business they considered dangerous away from the large flammable ones they considered endangered. The customhouse superintendent signed the petition, but the national government quashed the plan.⁵³ The building regulations adopted soon after the 1843 fire ignored large warehouses and other typical elite businesses, but did ban the wooden balconies that often stuck out from the upper floors of expensive houses—a ban that was enforced.⁵⁴ In 1844, the city council systematized municipal regulatory power

in an ordinance on public safety, cleanliness, order, and traffic.⁵⁵ The nine fire-related articles targeted the spread of fires, not their ignition. Indeed, a ban on wooden roofs on one-story buildings forced some property owners to protect themselves and the whole city against sparks from other people's chimneys or burning buildings. Two provisions sought to prevent fires outright: semiannual chimney and stove cleaning and inspection, and a ban on fireworks and outside fires. Five other articles aimed to isolate inevitable fires by removing dangerous businesses from the center of town. Brick and tile kilns were banned from city. Workshops, bakeries, and other establishments using large or continuous fires needed a permit from the intendant. Except for small amounts for retail and private use, gunpowder was to be stored only in the municipal powder house. After a one-year grace period, "tar, pitch, turpentine, vitriol, spirits of wine, and other dangerous materials" would be banned from the dense Puerto business district except small amounts for retail; anyone storing such materials elsewhere was to notify the police. The one- and two-hundred-peso fines for illegal storage of explosives and flammable liquids were some of the highest in the entire city code. Even the eight-peso fine for not sweeping a chimney at the appointed time was double the maximum fine for illegal dumping, one of Valparaíso's most common and most criticized crimes.

In 1858, after two more great fires, a commission dominated by insurance company and fire department representatives proposed new fire regulations that focused not on kinds of buildings or classes of people but on parts of buildings and houses that these specialists' experience had shown to be dangerous. They called for forty-centimeter firewalls to stop fires from burning from house to house along wooden beams or decorations. They said that fires rarely spread in cities that required firewalls; they named no cities but seem to have been thinking of foreign ones. They banned wooden or combustible roofs and exterior walls, because these were likely to be set ablaze by the heat or embers from burning buildings. The commission thus proposed to require property owners to protect their own buildings from fire in order to protect the city from conflagrations. The commission proposed banning metal stovepipes because they "cause[d] most fires" and called for the creation of eight new alleys to enable the fire fighters to pump seawater.⁵⁶ At the same time, the fire department suggested several new wells for fighting fires when the sea was too rough to pump, as during the fire of 1858. The fire department hired contractors to dig eight wells in 1862 and dug more in the years that followed.⁵⁷

The city councillors agreed to require firewalls—which still punctuate the city's rooflines—and ban combustible roofs and siding, but left out the alleys for firefighting and the stovepipe ban for fire prevention. Expropriating land

for new alleys would have been expensive and legally difficult, but the fate of the stovepipe ban is mysterious. Surely building brick chimneys to replace iron pipes would be no more disruptive than building fire walls and removing flammable roofs and siding. Perhaps because the council remained skeptical about preventing fires from starting in the first place, or perhaps because it resisted interfering in individual affairs, the 1858 regulations still focused on containing fires rather than preventing them.

Nevertheless, the insurance companies and the fire department were changing the Porteño understanding of fire hazards. Both types of experts drew on local experience and a growing body of knowledge from abroad to prepare sophisticated assessments of specific fire hazards. Class still mattered in Valparaíso, but landowners and government officials no longer tarred the poor as automatic fire hazards. New technology, new knowledge, and new statist attitudes among officials inspired many new regulations in the following decades. Voluntary precautions also cut fire risks: a fire that burned ten houses in the wealthy hilltop neighborhood of Cerro Concepción, where fire engines could not reach, spurred masonry construction.⁵⁸

Gruesome evidence that shacks were not the only fire hazards came in December 1863, when Santiago's leading church, the *Iglesia de la Compañía*, burned during a mass celebrating the Immaculate Conception, the highlight of the Month of Mary. Some three thousand Daughters of Mary, members of a new religious society open to all classes, filled the church. When lit, one of the many kerosene lamps sent out a yard-long flame that caught the paper flowers that lined a nearby column. Within minutes the roof was in flames. Terrified women jammed the doors. Husbands, sons, brothers, and onlookers tried to pry them out, but two thousand died where they stood. The city's fire pumps were unstaffed and inoperable. Death touched nearly all of Santiago's 98,898 inhabitants. Bereaved anticlerical liberals blamed the church for negligently slaughtering women who should have been with husbands and families; some claimed the priest had killed some women by shutting the vestry door to protect church ornaments. The clergy called the fire an accident, and many female survivors defended their activities.⁵⁹ The Santiago elite formed a volunteer fire department within days. For the Porteños who crowded the telegraph office for news, the *Iglesia de la Compañía* underlined the dangers of large buildings and new fuels.

Santiago provided other reminders: the municipal theater burned down in 1870, killing a firefighter. Santiago's intendant from 1871 to 1875, the nationally famous writer Benjamín Vicuña Mackenna, put a monument on the site of the *Compañía* and hung one of the church's bells in the park he built on a downtown

hill.⁶⁰ He also proposed a central fire alarm bell on the hill and built a hilltop firefighting reservoir that he estimated saved the city government five to six thousand pesos a year in fire insurance on the new municipal theater.⁶¹ Valparaíso newspapers reported these events, and the ghosts of the *Compañía* inspired many new rules and the reinforcement of older ones.

The *Compañía* tragedy, along with others much less deadly, injected life safety into the contemplation of fire hazards. In 1871, *La Patria* called on the authorities to regulate Month of Mary celebrations, which it said still took place in overcrowded churches with too few doors and too many flames.⁶² In 1873, Intendant Francisco Echaurren sought a law to regulate theaters for the protection of audiences, actors, and theater buildings, claiming that Valparaíso's only theater "could disappear from one moment to the next if the best [fire] safety . . . measures [were] not adopted."⁶³ Congress passed such a law for Santiago and Valparaíso. While focused on order and morality, it required water tanks, fire pumps, and outward opening doors and banned smoking on combustible floors.⁶⁴

Ordinances of 1844 and 1852 restricted the storage of certain flammable substances, but new products created loopholes. In 1862, President José Joaquín Pérez upheld Intendant J. S. Aldunate's ban on storing oil in the central part of the city.⁶⁵ The order had come at the request of seven insurance representatives and prevailed over the protests of Luis Osthaus, who claimed that his warehouse, where lamp oil was soldered into cans, was no more dangerous than one containing cotton or wool—hardly a ringing endorsement. Kerosene was not in the 1852 ordinance, probably because city officials had never heard of this product of an infant industry. By the 1870s, kerosene lit houses and buildings of all kinds, especially those whose owners could not afford the luxury of gas. Stored and sold throughout the city, it was probably more common than the substances named in the ordinance, but neither the state nor the municipality regulated it. In September 1871, a fire in a building containing "a good number of cans of petroleum, which without doubt contributed to the growth of the fire," led *La Patria* to complain, "The authorities allow this kind of fuel to be deposited in the very center of our inflammable town."⁶⁶ Representatives of three Chilean insurance companies asked the president of Chile to ban or limit the storage of petroleum, "tar, tow, turpentine, and varnish," products they thought could cause some fires and make others worse.⁶⁷ In an 1871 decree, Echaurren added various substances to those restricted by the 1852 ordinance. In 1874, three small shopkeepers, fined for exceeding the limits on flammable materials, asked the president to revoke Echaurren's decree, waive their fines, and return "a case of Chinese rockets," four "cases of paraffin," and thirty-two

unspecified packets.⁶⁸ They claimed the decree hindered their business and infringed on their property rights. Echaurren insisted that his decree simply confirmed the 1852 ordinance, but he had in effect stretched the ordinance to cover not only materials that might cause fires but also some that would make them spread faster. He justified himself by citing “repeated fires.”⁶⁹

Echaurren, an example of what Patrick Joyce has called authoritarian liberals, zealously expanded government power over citizens.⁷⁰ One disgruntled opposition political organizer accused him of using fire regulations to obstruct his meetings, a believable allegation.⁷¹ However, his attempts at fire prevention met with less opposition than many of his other initiatives and gained the support of some otherwise intractable opponents. For example, *La Patria*, which regularly criticized Echaurren, pointed out the same problems that he noticed, even though it avoided praising his actions (for partisan political reasons).

National influence could obstruct local plans. By Echaurren’s time, the national government accepted fire-safety rules more than in the 1840s and 1850s, but remained skeptical of intrusive measures like taking land to widen streets. City councillors’ and intendants’ arguments that wider streets would help fight fires and (sometimes) that Valparaíso’s crowding and commercial activity required new rules, unfamiliar in Chile, had little effect until 1876, when Congress and the president passed a major law on street layout, urban planning, and building codes for the Almendral, Valparaíso’s largest flat area.⁷² This law’s fire-safety provisions would not change much for several decades. Governments turned their fire- and safety-related attention to the benefits and hazards of new water systems and electricity.

The 1906 Earthquake Tests Fire Protection

Whether because of fire walls; wider streets; restrictions on chimneys, stoves, boilers, and combustible goods; improved water supplies; or plain dumb luck, Valparaíso did not have another great downtown conflagration from 1858 until 1906, when the ruins of a neighborhood already leveled by earthquake caught fire. This conflagration tested many of the preparations Porteños had made over the previous decades. In terms of fire, the city failed. Those distraught firefighters who survived, like their equivalents in San Francisco earlier the same year, could do little with broken water pipes and battered engines. Many blocks in the Almendral, Valparaíso’s largest flat neighborhood, burned to the ground.

The near helplessness of Porteño firefighters against the fires of the 1906 earthquake underscores the fact that for some decades they had not normally

been helpless. Porteños had gained substantial control over what newspapers called “the voracious element” in normal situations. They retained some control even over the effects of catastrophes. Although three thousand people died in the earthquake itself, national and local officials, organizations, and citizens on the spot moved quickly to prevent disorder, provide food, ensure safety in refugee camps, and generally recover from the disaster.⁷³ Porteños had never prepared for an earthquake, and they could not put out this fire, but their decades of fire-fighting had prepared them to respond to disasters.

Nineteenth-century Chileans thought of Valparaíso as a fiery place. In fact, there were only half a dozen fires a year in the 1860s, and not many more as the city grew. However, responses to fire fundamentally shaped the city, which grew up with the Industrial Revolution and its techniques and technologies of firefighting, fire-resistive construction, and fire regulations. The volunteer fire department strengthened civil society and institutionalized interethnic cooperation in the cosmopolitan port city. The formation of fire insurance companies at a time almost without banks helped create Chile’s financial sector. Fire changed ideas about class, as well-to-do businessmen replaced the poor and artisans as the source of fire danger in the public imagination. Fire encouraged new tools of government: mapmaking, statistical recordkeeping, numbering of houses, expert functionaries, and new technology. Finally, fire was prominent in the web of regulations that municipal leaders created from the 1840s onward, imposing ever-stricter notions of order on the growing city and expanding municipal power.

NOTES

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1. Simon Collier and William F. Sater, *A History of Chile* (Cambridge: Cambridge University Press, 1996), 60–61. See also Eduardo Cavieres Figueroa, *Comercio chileno y comerciantes ingleses, 1820–1880: Un ciclo de historia económica*, Monografías Históricas 2 (Valparaíso: Instituto de Historia, Universidad Católica de Valparaíso, 1988), 73; Baldomero Estrada Turra, Eduardo Cavieres Figueroa, Karin Schmutzter Susaeta, and Luz María Méndez Beltrán, *Valparaíso: Sociedad y economía en el siglo XIX* (Santiago de

Chile: Instituto de Historia, Universidad Católica de Valparaíso, 2000); Primera Jornada de Historia Urbana, *Valparaíso 1536–1986* (Valparaíso: Universidad Católica de Valparaíso, 1987). The rich historical and architectural literature on Valparaíso by Chilean scholars and others is too extensive to list here.

2. In addition to the works listed in n.1, see Samuel Martland, “Trade, Progress, and Patriotism: Defining Valparaíso, Chile, 1818–1875,” *Journal of Urban History* 35, no. 1 (2008): 53–74.

3. Intendant to Minister, August 22, 1838, Archivo Nacional Histórico, Santiago, Chile, Ministerio del Interior (hereafter cited as MINT), 181:47 (vol. 181, p. 47; some volumes cited lack page numbers).

4. José María de la Cruz to Minister, March 16 and 20, 1843, MINT, 695:224, 229. The intendant acted as chief executive of the municipal government.

5. F. A. Pinto, Inspector de Guardias Cívicas, to Comandante Jeneral de Armas de Valparaíso [aka the Intendant] (hereafter cited as CJAV), April 25, 1843, Archivo Nacional Histórico, Intendencia de Valparaíso (hereafter cited as INTVALP), 34 (Pinto, like some other officials, signed with his first initials). The *fuero* was a set of legal privileges, notably the right to serve minor criminal sentences in the barracks, rather than in prison.

6. F. A. Pinto to CJAV, May 6, 1843, INTVALP, 34.

7. *Valparaíso English Mercury*, December 23, 1843, 1.

8. Pablo Gonzalez to Manuel Blanco Encalada, November 11, 1847, INTVALP, 203:175. The Chilean peso was worth between forty-four and forty-five British pence (about 91 US cents). In 1844 the city paid three pesos monthly for each of its 110 oil streetlights.

9. Anacleto de la Cruz, annual city council report, November 14, 1844, MINT, 212:208–10.

10. City council minutes, August 16 and September 13, 1844, MVALP, 15:105, 111.

11. Joaquin Prieto to Minister, February 21, 1845, MINT, 212:252; Juan J. [illegible], Brigada de Infanteria Cuerpo de Bomberos, report, December 7, 1846, attached to letter of Roberto Simpson, Interim Intendant, to Minister, December 7, 1846, MINT, 212:689.

12. Juan A. Vives to CJAV, September 5, 1848, MINT, 241:386.

13. For example, Juan A. Vives to Intendant, February 15, 1847, INTVALP, 65.

14. Comandancia de la Brigada de Bomberos to CJAV, February 25, 1845, Archivo Nacional Histórico, Municipalidad de Valparaíso (hereafter cited as ANHM) 8, part 3 (“Bomberos”), 1–7. Santiago’s fire regulations prescribed hats as the whole uniform; José de la Cavareda, Intendant of Santiago, to Minister, November 30, 1838, MINT, 181:89.

15. Vives, February 15, 1847.

16. Martín Stevenson, Captain, Brigada de Infantería Cívica de Bomberos, April 23, 1847, and Jose [illegible], Comandante de Serenos, [ca. April 24, 1847], INTVALP, 65.

17. *Memoria que el Ministro de Estado en los departamentos de Guerra i Marina presenta al Congreso Nacional de 1848* (Santiago, 1848), 6.

18. INTVALP, 65, *passim*.
19. Benjamín Viel, Inspección Jeneral de Guardias Cívicas, to CJAV, November 15, 1847, INTVALP, 34; *El Comercio*, November 23, 1847, 4.
20. *Memoria que el Ministro de Estado*, 6 and foldout chart.
21. J. Santiago Melo, Acting Intendant, to Minister, December 16, 1850, MINT, 265:162; Fran[cisc]o Delgado, Night-Watch Commander, to Intendant, December 16, 1856, MINT, 265:163; Melo to Minister of War, December 18, 1850, INTVALP, 73; Veno. Lorca to CJAV, December 18, 1850, Archivo Nacional Histórico, Ministerio de Guerra, 354.
22. J. Santiago Melo to Minister, December 23, 1850, MINT, 265:170.
23. J. Santiago Melo, decrees, June 9 and 13, 1851, INTVALP, 75; Juan A. Vives to CJAV, June 12, 1851, INTVALP, 65.
24. “Reglamento orgánico que ha formado el Directorio de la Asociacion Contra Incendios,” forwarded by Jovino Novoa, Intendant, to Minister, June 22, 1858, MINT, 393.
25. M. V. Castillo to Minister, December 17, 1857, MINT, 375; Superintendent of Sociedad Contra Incendios, report, November 14, 1858, in Jovino Novoa to Minister, November 15, 1858, MINT, 393.
26. Santiago’s fire militia was to drill two Sundays a month. José de la Cavareda, Intendant of Santiago, to Minister, November 30, 1838, MINT, 181:89–90.
27. Roberto Simpson, Interim Intendant, to Minister, February 21, 1852, MINT, 291:66.
28. Jorge Garín Jiménez, *Historia del Cuerpo de Bomberos de Valparaíso* (Valparaíso: Cuerpo de Bomberos de Valparaíso, 1998), 40; Carlos Fredes Aliaga, *150 Años de Honor y Gloria: Notas para una Historia de los Cuerpos de Bomberos de Chile* (Santiago: Junta Nacional de Cuerpos de Bomberos, 2004), 8–12; Amy S. Greenberg, *Cause for Alarm: The Volunteer Fire Department in the Nineteenth-Century City* (Princeton, NJ: Princeton University Press, 1998), 4.
29. Simpson to Minister, February 21, 1852.
30. Roberto Simpson to Minister, September 1, 1853, MINT, 291:506–7.
31. Garín Jiménez, *Historia del Cuerpo de Bomberos*, 91–92.
32. “Bomba Cousiño No. 3, Cuentas por pagar,” ca. December 23, 1858, Bomberos de Valparaíso, Archivo (hereafter cited as BV), Año 1862.
33. Naval War College (US), *International Law Situations with Solutions and Notes*, 1901 (Washington, DC, 1901), 28; José Ramón Lira to Minister, April 1, 1866, MINT, 492.
34. “No. 3, Cuenta de varios articulos comprados al contado,” ca. March 20, 1857, BV, Año 1862.
35. Cristián Gazmuri, *El “48” Chileno: Igualitarios, reformistas, radicales, masones y bomberos* (Santiago de Chile: Editorial Universitaria, 1992), 190.
36. Garín Jiménez, *Historia del Cuerpo de Bomberos*, 60–65.
37. J. S. Aldunate to Directorio del Cuerpo de Bomberos, November 22, 1862, BV, Año 1862.

38. Manuel Alcázar et al. to Secretario de la Asociación Contra Incendios, February 4, 1857, BV, Año 1858.
39. Julian Riesco to Minister, December 26, 1855, MINT, 300:671; Riesco to Minister, January 5 and 8, 1856, MINT, 375.
40. Jovino Novoa to Minister, November 15, 1858, MINT, 393; Jiménez, *Historia del Cuerpo de Bomberos*, 155–56.
41. Superintendent of Sociedad Contra Incendios, report on November 13 fire, November 14, 1858, in Jovino Novoa to Minister, November 15, 1858, MINT, 393.
42. De la Cruz, November 14, 1844, 208–9.
43. E. Lynch, proposed city council resolution, May 21, 1844, MINT, 212:190; Joaquin Prieto to Minister, June 24, 1844, MINT, 212:122; Prieto to Minister, November 26, 1844, MINT, 212:188; Irrarázaval [Minister of the Interior] and [Manuel] Montt [President of Chile], Decree, December 17, 1844, MINT, 212:189.
44. “Seguros mútuos,” *El Comercio*, July 24, 1848, 1.
45. “Worthy,” *Valparaíso Mercantile Reporter*, July 12, 1851, 4.
46. “Insurance Company for Chile,” *Valparaíso Mercantile Reporter*, July 30, 1852, 1.
47. “The Liverpool Royal Fire Insurance Agency” (advertisement), *Valparaíso Echo*, November 14, 1853, 5.
48. Jovino Novoa to Minister, November 22, 1858, MINT, 393.
49. For example, “Estado de las entradas y salidas del Cuerpo de Bomberos de Valparaíso en el año 1865,” *El Mercurio*, March 10, 1866, 2; *Informe sobre el estado y operaciones del Cuerpo de Bomberos de Valparaíso . . . 1871* (Valparaíso, 1872), Núm. 1; *Informe sobre la marcha y trabajos del Cuerpo de Bomberos de Valparaíso . . . 1897* (Valparaíso, 1899), 25.
50. *Valparaíso and West Coast Mail*, qtd. in “Compañías de seguros,” *La Patria*, May 19, 1870, 2.
51. “En Santiago,” *La Patria*, October 28, 1886, 2.
52. José María de la Cruz to Minister, November 26, 1842, with attachments, MINT, 695:128–29; de la Cruz to Minister, May 4, 1843, MINT, 695:275.
53. Josué Waddington et al. to Intendant, [ca. May 1, 1843], MINT, 695:276–77; José María de la Cruz to Minister, May 4, 1843, MINT, 695:275.
54. City council resolution, March 20, 1843, MINT, 203:6.
55. City council resolution, [ca. October 23, 1844], MINT, 203:30–31.
56. Jovino Novoa to Minister, November 22, 1858, MINT, 393.
57. B. Ventura Sanchez to Directorio del Cuerpo de Bomberos, January 22, 1862, BV, Año 1862.
58. José Ramón Lira to Minister, January 27, 1868, MINT, 527; Lira to Minister, June 11, 1870, MINT, 551.
59. Sol Serrano, *¿Qué hacer con Dios en la República? Política y secularización en Chile (1845–1885)* (Santiago: Fondo de Cultura Económica, 2008), 29–45; “Terrific Tragedy in Chili,” *New York Times*, January 18, 1864, 1.
60. Serrano, *¿Qué hacer con Dios en la República?*, 46.

61. City council minutes, June 7, 1875, Archivo Nacional Histórico, Municipalidad de Santiago, 262.

62. “No emendamos,” *La Patria*, December 9, 1871, 2.

63. Francisco Echaurren to Minister, May 12, 1873, MINT, 649.

64. “Ordenanza sobre policia interior i exterior de los teatros de Santiago i Valparaíso,” August 8, 1873, MINT, 660.

65. José Joaquín Pérez, presidential decree, with related documents, September 22, 1862, MINT, 434.

66. “Petróleo,” *La Patria*, September 26, 1871, 2.

67. Antonio Barrena, Manuel Montt Foro, and J. A. Gandara, petition to the president of Chile, [September 12, 1871], MINT, 625:220. London insurers, including some of the companies active in Valparaíso, had considered such materials—and others, including tea and sugar—dangerous for decades, though even in London their ability to influence their storage was recent. *Report H.R. 15 of Working Party on “The Development of Mercantile Fire Insurance in the City of London,”* by L. M. Wulcko, Chair (London: Insurance Institute of London, 1975), 20, 22–27.

68. J. M. Calleja to Intendant, August 14, 1875, MINT, 625:300; Comandante de Policía, report, August 21, 1875, MINT, 625:300.

69. Francisco Echaurren to Minister, September 27, 1875, MINT, 625:302.

70. Patrick Joyce, *The Rule of Freedom: Liberalism and the Modern City* (New York: Verso, 2003).

71. Sociedad Republicana Francisco Bilbao, petition to president of Chile, [ca. August 25, 1873], MINT, 625:176–82; Sociedad Republicana Francisco Bilbao, petition to the president of Chile, [ca. August 22, 1873], MINT, 625:170; Francisco Echaurren to Minister, August 23, 1873, MINT, 625:172–75; and Echaurren to Minister, August 26, 1873, MINT, 625:183.

72. Samuel Martland, “‘Every Class of Guarantee and Security’: Urban Growth, Technology, and Government Power in Mid-Nineteenth Century Valparaíso,” paper presented at the Twenty-Seventh International Congress of the Latin American Studies Association, Montreal, 2007.

73. I examine the immediate response in “The Valparaíso Earthquake of 16 August 1906,” in *Aftershocks: Earthquakes and Popular Politics in Latin America*, ed. Lyman Johnson and Jürgen Buchenau (Albuquerque: University of New Mexico Press, 2009); see also Samuel Martland, “Reconstructing the City, Constructing the State: Government in Valparaíso after the Earthquake of 1906,” *Hispanic American Historical Review* 87, no. 2 (2007): 221–54.

The Burning of a Modern City?

*Istanbul as Perceived by the Agents
of the Sun Fire Office, 1865–1870*

CORNEL ZWIERLEIN

In the postcolonial theoretical debate, it has become common to postulate the diversity of modernity, to seek and find multiple modernities instead of searching for the spread of a single European/Western modernity.¹ There is not just one way to modernity; there are many ways to and also many kinds of modernity, even if in some respects it may be possible to detect an accidental, factual precedence of Europe. On the other hand, post-postcolonial questions have meanwhile been raised as to whether it may no longer be possible to take seriously any historical perceptions of differences in “development” or “civilization.”² Are we not allowed to postulate that a city which is constantly threatened by the danger of a total conflagration is not a modern city? Lionel Frost and Eric Jones, economic historians untroubled by postcolonial reflections, suggested in 1989 such a relationship between the (Western) modernity of a city and its vulnerability to great conflagrations: modern cities in their perspective belong to the realm of the opened “fire gap,” where the paradoxical discrepancy between the huge explosion of population in the nineteenth century and the decreasing risk of big conflagrations appeared.³ Lionel Frost and Eric Jones do not set out to define the term “modernity”; they just speak of the growth of “durability” of nineteenth century cities. By also including Third World cities

in their reflections, however, they clarify that by analyzing the emergence of the “fire gap” they intend to treat a very general, perhaps universal division between preindustrial and “modern” cities. Surely fire resistance will never be the only criterion of modernity, and there were also premodern cities that did not burn extensively, but the common experience of Western cities is that major conflagrations do not happen anymore, if we exclude slum fires, times of war, and post-earthquake fires. So at a first look, the occurrence or nonoccurrence of a major conflagration seems to be today an—horribile dictu—objective yardstick to “measure” the modernity of cities. This, however, does not exclude the possibility that if we find in nineteenth-century sources derivations of that yardstick applied by Western observers and travelers in their description of non-Western and colonial cities, we are facing classical “Orientalist” modes of perceiving.

By taking up the issue of the relationship between “modernity” and the fire history of cities with regard to Istanbul in the years 1864–70, I will show how we cannot escape this double problem of judging the modern character of cities by their exposure or nonexposure to conflagration risk either today, *ex post*, and in the nineteenth century, *ex ante*. I use for this purpose archival material from the Sun Fire Office, the biggest British fire insurance company at that time. Ulrich Beck employs the question of insurability by private insurance companies as a litmus test to differentiate between the epochs of first and second modernity.⁴ Historically, the first decisive issue is how the agents of an insurance company specifically inscribed this border between insurability and uninsurability into the city space as a border between areas, between cultures, and between pre-modernity and modernity.

The fire history of Middle Eastern cities is seldom treated explicitly as a distinct research topic. Besides the still-important study of Zeynep Çelik on the planning and building history of modern Istanbul, which gives the role of conflagrations substantial treatment, recent publications treat only the early modern fire history of Istanbul and Damascus.⁵ Until now, fire insurance archival material has not been used in this field of research. Those sources will reveal also a possible double significance: on the one hand, it is material to be used for the reconstruction of—in our case—Istanbul’s fire history itself: as the insurance agents provided themselves with local information, their records sometimes allow an even denser description of “what really happened” than the material Çelik had at hand. On the other hand, a good part of the material to be presented here is deeply saturated with a British Orientalist perspective on the Near East in the nineteenth century, and we can detect in it the early application of the “fire-safety yardstick”—and its failure because of certain

autosuggestive overestimations of the achieved modernity of the so-called European part of Istanbul.

Urban Reform in Nineteenth-Century Istanbul

Istanbul—or Constantinople, as it was always called in English sources—underwent rapid population growth in the nineteenth century: in 1840 it had about 400,000 inhabitants; in 1886 in the official census 873,000 inhabitants were counted, 44 percent Muslims, 17.5 percent Greeks, 17.1 percent Armenians, 5.1 percent Jews, and 15.3 percent foreigners. So the balance between Muslim and non-Muslim population was equal.⁶ While the population of the Stamboul quarter was mainly Muslim, non-Muslims lived mostly in the quarters of Galata and Pera on the other side of the Golden Horn. The Ottoman Empire opened up to Western influence on an economic and a general cultural level at the end of the 1830s: An Ottoman-British commercial treaty was established in 1838 and followed by treaties with other nations.⁷ On November 3, 1839, Sultan Abdül Mecit (r. 1839–61), with the assistance of the European ambassadors, proclaimed a decree (Hattı Şerif) making the politics of opening to Western influences official and declared himself as an enlightened emperor: the so-called *Tanzimat* period of reforms and approximation to the West had started. One of the first acts by the grand *vezir* Mustafa Reşit Paşa was to charge the German Helmut von Moltke with outlining a renovation scheme for the whole city. Moltke started by drafting a plan of the city at the standards of highly developed contemporary German cartography, which, even though his project to improve the street network was ultimately not implemented, remained the central starting point for further projects. Throughout the 1840s and 1850s, the aims and the general direction of urban reform in a Western direction were somewhat unclear, as Christoph Neumann has pointed out: “In the 1850s the radical restructuring of European metropolises had only begun. In 1853 Georg Eugène Haussmann had been appointed prefect of Paris. The demolition of the Vienna city walls and the construction of the Ringstraße, which usually are taken to signify the starting point of the reshaping of modern Vienna, happened only in 1858. So Istanbul invented its own modernity at the same time as the other European capitals. The provisory İntizam-ı Şehir Komisyonu (Commission for Urban Order) had no money, no executive powers, and no model to imitate.”⁸ Thus, at first glance, Istanbul seems to have stood on equal terms with northern European cities.

The pilot quarter of Istanbul urban reform was the Sixth Municipal District (Altıncı Daire-i Belediye) created by statute on December 28, 1857. It was to be one of fourteen new districts of Istanbul yet to be founded, but the number six was also assigned to it with allusion to the famous Parisian *quartier sixième*, which figured also as a pilot district in Paris. The Sixth Municipal District was formed by the quarters of Galata and Pera/Beyoğlu, it was a structure of self-government with its own right to determine budget and taxation and two official languages, French and Turkish—and in practice, French dominated. Galata and Pera were the old Genoese quarters of Istanbul where rich European merchants and bankers lived. The administration of the district was composed of a director and eight regular and four consultant members. They belonged mostly to the thin non-Muslim upper class of the trade and finance sector of Galata and Pera, including such men as Antoine Alléon, Avram Camondo, Cermanos Havva, and the English banker Charles S. Hanson, the last of whom played an important role in the foundation of the Ottoman State Bank.⁹ In 1860 the self-government institution of the Sixth District had seventy-seven employees under contract. Its task was foremost the reordering of the cityscape: the council planned and enlarged what was known as the “Grand rue,” built a plaza in Karaköy, widened the streets between that plaza and the Tophane and between the old Unkaparı and the new Galata bridge, adapted the canal system, and introduced street lighting. Under the rule of the future mayor of all of Istanbul, Server Efendi, it decided to demolish the Galata city walls in 1863–65 and started a cadastral survey. The city experienced “from 1865 to 1869 . . . the most active phase of urban planning” in the nineteenth century.¹⁰ Many foreign architects collaborated in the reshaping of Istanbul—and especially of Galata and Pera—in diverse European styles mixed with a new Orientalist style.¹¹ As the records of the Sun Fire Office show, the progressive administration of the Sixth District also introduced the maintenance of certain statistics, including statistics on fires and buildings damaged by fire. In 1868 the successful administration scheme of the Sixth District was to be transferred to the city as a whole, but this attempt failed. In 1870 the districts were reorganized under the more direct rule of the Istanbul mayoralty known as the *şehremaneti*.

As Çelik has shown, fires and conflagrations played a crucial role in the process of urban reform: they provided the modernizers accidentally but efficiently with tabula rasa zones on which to work. Between 1633 and 1839 109 large fires were recorded, and 229 between 1853 and 1906: “Major fire therefore played the greatest role in the transformation of the urban fabric.”¹²

But despite all the elements of urban reform, in the outside perception, the horror of these frequent conflagrations prevailed; they were interpreted as clear signs of the backwardness of the city. Among world metropolises, Istanbul seemed to be one of the most vulnerable to fires. The British author Edward Lear gives a good example of that perception. In 1848 he wrote to his sister Ann describing a fire that destroyed three hundred houses in Pera prior to its election as a part of the Sixth District: “The houses fell crash, crash, crash, as the fire swept on nearer & nearer.” He introduced this personal impression with a general remark on the conflagrations in Istanbul: “I must now devote a word to conflagration general & especial. You know that nearly all the houses in Constantinople are of wood—and you may have heard of the frequency of fires, & their extent, but you will not be surprised to hear that since I came—(Aug 1st) there have been 8 dreadful burnings—the least of which destroyed 60, & the largest 5,000 houses—and reduced hundreds and thousands to wretchedness.”¹³ The high frequency and the scale of fires in Istanbul made a strong, nearly shocking impression on the Englishman. In this city, opening up to Western, “modern” influences but still burning frequently, the British fire insurance companies tried to establish business.

The Sources of the Sun Fire Office

Until the nineteenth century, the British fire insurance companies had conducted their business almost exclusively in the British Isles. The Phoenix Assurance Company had been the first to draw up policies outside Europe, beginning in the United States between 1782 and 1785, and it soon built a network of agents predominantly within the British Empire. Other British fire insurance companies emulated the Phoenix. The oldest still in operation and the largest fire insurance company, the Sun Fire Office, was relatively late to follow this example. Its first decision to expand was taken in 1836, but the drive toward globalization only made a lasting impact from about 1850, at the same time as the rest of the insurance market.¹⁴

Besides business balances, management minutes, and some correspondence, a very precious genre of sources for observing the globalization of this business can be found in the archives of the Sun Fire Office: the so-called memorandum books. Running to roughly three hundred volumes, each with some two hundred to four hundred pages consisting of detailed reports on foreign agencies, these describe, inter alia, the extent of local fire insurance, fire brigade provision, and

recent notable fires. Usually the volumes were compiled following the inspection of an agency by visiting members of the Foreign Department (often by Francis Boyer Relton, foreign clerk since 1837 and foreign superintendent from 1868 to 1873, and George Saward Manvell, foreign clerk since 1864 and foreign superintendent from 1873 to the 1880s). Along with handwritten analyses by the men at the place and by the members of the Foreign Department in London, the volumes often contain sketch plans, photographs, newspaper clippings, printed circulars, and statistics. Those volumes functioned as a sort of steadily growing special encyclopedia and in-house knowledge resource for the London headquarters of the company. It was strategic knowledge about the hundreds of places on the globe where the insurance company was active, a form of global economic memory. They were used by P. G. M. Dickson in his monograph on the Sun Insurance Office, but they still contain a huge bulk of unused material.¹⁵ The agency made them accessible to the public in 1994 when they were handed over to the Guildhall Library in London. The ten volumes on Constantinople form the core of sources on which this essay draws.¹⁶

The Installation of the Sun Insurance Company in Constantinople

Istanbul was not one of the first cities in which the Sun was active outside Europe.¹⁷ The previously mentioned Ottoman-British commercial treaty of 1838 and the political reformist tendency of the Tanzimat after 1839, however, as well as the construction of the first railway line in the Ottoman Empire, the British-built İzmir-Aydın line begun in 1856, created new interest in the Ottoman Empire among London business circles. The Sun acquired an agent in the economic center of İzmir/Smyrna in 1863, three years before the opening of the railway line; from there the most important cities of the Middle East were opened up for European commerce, with Istanbul/Constantinople leading the way from 1864 onward.

In June 1864, the company sent an employee named Woods to Constantinople to draw up an analysis of where and how it could install itself in the city.¹⁸ Other insurance companies were also considering starting business in Constantinople (the Imperial, the North British and Mercantile, and the Royal). The introduction of these insurance companies at this time shows that enterprises in London hoped to participate profitably in the general process of economic and cultural development. Woods was able to acquire some historical and current

statistical material concerning the frequency of fires. For example, he found a list, of unknown origin, of large fires in the eighteenth century, which should really have made a fire insurer queasy right from the start:¹⁹

1729	12,000 Houses
1745	Fire 5 days
1749–50	12,000 Houses
1750	10,000 [Houses]
1751	4,000 [Houses]
1756	500 [Houses]
1756 July	15,000 [Houses]
1761	large Fire
1765	[large Fire]
1767	[large Fire]
1769	[large Fire]
1771	[large Fire]
1778	2,000 Houses
1782 Feb	600 Houses
June	7,000 [Houses]
August	10,000 [Houses]
	50 Mosques
	100 Corn mills
1784	10,000 Houses
1791 March & July	32,000 [Houses]
1792	7,000 [Houses]
1795	7,000 [Houses]
1799 Pera	1,800 Houses & other Buildings

Second, with regard to recent years, he found a record of 13,750 houses burned down in the district of Pera from 1841 to 1848.²⁰ For the last four years, 1859 to 1862, Woods managed to find an exact statistic recorded by the reformed city administration of the Sixth District (Galata and Pera), in which “only” 337 houses were listed as having been destroyed by fire. This included a detailed description of their construction and of the destroyed and rebuilt areas, with the conclusion that this district had ultimately grown as a result of these fires.²¹ Thus it is clear that contemporary observers themselves recognized the productive effect of the fires.

At the same time, however, the uncontrollable character of the fires made observers insecure about the city. Woods himself, in the short time he spent in



Figure 4.1. “Typical Wooden houses in the Stamboul district of Istanbul.” (LMA CLC/B/192/019/31522/259, p. 121. Reproduced by permission of RSA Insurance Group PLC and London Metropolitan Archives, City of London Corporation.)

Constantinople, witnessed a fire in the old town that “within 3 hours burnt out 500 families, about 300 houses, 80 of these families were Greeks.”²² Woods makes observations about the firefighting techniques of the Ottomans: the dry or demolition extinguishing technique of the Turks, which chiefly entailed pulling down houses and only to a secondary extent the use of relatively ineffective small portable water syringes, seemed to him backward and inefficient, and he urged the managers to establish a company fire brigade that relied more on water hoses.²³ We find also photographs of typical wooden houses in the Stamboul district of Istanbul that showed the London managers how vulnerable those streets must have been to fires (fig. 4.1).²⁴

Only the Sixth District, the area of the city elected for modernization, seemed to be a secure starting point for insurance business. Woods provided himself with a German map of the Sixth District drafted in 1861 by C. Stolpe (with German and French inscriptions). Already in the original print, “Muslim”



Figure 4.2. Map used by Woods to separate insurable (dark areas) from uninsurable blocks of houses; the marking of Christian quarters and Muslim ones appear in the original print. (LMA CLC/B/192/019/31522/257, Appendix. Reproduced by permission of RSA Insurance Group PLC and London Metropolitan Archives, City of London Corporation.)

and “Christian” blocks of streets were divided visually by color according to the habitual division that reigned in the city.²⁵ Woods now walked through the whole district, analyzed all the streets, and marked in the blocks where the building stock was in his opinion good enough to be insurable; in any case this only applied to Christian blocks according to Woods.²⁶ In Pera and in Galata—in the latter quarter, nearly all houses were built of stone—he applied yet another criterion of discrimination: “I have rejected these portions of Galata & Pera where there is either a great mass of very inferior wooden buildings or where the Houses, stone or wooden, are devoted to drunkenness [*sic*] or debauchery—for the former reason I have omitted to color nearly the whole of the district which lies on the north side of the Grande Rue de Pera for the latter reason, I have omitted several blocks which are entirely given up to people of bad character.”²⁷

The heuristics of insurability thus spatially extract the supposedly secure Christian-European, stone-built, and morally civilized “modernity” from the closely contiguous plurality of “nationalities,” cultures, and in some respects even “epochs.” In an anonymous newspaper clipping glued into the memorandum books, “street scenes in Constantinople” are narrated by describing “Turks with turbans and modern Turks with no trace of garb to distinguish them from the Giaour save the scarlet fez” together with Albanians, Jews, Maltese, Frankish

merchants, English sailors, and German clerks.²⁸ Another clipping states that there “must be deeper changes going on below the surface of Turkish social life” and describes “modern Turkish merchant[s]” as looking like Parisians, not like an “Oriental elder.”²⁹ Such was the European press’s perception of the Tanzimat reforms, but in the end, after Woods’s report, the London headquarters reached the following judgment: “In Stamboul, the old regime intractable Turks are ruling—Kismet renders them indifferent to all things.”³⁰ The decision about whether houses were “insurable or not” (fig. 4.2) thus reflects the insurance agents’ views of what Edhem Eldem has called “the cultural and mental divide of tradition/modernity” in the character of the “physical topography of the city.” As Eldem has shown, the city seemed to be divided into “modern” districts and “islands of tradition” or of “exoticism.”³¹

The Hokapaşa Fire of 1865 and the Pera Fire of 1870

The size of the eighteenth-century fires listed in the table above showed how cautiously one had to proceed in Istanbul: that century saw the equivalent of ten fires the size of the famous Great Fire of London of 1666 (in which ca. twelve thousand houses were destroyed)—fires that are almost unknown in European historical memory.³² Only a year after Woods’s report, in 1865, several severe fires were observed, including a fire on August 10 during which the old Seraglio Palace was largely destroyed. Then on September 5–6 came the largest fire in Istanbul’s old town. Early, high estimations cite 8,000 destroyed buildings; later estimations indicate 2,744, including 1,879 residential buildings and 751 shops.³³ On the occurrence of this fire, the English newspapers gleefully made comparisons with the double catastrophe in London of 1665/1666: just as then, in early September, the Great Fire had followed the terrible plague epidemic, in Constantinople a large cholera epidemic had preceded the present fire. The comparisons unambiguously suggested that the condition of Constantinople in matters of firefighting and administration was likewise “two hundred years behind”; jokes were made about the small handheld water syringes carried by running soldiers, which were described as more appropriate to Oriental folklore and compared with the English fire-extinguishing techniques of the seventeenth century.³⁴

In the British newspapers, which the Sun employees searched for clippings to be glued into the memorandum books, grand urban planning visions à la Haussmann were immediately kindled, which could now be implemented in the burned-down areas of Istanbul; some observers even expressed regret that

more of the city had not fallen victim to the flames. Other voices in turn morally reprimanded the cynicism of those who looked over the heads of the ruined population “to fondle future landscapes from imaginary minarets.”³⁵ In fact, the rebuilding commission worked relatively successfully until 1869. The Western attitude of disdain toward the situation of the Muslim and Armenian parts of town was an easy one to adopt because the fire had broken out in “one of the most crowded and dirty districts of the old city” in which a majority of buildings were still made of wood.³⁶ By the same token, it was imagined that the “professedly better-off quarter of Pera” was far superior in comparison: while three large insurance companies (Royal, Imperial, Sun) had been operating in Pera and Galata for two years, they would “naturally shrink from having anything to do with wooden-built Stamboul.”³⁷

Almost five years later, however, observers were disabused of this notion by a conflagration in Pera itself, when on June 5, 1870, around eight thousand houses burned down and some 1,300 people died—in those areas in which stone housing was already dominant and which Woods had counted among the “insurable.”³⁸ In the five years since establishment of the insurance offices in Istanbul, however, only a few houses had yet been insured, so that the first estimations of the amount of loss to the insurers (£30,000 Royal, £25,000 Imperial, £26,000 Sun) came to only a minimal value in comparison with the estimated total damage of £6 to 7 million. In fact, only twenty of the houses insured by the Sun were affected, with a damage amount of £17,174 (fig. 4.3).³⁹ Again, the British commentators lamented the deficient fire brigades; an engraving in a British newspaper at the time of the Pera fire of 1870, which is to be found in the Sun memorandum books (fig. 4.4), looks like the exact visualization of a similarly Orientalist description of the Galata fire brigade by Edmondo de Amicis in his *Constantinople* (1878):

Tulumbadgi! Firemen—cried one of the watchmen on the bridge. We drew on one side. A horde of half-naked savages, with bare heads, and hairy breasts, reeking with sweat, old and young, blacks, dwarfs, and hirsute giants, with such faces as we are wont to assign to assassins and thieves, four of whom bore upon their shoulders a small engine or pump, that looked like a child’s bier; armed with long hooked poles, coils of rope, axes, and picks, they passed before us, shrieking and yelling, with dilated eyes, flying hair, and trailing rags.⁴⁰

After the Pera fire again, urban planning visions were kindled on this scorched tabula rasa; most of these, however, were never carried out, and the special administration of the Sixth District was disbanded again in the same year as



Figure 4.3. Fire damage area in Pera 1870, contemporary map. (LMA CLC/B/192/019/31522/260, p. 149. Reproduced by permission of RSA Insurance Group PLC and London Metropolitan Archives, City of London Corporation.)



Figure 4.4. Turkish fire runners with handheld water syringes. (Engraving from British newspaper, 1870, in LMA CLC/B/192/019/31522/261, p. 11. Reproduced by permission of RSA Insurance Group PLC and London Metropolitan Archives, City of London Corporation.)

the fire.⁴¹ The rebuilding of Pera proceeded haltingly. Comparisons were made with Chicago, which also burned down in 1870: thirty months after that fire eighteen thousand houses had been rebuilt there (“1 house rebuilt every hour, exclusive of Sundays”), while in Pera, after forty-seven months, only six hundred had been rebuilt (“1 house rebuilt every 56 ½ hours”).⁴² While the Western journalists presented a view of Chicago’s fire as a massive side effect of the equally massive growth of a previously unknown type of modern city, Pera’s fire became for them a clear indicator of the limited modernization capacity of its city.⁴³

The sober figures of the insurance company reveal that the Pera business was unprofitable in the end. But at first, right after the fire, the agents in Smyrna, Henry & Rose, had still judged conflagrations to be “quite an exceptional occurrence” and “the field of insurance in Constantinople” as now “favorable for operations,” since, in the insurers’ experience, there was always a rush to acquire insurance policies immediately after a conflagration, while the population still felt terror in their bones.⁴⁴ And indeed, the insurance company did seem to profit at first: the sum insured soared from £146,176 in 1869 to more than ten times that sum (£1,554,247) within four years after the Pera fire. After a further year of extensive damage (1874), however, it decreased to half this maximum rate by 1879. After fifteen years of activity in Constantinople, the total premium revenue of 1865–79 was only minimally higher than the sum of damages paid out (approx. £76,750 to £74,434).⁴⁵ The high fire risk of the city was therefore reflected in what was, after initial attempts, a defensive underwriting strategy. Policies were signed for only a few “European” “good risks,” and the business was of low profitability. Also there was no expansively growing market as in North American cities; even after the revolution of 1908, a further conflagration occurred in 1918, burning down over seven thousand houses.

Fires and Orientalist Perceptions

Fires seem to have been an endemic, progress-inhibiting problem of the city, rather than an opportunity—or if the latter, then only in the micro-arena of a collective form of action taken by ethnic groups and religious communities, who had made the endemic aspect of this situation a fairly constant factor in the calculations of their mode of building and living. Marc David Baer has shown how, in the case of Constantinople’s largest fire in 1660 (280,000 houses destroyed, 40,000 deaths), previously Christian and Jewish properties were

Islamicized by the Ottoman Porte in the rebuilding process.⁴⁶ Similarly, the great fire of June 4, 1696, at Galata was perceived as a punishment from God for the “blasphemy, impiety, superstition, idolatry, and adultery” of the Jews and Christians who had taken possession of many houses in the quarter. The sultan ordered the confiscation of all burned Christian and Jewish houses to Islamicize the area.⁴⁷ But about two hundred years later, Woods perceived an opposite tendency after the many “small” fires affecting some hundreds of houses in Istanbul, in a similarly plural ethnic and religious situation—the active protagonist here was not, however, the state, whose Western-oriented urban concepts did not have a really comprehensive effect, but rather the collectives of “nations” or “millets”: “The Fires appear to act as the Pioneers of other Nationalities & amongst the Turks. The Turks allow the Jews to settle amongst them, & the Jews do not object to Greeks amongst themselves, so by degrees the Quarter becomes a mixed Jewish & Greek quarter & these two nations side by side help one another to shoulder out the Turk. Other nations eventually inhabit the ceded Quarter, & so the whole of Stamboul seems likely to undergo in time a total change.”⁴⁸ If even at a time of catastrophe the differences between the “nationalities” did not disappear, for the insurance agents the knowledge of these local differences, customs, and also the various jurisdictions within this barely comprehensible city were important. Accordingly, they sent to their headquarters, as well as purely statistical material and information about building stock, cultural information about the ethnic, religious, and national plurality in Constantinople.⁴⁹ However, this information was on a rudimentary level that did little to alter the strongly Western, Orientalist point of view.

Thus, in Woods’s report, “nationality” refers, on the one hand, to the “millets,” the officially recognized, corporately composed groups of non-Muslim subjects of the Ottoman Empire, and, on the other hand, to citizens of European countries. There is an explicit reference, for example, to a consequence of the Greek national struggle for freedom of 1821: the houses, shops, and goods belonging to Greeks—who had settled there largely under Selim III (1762–1808, governed 1789–1807)—had been beset in a pogrom-like manner during the Greek uprisings in Constantinople. In reaction to this, a large number of the rich Greek traders had adopted a new nationality (French, Austrian, English, or Russian) in order to enjoy the corresponding legal protection. Here, therefore, there was a leap—from one street to the next—from the old confessional “millet” corporation/nationality to a nationality in the state system of the modern era. In the mid- to late nineteenth century, then, in spite of simultaneously occurring processes of nationalization, the premodern concept of *natio* was here still interwoven with the modern concept of nation.⁵⁰

When considering the facts and these British perceptions of Istanbul's fire history, one might at first conclude—unless one dismisses everything observed, including the fire data and the photographs of the fire scenes of 1865–1870, as distorted—that Istanbul was not yet a “modern” city, if we apply the yardstick of the absence of large fires. “Safety” and “modernity” had not yet come into equilibrium in Constantinople: the existent forms of modern planning, modern self-reflection, and a modern belief in progress, which were inherent in the process of urban reform, did not result in durable fire safety. Elements of “premodernity” and “modernity” were interwoven here on the material level of building stock just as they were on the confessional, ethnic, and national level. Constantinople did not yet pass the litmus test of fire safety; it still stood on the wrong side of the “fire gap.”⁵¹ And that yardstick was applied already by the insurance agents of Sun, who divided the city into spaces of insurability and of noninsurability, dividing as such also between Western modernity and non-Western—Muslim, Greek, Armenian, and Jewish—backwardness.

On another level, however, it is necessary to question the perceptions of the Sun agents and their London headquarters and of British journalists. Clearly, the images of Ottoman firefighters running barefoot formed part of the picturesque image of the Orient from the colonial perspective, really a classical Orientalist perception in the sense of Edward Said.⁵² But the analytic categories of the Sun agents were themselves remarkably simply constructed. Woods's conviction that it would be possible to carry out a profitable insurance trade in the Sixth District if only the spatial demarcation made was sufficiently accurate because that district was the newly elected “modern,” “European” part of the town, proved in the space of six years to be completely untrue. The map drawn up by Woods functioned as an instrument of orientation in tracing, to the inch, the spatial separation between “premodernity” and “modernity.” But this attempt was a failure; it was an unfounded suggestion of planning security fostered by the self-proclaimed modernity of Galata and Pera.

The point is therefore not only that the Christian part of town was wrongly categorized here as “modern,” while, from the British perspective, this part of town too should have been categorized as “premodern.” The point is rather to analyze the British perceptual models in a far more general way. Indeed, with hindsight it is astonishing how little the globalization of a company such as Sun in the second half of the nineteenth century was carried out on the basis of what can be deemed “scientific rationality,” for example, by means of reliable fire-statistical advance calculations, which one would imagine to be among the elements of a Weberian “rational modernity.” Instead, this globalization took place in the form of a massive trial-and-error process. It was not until twenty

years after their installation in numerous cities of the colonial world that the insurance companies had gathered enough data to enable them even to compare global differences in fire risk. This was possible by means of the so-called loss ratio, the relationship between premium revenues and damages paid out in any given city.⁵³ This revealed that the most profitable cities did have a very high loss ratio of about 60 percent, for example, New York and also Hamburg. Here, there were frequent fires, but—with the exception of the Hamburg fire of 1842—these fires could usually be localized, so that although the damage amounts paid were considerable, the business remained profitable because the constantly high fire risk also compelled city dwellers to take out fire insurance policies. But Istanbul was marked by a loss ratio of 97 percent; that is, the insurance company there was taking a loss, taking into account the agency's business expenses. This was the case although, as we have seen, insurance trade was carried out only in the "Christian" parts of town. The Indian colonial cities of Calcutta, Bombay, and Madras, on the other hand, presented minimal loss ratios of an incredible 0 to 10 percent; these cities, with their damp monsoon months and houses built of nonflammable teak and *chunam* mortar, simply did not burn, and this was true of *black* as well as *white* towns, at least outside the slums.⁵⁴ Here, the fire insurance business quickly reached a level and then stagnated. This is a further argument against creating a simple category of "Asiatic cities" from Istanbul to Tokyo, as Lionel Frost has done.⁵⁵ Indian cities must be categorized, in fire history terms, quite differently from cities such as Istanbul. This knowledge, which was not available to the Sun Fire Office until twenty years later at the end of the nineteenth century, also shows, however, that the Western actors of globalization themselves were, with regard to orientation, protagonists of a rather unreflexive cowboy-style "modernity" that was not so impressively superior at all. Indian home owners knew well enough, and better, why they didn't need any fire insurance. In Istanbul, the insurance firms thought that through expansion the market could become profitable. Thus they argued after the two big fires of 1865 and 1870 that now, finally, the householders should insure their property; even the loss of lives could be reduced by insuring because the insured house owner could concentrate completely on saving of lives in the case of fire. But they lamented the small number of clients:

This backwardness of local householders to insure might be intelligible if it were necessary for them to form, as we in England had to do, the Company or association with which to effect the insurance. But such is not the case. English Companies of the highest standing and of unquestionable solvency, have established agencies here, and insure every description of property at reasonable

rates of premium; safety is brought to the very doors of the citizens of Constantinople, who notwithstanding, take as much wooing and appear to be as coy as maidens with their first love.⁵⁶

In the aftermath of the two great fires, the insured total sum of the Sun agency increased nearly tenfold between 1869 and 1874 but decreased with nearly the same speed back to half in 1879.⁵⁷ Still more fires showed the Sun that a politics of expansion was not advisable. In 1892 the first national insurance institution was founded, the Société Générale d'Assurances Ottomane, which quickly became the biggest insurer on the market.⁵⁸ But well after the end of the Ottoman Empire, Istanbul was afflicted again and again by huge fires.

In conclusion, we may say that, on the one hand, from a statistical point of view and in the long run, we may still use, as Frost and Jones, the absence of extensive fire risk as a yardstick for the “modernity” of a city. On the other, however, we must complexify that vision. The heuristics of insurability applied by the Sun agents were more autosuggestive and normative than empirical. The knowledge machine of the insurance enterprise was less mighty than the convictions expressed by its actors would lead one to expect. So the historical self-consciousness of “modernity” does not translate well into a categorical division between “modernity” and “premodernity” that we may use as analytical categories. If we look beyond the suggestive graphs of the fire gap of Frost and Jones, the cultures of building, living, preventing fires, and coping with fire damage could be so different and so closely interwoven in the same city that the perceptual split between modern and premodern reveals part of the story rather than a tool with which to analyze it.

NOTES

1. Shmuel N. Eisenstadt, “Multiple Modernities,” *Daedalus: Journal of the American Academy of Arts and Sciences* 129, no. 1 (2000): 1–29; Shmuel N. Eisenstadt, *Multiple Modernities: A Paradigm of Cultural and Social Evolution* (Frankfurt: M. ProtoSociology, 2007). Cf. Cornel Zwierlein, *Der gezähmte Prometheus: Feuer und Sicherheit zwischen Früher Neuzeit und Moderne* (Göttingen: Vandenhoeck & Ruprecht, 2011), 7–15, 315–58.

2. Barbara Weinstein, “Developing Inequality,” *American Historical Review* 113, no. 1 (2008): 1–18.

3. L. E. Frost and E. L. Jones, “The Fire Gap and the Greater Durability of Nineteenth Century Cities,” *Planning Perspectives* 4 (1989): 333–47.

4. Ulrich Beck, *Weltrisikogesellschaft: Auf der Suche nach der verlorenen Sicherheit* (Frankfurt: M. Suhrkamp, 2007), 239.

5. Marc David Baer, "The Great Fire of 1660 and the Islamization of Christian and Jewish Space in Istanbul," *International Journal of Middle East Studies* 36 (2004): 159–81; Doris Behrens-Abouseif, "The Fire of 884/1479 at the Umayyad Mosque in Damascus and an Account of Its Restoration," *Mamlūk Studies Review* 8 (2004): 279–97; Anna Akasoy, "The Man-Made Disaster: Fire in Cities in the Medieval Middle East," *Historical Social Research* 32 (2007): 75–87.
6. Robert Mantran, *Histoire d'Istanbul* (Paris: Fayard, 1996), 299.
7. Mübahat Küttükoğlu, "The Ottoman-British Commercial Treaty of 1838," in *Four Centuries of Turco-British Relations: Studies in Diplomatic, Economic and Cultural Affairs*, ed. William Hale and Ali İhsan Bağış (North Humberston, UK: Eothen Press, 1984), 53–61.
8. Christoph K. Neumann, "Modernitäten im Konflikt: Der sechste Munizipal-Bezirk von Istanbul, 1857–1912," in *Istanbul: Vom imperialen Herrschersitz zur Megapolis; historiographische Betrachtungen zu Gesellschaft, Institutionen und Räumen* (Munich: Meidenbauer, 2006), 351–75, here 355 (my translation).
9. In February 1863 the negotiations to found that state bank reached a successful conclusion. See Christopher Clay, *Gold for the Sultan: Western Bankers and Ottoman Finance 1856–1881; A Contribution to Ottoman and to International Financial History* (London: I. B. Tauris, 2000), 87.
10. Zeynep Çelik: *The Remaking of Istanbul: Portrait of an Ottoman City in the Nineteenth Century* (Berkeley: University of California Press, 1993), 63.
11. See Diana Barillari and Ezio Godoli, *Istanbul 1900: Art-Nouveau Architecture and Interiors* (New York: Rizzoli, 1996). For an impression of the Pera district, see Akylas Mellas, ed., *Pera: The Crossroads of Constantinople* ([Athens, Greece]: Militos Editions, [2001]).
12. Çelik, *Remaking of Istanbul*, 53; Emel Ardaman, "Perspective and Istanbul, the Capital of the Ottoman Empire," *Journal of Design History* 20 (2007): 109–30, 118–20, and table on 124.
13. Cited in John Freely, *Istanbul, the Imperial City* (London: Penguin 1996), 274.
14. Clive Trebilcock, *The Phoenix Assurance and the Development of British Insurance*, vol. 1, 1782–1870 (Cambridge: Cambridge University Press, 1985), 162–331; P. G. M. Dickson, *The Sun Insurance Office, 1710–1960: The History of Two and a Half Centuries of British Insurance* (London: Oxford University Press, 1960), 162–233; Peter Borscheid and Kai Umbach, "Zwischen Globalisierung und Protektionismus: Die internationale Versicherungswirtschaft vor dem Ersten Weltkrieg," *Jahrbuch für Wirtschaftsgeschichte* (2008): 207–26; Robin Pearson and Mikael Lönnborg, "Regulatory Regimes and Multinational Insurers before 1914," *Business History Review* 82 (2008): 59–86.
15. Dickson, *Sun Insurance Office*, 162–233.
16. London Metropolitan Archives (hereafter cited as LMA) CLC/B/192/019/31522/257 to 266.
17. Dickson, *Sun Insurance Office*, 188–89, begins the chapter on the involvement of Sun outside Europe with Smyrna. Earlier, however, Indian and West Indian outposts,

Valparaíso, Singapore, Batavia, Hong Kong, Shanghai, and Cape Town appear in the records; LMA CLC/B/192/019/38852/1 and 2.

18. Unfortunately there is no background information about Woods, except that he shipped in at Smyrna on 25 June 1864 (LMA CLC/B/192/019/31522/258, p. 3).

19. LMA CLC/B/192/019/31522/257, p. 89s [copy from Woods's report]—although on p. 32 it says, “No records of number of Fires have been kept for any length of time.” The list does not concur with the fires cited in Alfons Maria Schneider, “Brände in Konstantinopel,” *Byzantinische Zeitschrift* 41 (1941): 382–403, and is not reliable; in terms of dimensions, however, it must have provided the insurance company with a basically correct picture of the high risk of conflagration.

20. LMA CLC/B/192/019/31522/257, p. 36s.

21. LMA CLC/B/192/019/31522/257, p. 34. A similar statistic for the years 1859–64 enabled a *Times* journalist to calculate that, with 4,113 buildings in Constantinople destroyed in 160 fires during these six years, the average number of houses per fire would be a very high 26: *Times* (London), September 8, 1865, in LMA CLC/B/192/019/31522/260, p. 38.

22. LMA CLC/B/192/019/31522/258, unpaginated [p. 42].

23. LMA CLC/B/192/019/31522/258, unpaginated [p. 43].

24. LMA CLC/B/192/019/31522/259, p. 121.

25. “The colors Brown & Pink characterize respectively the Turkish & Christian quarters as nearly as possible, but as the map was made several years ago, some portions of the brown might now be colored pink” (LMA CLC/B/192/019/31522/258, p. 72).

26. The map in LMA CLC/B/192/019/31522/257, Appendix: “Plan der zum 6.ten Communalbezirk vereinigten Vorstädte Galata, Pera und Pancaldi von Constantinopel . . . ergänzt . . . bis ins Jahr 1861 durch C. Stolpe . . . / Plan des Faubourgs de Constantinopole Galata, Pera et Pancaldi.”

27. LMA CLC/B/192/019/31522/258, p. 72.

28. LMA CLC/B/192/019/31522/259, p. 126.

29. LMA CLC/B/192/019/31522/259, p. 188.

30. LMA CLC/B/192/019/31522/259, p. 117.

31. Ethem Eldem, “Istanbul: From Imperial to Peripheralized Capital,” in *The Ottoman City between East and West: Aleppo, Izmir, and Istanbul*, by Ethem Eldem, Daniel Goffman, and Bruce Masters (New York: Cambridge University Press, 1999), 135–214, here 204.

32. On the Fire of London, see Stephen Porter, *The Great Fire of London* (Thrupp, UK: Sutton, 1996), and—for a wider public, but reliably researched—Adrian Tinniswood, *By Permission of Heaven: The Story of the Great Fire of London* (London: Jonathan Cape, 2003). Eighteenth-century Istanbul was much larger than European cities before industrialization, so the numbers of houses destroyed have to be read in proportion to that factor.

33. LMA CLC/B/192/019/31522/260, p. 44s. On the rebuilding after the “Hocapaşa” fire, see Çelik, *Remaking of Istanbul*, 55–59; a more precise map of the fire

damage region than in Çelik can be found in LMA CLC/B/192/019/31522/260, p. 33. Cf. Ardaman, “Perspective and Istanbul,” 115.

34. *Times* (London), September 8, 1865, in LMA CLC/B/192/019/31522/260, 35; *Daily Telegraph*, n.d., *ibid.*, 39.

35. *The Standard*, n.d., *ibid.*, 41.

36. *Daily Telegraph*, n.d., *ibid.*, 39.

37. *Times* (London), September 8, 1865, *ibid.*, 35.

38. Çelik, *Remaking of Istanbul*, 64, cites three thousand houses.

39. *Levant Times*, June 13, 1870, p. 661, in LMA CLC/B/192/019/31522/260, p. 113; for the actually affected risks, see LMA CLC/B/192/019/31522/260, p. 160. In 1869 the total sum insured in Constantinople was £146,176, and the premium revenues were £905 (cf. total balance of the Foreign Department in 1869–70 and “Paid losses” in 1870 in LMA CLC/B/192/019/38852/2).

40. Edmondo de Amicis, *Constantinople*, trans. Caroline Tilton (New York: G. P. Putnam’s Sons, 1878), 240.

41. Çelik, *Remaking of Istanbul*, 64–65, 73 (with an inaccurate map of the fire area and a much too small damage zone. This can also be seen on photographs in LMA CLC/B/192/019/31522/260, p. 171–91; cf. Ardaman, “Perspective and Istanbul,” 114, for a retrospective map of 1917.

42. Comparison made in a newspaper (LMA CLC/B/192/019/31522/262, p. 81).

43. “The city of Chicago—in the United States—which in 1838 consisted of 12 shanties and 100 inhabitants, but now numbers a population of 420,000 souls” (LMA CLC/B/192/019/31522/261, p. 81); cf. William Cronon, *Nature’s Metropolis: Chicago and the Great West* (New York: W. W. Norton, 1991), 9; Karen Sawislak, *Smoldering City: Chicagoans and the Great Fire, 1871–1874* (Chicago: University of Chicago Press, 1995), 283n21.

44. LMA CLC/B/192/019/31522/260, p. 205.

45. Figures according to the balances and damage sums in LMA CLC/B/192/019/38852/2.

46. Baer, “Great Fire of 1660.”

47. Eldem, “Istanbul,” 155.

48. LMA CLC/B/192/019/31522/258, unpaginated [pp. 43, 45].

49. E.g. LMA CLC/B/192/019/31522/259, pp. 89–108.

50. LMA CLC/B/192/019/31522/259, p. 94s. For the “millet” system—the partial privileges granted to corporations of confessions/religions or “nationalities”—see Benjamin Braude and Bernard Lewis, eds., *Christians and Jews in the Ottoman Empire: The Functioning of a Plural Society*, 2 vols. (New York: Holmes & Meier, 1982); and Michael Ursinus, “Zur Diskussion um ‘Millet’ im Osmanischen Reich,” *Südost-Forschungen* 48 (1989): 195–207.

51. Frost and Jones, “Fire Gap.”

52. Edward Said, *Orientalism* (New York: Pantheon, 1978); André Raymond, “Islamic City, Arab City: Orientalist Myth and Recent Views,” *British Journal of Middle Eastern Studies* 21 (1994): 3–18. In a way, the concept of the “Asian City,” which is equated with

the premodern/preindustrial city in Lionel Frost's "Coping in Their Own Way: Asian Cities and the Problem of Fires," *Urban History* 24, no. 1 (1997): 5–16, is also still thoroughly indebted to this Orientalist view.

53. For the yardstick of the loss ratio, see Robin Pearson, *Insuring the Industrial Revolution: Fire Insurance in Great Britain, 1700–1850* (Aldershot, UK: Ashgate, 2004), 36n37.

54. See Cornel Zwierlein, "Insurances as Part of *Human Security*, their Timescapes, and Spatiality," *Historical Social Research* 35, no. 4 (2010): 253–74, here 264–68; data given here according to the corresponding Sun memorandum books for Germany, the United States, and India and to the annual general balance sheets of the company in LMA CLC/B/192/019/31522/153, pp. 66, 81; vol. 156, p. 63ss.; vol. 164, p. 40; LMA CLC/B/192/019/38852/1 and 2; LMA CLC/B/192/019/31522/275, p. 184s. For the duality of colonial towns ("black"/"white") in the case of India, see Swati Chattopadhyay, *Representing Calcutta: Modernity, Nationalism, and the Colonial Uncanny* (London: Routledge, 2005), 76–135, and Prashant Kidambi, *The Making of an Indian Metropolis: Colonial Governance and Public Culture in Bombay, 1890–1920* (Aldershot, UK: Ashgate, 2007), 32–36.

55. Frost, "Coping in Their Own Way."

56. *Levant Herald*, June 21, 1871, in LMA CLC/B/192/019/31522/261, p. 193.

57. Insured total sum 1869: £146,176; 1873: £1,554,247; 1879: £751,148, LMA CLC/B/192/019/38852/2.

58. LMA CLC/B/192/019/31522/266, pp. 285, 349.

Imperial Russia's Urban Fire Regimes, 1700–1905

CATHY A. FRIERSON

In the late Soviet Union of March and April 1985, courtyard fires behind the dormitory for foreign graduate students on Shevchenko Street in Leningrad reminded those from the so-called *kapstrany*, or capitalist countries, who walked by that the USSR was poorer and less well governed than they had expected of a superpower. The fires burned in metal garbage bins, sometimes in metal drums, sometimes in the dumpster. Like the garbage that overflowed the receptacles, these fires were out of place in the urban spaces of a modern, industrial system heated by nuclear power stations and reputed to be tightly controlled by an intrusive, omniscient government.

A decade later, after the collapse of the Soviet Union and the Communist Party-state, the piles of garbage in (by then renamed) Saint Petersburg's courtyards had grown considerably, becoming mountains of refuse next to overstuffed and oozing dumpsters under the windows of apartments where some of the Soviet Union's most privileged physicists associated with the Ioffe Physical-Technical Institute lived. Stray dogs scavenged; elderly citizens did, too. The garbage piles smoked, seemingly in various stages of spontaneous combustion. No one paid them any notice; no one took it upon himself or herself to clear the garbage or extinguish the fires.

The garbage fires in courtyards weren't the only fires illuminating the collapse of a powerful state. Foreign-model cars erupted into flames on Moscow's and Saint Petersburg's streets when competitors in the nascent market economy used incendiary devices to intimidate their rivals. In the countryside, too, collective farmers resented neighbors who profited from new opportunities and built two-story houses; they signaled their disapproval by burning those houses down. In cities and towns across Russia, apartments burst into flame when televisions shorted out; gas stoves blew out windows in some of the grandest apartment buildings dating to the Stalin era. When Russians living in non-Russian, former Soviet republics fled north as refugees, they balked when the Russian government offered them apartments in centrally heated buildings in the far north. They believed that in post-Soviet Russia, a peasant-style wood stove was more reliable than something that depended on government-run infrastructure.¹

The outbreak of fires across Russia's cities at the end of the twentieth century repudiated post-Soviet Russian citizens' understanding of themselves as modern, scientific, and orderly. They bewailed the fact that they were living in a society they described as *bespredel*, without limits, because the state-constructed regulatory system and infrastructure, from fire prevention to medical care, had collapsed. Living in a de facto stateless society in the mid-1990s, they inhabited an apocalyptic landscape where fire had broken out of its modern constraints to erupt in locations from which the state had long banished it.

This essay recounts the history of the Russian state's success in establishing those constraints on municipal fire beginning in the seventeenth century. Much of that success dated to the rule of Saint Petersburg's namesake, Peter the Great (r. 1689–1725). Although he was not the first Russian ruler to tackle fire hazards in Russia's cities, he was the first to bring a self-consciously modern complex of regulations and technologies to the task. He did so following his travels through Europe's capitals as far west as London in 1697–98. Fire regulation and fire-fighting in Petrine Russia's cities and towns were part of the package of reforms inspired by Peter's introduction to the accomplishments of the Scientific Revolution in western Europe (he also purchased a copy of Isaac Newton's *Principia Mathematica*, fresh off the press), which would later inspire Voltaire to celebrate him as an enlightened despot.

The state's persistent efforts to contain municipal fire through the end of the nineteenth century display the concentric pattern that characterized imperial Russia's political and economic imposition of power.² The state, headquartered in Moscow from the fourteenth century through the seventeenth century and in Saint Petersburg from 1712 through the end of Romanov rule, consistently functioned at the center of concentric rings of influence, most effective nearest

the Kremlin in Moscow or the Winter Palace in Saint Petersburg, but quite weak beyond the capitals' city limits and weakest of all in the hundreds of thousands of villages and vast spaces of the world's largest land empire. Fire prevention and firefighting as state initiatives were most effective where the state's presence was strongest. The concentric pattern in fire prevention characterized not only the distance from city to village but also the effectiveness of state regulations on municipal fire within cities themselves. State-supported industrialization was embryonic under Peter the Great, in its infancy under Nicholas I (r. 1825–55), and mature after the emancipation of the Russian serfs in 1861. Urban planning and fire prevention initiated under Peter the Great accelerated. A concentric pattern of policing authority prevailed, however, in the distribution of "modern" cities across the empire and of "modern" fireproof structures and systems within cities. The new capital of Saint Petersburg embodied most fully the fireproof city. Its unique concentration of state authority in the imperial period made it the center of Russia's urban fire regimes, with all other cities less fireproof and less susceptible to official enforcement of fire and building decrees.

At the end of the imperial era, even Moscow and Saint Petersburg continued to burn around their peripheries, as peasants migrated to the capitals, bringing their fire practices into spaces that were largely beyond the reach of the state's headquarters, only kilometers away. Modernity based on the Scientific Revolution and the Enlightenment, with the containment of fire a measure of that modernity, continued to be highly concentrated in the Russian Empire to its very end, taking hold primarily in the center of cities and towns in a country where fully 87 percent of the population continued to live in rural areas, and where rural people brought their smoldering fires to the outer rings of urban spaces and the state's most concentrated power.

From Wooden Muscovy to the Ideal of a Stone Saint Petersburg

After his visit to Muscovy in 1588–89, the British humanist Giles Fletcher introduced his readers to the concentric nature of Moscow's layout. "The form of this city is in a manner round, with three strong walls circling the one within the other and streets lying between, whereof the inmost wall and the buildings closed with it—lying safest, as the heart within the body, fenced and watered with the river Moskva, that runneth close by it—is all accounted the Emperor's castle."³ Fletcher's description obliquely identifies two of the Muscovite czars' worst fears: assault and fire. Sometimes these combined, as in 1571, when Crimean

Tatars set fire to the city, which was “completely burned, up to the Kremlin walls.”⁴ Fire was so fearful because Muscovy was so wooden. Fletcher explained, “The streets of their cities and towns, instead of paving are planked with fir trees planed and laid even close one to the other. Their houses are of wood without any lime or stone, built very close and warm with fir trees planed and piled one upon another.”⁵

Fifty years later, the German Adam Olearius reported much the same. Moscow’s Kremlin was “surrounded by a thick stone wall,” and within it, the emperor’s castle was “surrounded by triple stone walls and a deep moat.” He was told that the city had been “once again as large” before the 1571 fire due to the Crimean Tatars’ raid, and a similar event in 1611 during the Time of Troubles, “when the Poles put the torch to it.”⁶ Olearius and his companions could not stay in the ambassadorial residence, because it had perished in a “great fire just before [their] entry, reducing more than 5,000 houses to ashes.”⁷

Everywhere, Olearius found that cities and towns were still made of wood. This was true of Moscow’s former rival, Novgorod, where “like most cities all over Russia, the houses, as well as the city walls and fortifications [were] built of spruce timber.”⁸ Olearius learned that Russians preferred to live in wooden houses, because they considered them warmer and healthier than stone buildings.⁹ So strong was the preference for wood, and so constant were the fires that destroyed them, that Moscow had an entire district named Skorodom, which means “fast house,” comprising “a wood market and the house market . . . where one [might] purchase a house that [could] be built in another part of the city in just two days.”¹⁰ A map of Moscow’s mid-seventeenth-century physiognomy shows the “fast house” district running along its southern perimeter (fig. 5.1).

Moscow continued to burn. Great fires occurred in 1626 and again in 1648, when a riot broke out over officials’ abuses and “nearly half of the city’s homes were burned.” Provincial cities were also highly flammable. Iaroslavl, due north on the Volga River, “lost its entire commercial section and over half of its residences in 1658 . . . and another major conflagration in 1680 left half of the city in ashes.” A “disastrous fire” in 1663 consumed much of another ancient city, Pskov.¹¹

This long experience with fire inspired official efforts to contain it. Ivan the IV (the Terrible) (r. 1533–84) issued urban fire-safety regulations. In the seventeenth century, decrees in Moscow and regional capitals addressed both fire prevention and firefighting. In the wake of the 1648 riot and fire, Czar Aleksei Mikhailovich (r. 1645–76) issued a decree in April 1649 establishing two officials responsible for firefighting, as well as a system of fire watches and requirements for town residents to supply firefighting tools. A decree in 1670 ordered that all households and bakeries install brick chimneys.¹²

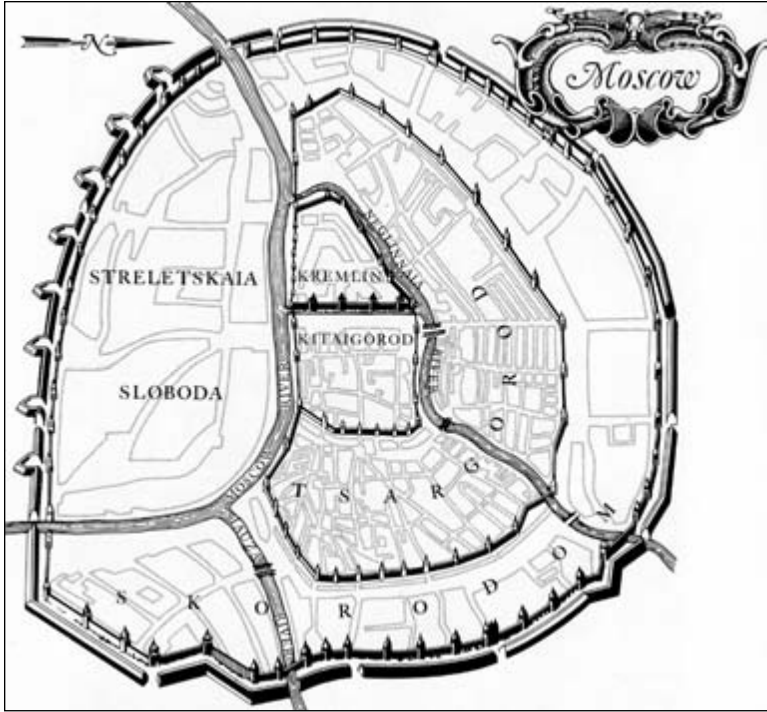


Figure 5.1. Moscow, mid-seventeenth century. (Based on an engraving by Adam Olearius. Reproduced by permission from Samuel H. Baron, trans. and ed., *The Travels of Olearius in Seventeenth-Century Russia*, following 150. © 1967 by the Board of Trustees of the Leland Stanford Junior University.)

Upon his return from his Grand Embassy through western Europe in 1697–98, Peter the Great launched the series of reforms that signaled Russia's entry into its modern period. Containing fire emerged quickly as one of his ambitions for the Russian state's expanding role. In 1699, he issued an urban reform focusing on making Moscow more orderly. He tried to increase masonry construction, first by decreeing in 1701 that all buildings that burned down had to be replaced with stone ones. In 1704, all property owners in the neighborhood of the Moscow Kremlin were ordered to build stone houses. These measures were a portent of his wholesale plans for a new capital.¹³

In 1703, Peter the Great founded his new capital on the Neva River. Thenceforth, Saint Petersburg was the new nucleus of state power and attention. Upon the tabula rasa along the Neva, Peter erected an embodiment of the state, science, and reason. The city's dual functions of political capital and display

project were manifest under Peter and his successors in the special attention it received in fire and building codes. Firefighting became a state responsibility according to a decree of 1711. It called for fire departments in cities and towns, participation of military troops in firefighting, and state funding for firefighting equipment. Firefighting equipment, furthermore, was to come from western Europe; the new fire hoses came from Holland.¹⁴ The police were required to maintain a list of the local population and the firefighting equipment they had to possess; the police also had the right to summon city residents on that list to fight fires under threat of criminal liability for failure to appear.

Saint Petersburg was to be a stone city of parallel lines with fire prevention built into its very foundations. A decree of 1716 included prohibitions against flammable building materials and hazardous stoves. Roofs were to be covered in tile, tar, or shingles. Fireproof walls were to be erected between buildings.¹⁵ Wood continued to dominate construction, however, in this rapidly growing city. As James Cracraft explains, "By 1725, when Peter died, most of the new capital's 40,000 inhabitants still lived, it is true, in dwellings constructed of wood or, at best, wattle-and-daub." In contrast to dwellings, "the city's numerous official or public buildings . . . were mostly constructed of brick or stone."¹⁶ Chief among them were the Admiralty and the Peter and Paul Fortress, anchoring the Russian Empire's stone, fireproof center.

Peter the Great recognized that domestic heating practices were a major hazard. Russian buildings were heated by large stoves, typically situated in a corner. Peter tackled their risks through a decree in 1716 that regulated the stove's foundation, placement, stovepipe or chimney size, and cleaning; it established police inspectors to oversee stove construction. Peter prohibited lighting stoves indoors during the summer months and ordered that a summer kitchen be maintained in the courtyard.¹⁷

Within a generation, Russia's level of urbanization was comparable to that of its neighbors east and west.¹⁸ Peter's successors extended his efforts to mitigate the impact of fire on Russian cities. The reign of Anna Ivanovna (1730–40) brought fire regulations up to date in response to costly fires in Saint Petersburg in 1736–37.¹⁹ Regulations issued in 1737 and 1738 for Saint Petersburg strove to eliminate wood from as many aspects of building as possible, including roofs, which were to be of tin or tile; external decorations and balconies; and all out-buildings. All new construction required municipal approval. Anna Ivanovna's lawmakers exempted Moscow and provincial cities from these requirements, perhaps recognizing the futility of imposing regulations they could not monitor.²⁰

Firefighting duties fell on military troops and the police. Citizens' guards were to help the police keep watch for arsonists. In Saint Petersburg, the state ordered the construction of wells in every courtyard. For Moscow, the state

ordered the construction of wells with covers and two hoses along all major streets. The imperial government began to provide assistance to fire victims as a reaction to several major city fires in the middle of the eighteenth century.²¹

For all of Peter's energy and his successors' continuing efforts, Saint Petersburg was the exception among Russian cities in the late eighteenth century in its relative regularity and masonry and stone aspect. Even there, and certainly throughout other cities, residents and shop owners threw up wooden storage sheds, stables, and other outbuildings as a matter of course, while residents built wooden houses. When Catherine the Great seized the throne in 1762, "physical conditions had changed little, and public services, though slightly improved, could not cope with the problems brought on by increasing population."²² Two major disasters in the early 1770s forcefully reminded the young ruler that cities beyond Saint Petersburg had barely benefited from urban planning and limits on wooden construction. In 1771–72, bubonic plague struck Moscow, killing fifty-five thousand persons by making rapid inroads through packed wooden dwellings. Catherine's envoy, Grigory Orlov, ordered that 3,000 old wooden houses be burned.²³ Fast on the heels of the plague came a great peasant and Cossack rebellion led by Emelyan Pugachev. In July 1774, Pugachev led an assault on Kazan, a largely Tatar city of eleven thousand persons, "built of wood; even the kremlin, or fort, was wooden." Pugachev and his men set fire to it; "of 2,873 houses in the city, 2,063 were destroyed by fire."²⁴ He then moved south to the virtually defenseless Saratov; "a serious fire in May 1774 . . . had laid it waste and its fortifications were negligible."²⁵ Catherine had good reason to long for more orderly, stone cities, with less susceptibility to fire and vulnerability to marauders.

One of Catherine's last acts delineated the bureaucracy of firefighting in Saint Petersburg and Moscow, establishing districts, personnel, and equipment norms. Catherine did not extend this bureaucracy throughout the empire but limited it to the two capitals, where its introduction was most likely to succeed. Russia's rulers recognized that the state's power to contain fire across the expanding empire was limited. Instead, they capitalized on the destructive forces of natural disasters and war to provide a tabula rasa in locations beyond Saint Petersburg.

Disasters and Partial Transformations

Not legislation from Saint Petersburg but disaster sped up urban reconfiguration. In 1763, shortly after Catherine came to the throne, a major town between Saint Petersburg and Moscow along the central road, Tver, had a great fire.

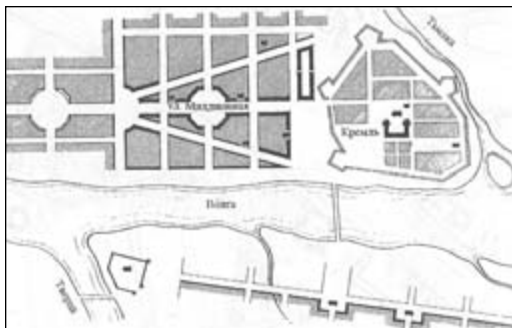


Figure 5.2. Tver's layout as reconstructed after the great fire of 1763. (Reproduced by permission from G. M. Shilov, *Arkhitrurno-prostranstvennye vzaimosviazi v gradostroitel'stve* [Tver: Izdatel'stvo Tver'skogo gosudarstvennogo tekhnicheskogo universiteta, 2003], 112.)

This provided the opportunity to bring the city into line with Saint Petersburg, rather than continue the patterns of Moscow. The result was a hybrid city, embodying Tver's transitional position geographically between the two capitals. Tver's medieval citadel remained an irregularly shaped, somewhat circular walled space adjacent to rivers (fig. 5.2). Outside the walls, urban planning reshaped the burned-out center of the city, repeating Saint Petersburg's radial streets.²⁶

The best-known fire-induced reconstruction took place in Moscow after the Russian Empire's most famous conflagration: the burning of the city after Napoleon entered it as conqueror in September 1812. For three days the city burned, destroying roughly two-thirds of its structures.²⁷ This cleared the way for urban plans in Peter the Great's and Catherine the Great's fashion under Alexander I and Nicholas I. By the time Baron August von Haxthausen traveled to Russia thirty years later in 1843, he found that "after 1812, Moscow was rebuilt completely in the usual modern style" and noted, "One finds almost no old, interesting, and quaint private homes."²⁸

Catherine the Great's successful wars offered opportunities to build new cities in the Saint Petersburg style in captured territories. Odessa proved to be one of the most flourishing results. Founded in 1794 on the Black Sea on land won during the first Russo-Turkish War (1787–92), Odessa grew to be the fourth most populous city in the empire by 1863, the southern equivalent of Saint Petersburg as a planned port city. From the beginning, it was a city of stone buildings laid out on a grid plan, featuring the port as the focal point. By

1860, Odessa had a population of over one hundred thousand, a university, “many graceful buildings in the neoclassical style . . . , and a magnificent stone staircase . . . connected the city with the port in a rhythmic cascade of steps and landings.”²⁹ Visitors arriving in the Russian Empire via this stone portal received the same message they received arriving at the stone staircase at Peterhof or the marble and granite Jordan Staircase in the Winter Palace in Saint Petersburg: this was a rock-solid empire ranking at the top among European powers.

State and Society Make Gains against Urban Fires in Late Imperial Russia

Defeat in the Crimean War (1853–56) prompted Alexander II (r. 1855–81) to launch broad reforms. Fire prevention surfaced once again as a centerpiece of autocratic efforts to modernize Russia. In 1857, the state issued a new building code and reissued the Fire Code of 1832 with minor revisions. The Municipal Statute of 1870, revised in 1892, added details about both planning and fire administration. Together this complex of fire regulations encompassed the full range of issues related to urban fires. They reveal that the late imperial regime used several tactics in its campaign to prevent and fight fires: regulating fire practices, criminalizing fire-prone behaviors, enlisting entities beyond the police, and encouraging subjects to purchase fire insurance.

The key points of the Fire Code of 1857, amended in 1887, made firefighting a municipal budgetary responsibility under police jurisdiction, set norms for personnel and equipment, and established central fire depots in Moscow and Saint Petersburg to provide training and equipment to provincial fire departments. The code also prescribed fireproof practices in stove and chimney construction, layout of buildings, and placement of outbuildings where fire was frequently used. The code included twenty-five distinct articles specific to the city of Saint Petersburg. It tried to control personal habits, as well, proscribing pipe and cigar smoking in public squares, as well as leaving burning candles unattended, lighting samovars anywhere beyond the kitchen, or leaving fire-prone objects within reach of children. All members of the population near a fire were ordered to participate in extinguishing it. The code also ordered that property owners should purchase fire insurance. It concluded by listing the punishments in the criminal code prescribed for careless handling of fire.³⁰

The building code outlined the central and provincial bureaucracies responsible for overseeing construction and provided regulations specific to state buildings, church structures, factories and workshops, private dwellings, and

village layouts. It too included articles specific to the residents of Saint Petersburg.³¹ In 1860, supervision of fire equipment expanded beyond the police department to include municipal inspectors and insurance agents. In the Municipal Statute of 1870, city fire departments gained the right to mandate fire-prevention regulations. In 1871, new regulations focused on heating-stove construction and maintenance. Roofing always attracted state regulation. In the 1870s, regulations for Saint Petersburg permitted flame-resistant paper to be used in roofing in those areas of the city where wooden construction was still permitted; this regulation was then extended to all provincial and district towns. This decree was a concession made against the background of long-standing efforts to have all roofs in cities and towns made of fire-resistant metal or tile. Chimneys and smokestacks, both residential and industrial, were assigned minimum heights, regular cleaning schedules, and inspections. In Saint Petersburg and Moscow, but not elsewhere—again in recognition of how limited resources were beyond the capitals—the fire chiefs were to participate in all planning and reconstruction projects.³²

This statutory attention to urban fires after 1855 was but one feature of the Russian autocracy's intensifying attempts to transform, then to control, its economy and society. The most relevant developments were the emancipation of over thirty million peasants from bondage in 1861, an unprecedented demographic surge, liberalization of access to education and justice, and urbanization coupled with industrial development. Anxiety about social trends also infused the state's concerns about fire as a difficult-to-control natural element. Enormous fires in Saint Petersburg in 1862 magnified the state's unease. For two weeks, fires broke out in various parts of the capital. State and public alike concluded that the cause was arson. The fires were especially alarming because they struck some of the wealthiest parts of the city. Even the minister of interior, second only to the czar as the protector of internal security, felt its heat: flames penetrated his building and consumed official documents. Here was what Russian rulers had striven to prevent for centuries: assault by fire at the center of power.³³

The state ratcheted up its fire surveillance, as the empire experienced exceptional population growth and urbanization. The presence of more people in cities warranted the state's concern about fires. The Economic Department of the Ministry of Internal Affairs gathered statistics about the incidence of fires "in cities" and "in the districts." The empire's population grew by roughly 50 percent in the second half of the nineteenth century. Urbanization accelerated after 1870.³⁴ Of "the larger cities, about half doubled their population between 1883 and 1913, and another quarter trebled or more."³⁵

Table 5.1. Urban population and residential structures, 1863; urban population, 1904.

PROVINCIAL CAPITAL CITY	PERCENTAGE OF RESIDENTIAL BUILDINGS BUILT OF		
	MASONRY OR STONE, 1863	1863 POPULATION	1904 POPULATION
Arkhangelsk	4.8%	20,178	21,600
Kazan	15.0%	63,084	133,700
Moscow	34.0%	351,609	1,076,500
Saint Petersburg	45.6%	539,472	1,555,200
Saratov	6.7%	84,391	145,300

Sources: 1863: Tsentral'nyi statisticheskii komitet Ministerstva Vnutrennikh Del, *Statisticheskii vremennik rossiiskoi imperii* (Saint Petersburg, 1866), 78–141. 1864: Tsentral'nyi statisticheskii komitet MVD, *Ezhegodnik Rossii: 1904* (Saint Petersburg, 1905), 51–67.

Note: Siberia and the Caucasus did not provide data on residential structures.

Such growth increased urban fire hazards, especially in immigrant peasants' housing. Anticipating this, the state gathered data in 1863 on the distribution of wooden and masonry residential buildings. In only three provincial capital cities did stone or masonry buildings comprise at least a third of all residential buildings. The data from five of the fifty provincial capital cities—Moscow, Saint Petersburg, the capital of a northern seaport (Arkhangelsk), the capital of heavily Tatar Kazan to the south, and the southern Volga River city of Saratov—illustrate the broader population trends and the difference between the center and the periphery (table 5.1). Moscow and Saint Petersburg tripled in population during the second half of the nineteenth century, while Saratov and Kazan doubled. Of the focus cities, only Arkhangelsk did not experience such population growth.

Despite Saint Petersburg's rectilinear constructed spaces in the city center, the spaces beyond the center displayed the now-familiar concentric pattern of buildings that would multiply over the next fifty years of rapid peasant immigration (fig. 5.3). At the center, masonry dominated; on the periphery, especially the northern periphery, wood defined the cityscape.

By 1904, not much had changed in the distribution of stone and wooden buildings in Russia's cities. The percentages of all buildings (residential and nonresidential) that were stone or masonry were as follows: Saint Petersburg city—41 percent; Moscow city—35 percent; Arkhangelsk region—23 percent;

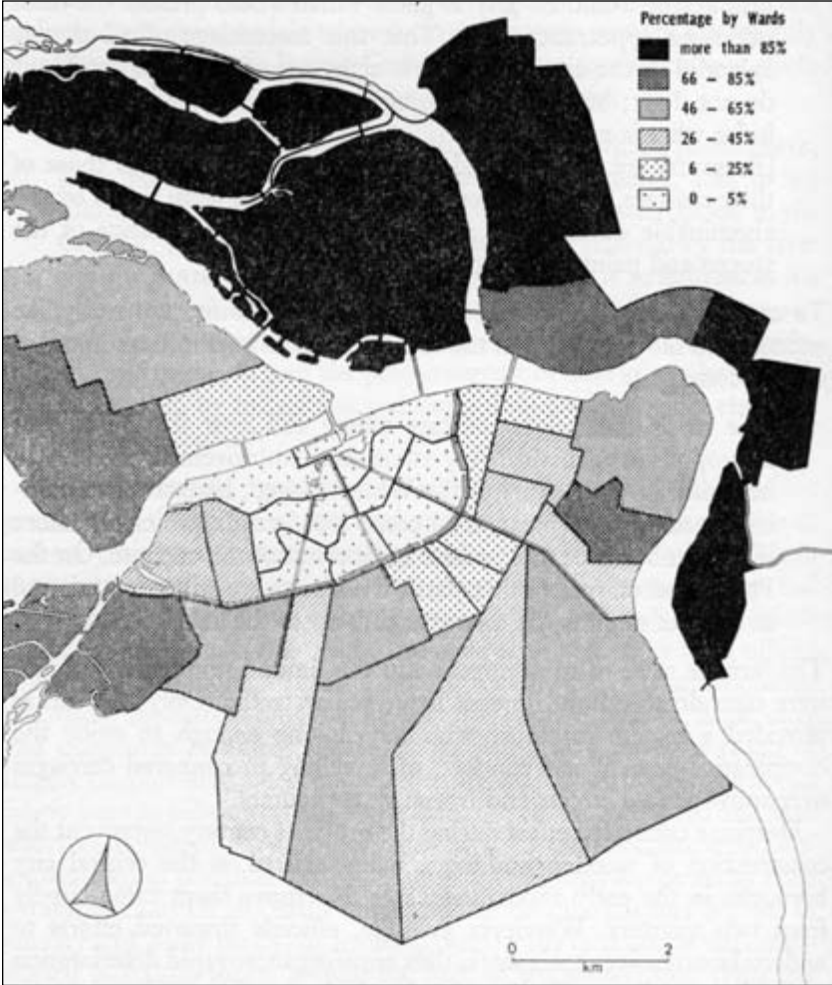


Figure 5.3. Distribution of wooden buildings in Saint Petersburg, 1869. (Reproduced by permission from James H. Bater, *St. Petersburg: Industrialization and Change* [Montreal: McGill-Queen's University Press, 1976], 156.)

Kazan region—17 percent; and Saratov region—17 percent. Paved roads facilitated rapid fire response for men and equipment. They comprised the following percentages of all roads: Saint Petersburg city—98 percent; Moscow—93 percent; Arkhangelsk region—55 percent; Kazan region—50 percent; and Saratov region—50 percent.³⁶

These data illustrate the perennial truth that the traditional capitals were distinct from the rest of the country. One had to travel only 101 kilometers beyond Moscow to the town of Tarusa to discover that the labels “city” and “town” held different meanings outside central Moscow or Saint Petersburg or even provincial capitals.³⁷ In 1898, a local resident described Tarusa as “completely helpless in the event of a fire,” because it was utterly without the order prescribed in the building code. “The main streets in the city . . . running from the square, are entirely built up with wooden structures, consisting of uninterrupted buildings and sheds, stuffed with hay, straw, tar and other flammable materials. . . . Taking all this into account,” he declared, “it is not surprising that our towns not only burn, but even burn to their very foundations.”³⁸

A fire report later that summer from the district town of Dorogobuzh to the west and south of Moscow seemed to confirm this view. The alarm was sounded at 10:00 p.m.

When the firemen arrived, they saw that fire had broken out in the merchant D. D. Goncharov's barn, in which there lay bark, boards, lime, and dry firewood. The hay barn of the soldier's wife G. G. Biriukova was right next to Goncharov's barn. Hers was burning simultaneously with Goncharov's barn, so it was hard to determine where the fire had started. The highly flammable materials spread the fire extremely quickly to the nearest, crowded, wooden structures in the back, so that it was not possible, before the full complement of firefighters arrived, to keep flames off the houses of Biriukova, Goncharov, and Babkova. But when a more or less complete unit of firefighters arrived—along with bystanders—it was possible to protect I. Pavlova's house from Babkova's burning house. . . . The fire was completely extinguished at 4:00 a.m. The fire losses are up to 8,000 rubles.³⁹

Significant financial losses associated with the burning of three houses and their outbuildings over the course of six hours in the center of a provincial capital certainly warranted the attention of local government officials and fire-prevention activists. But this urban fire did not, in fact, burn the town down “to its very foundations.” On the contrary, once the firefighters arrived in full force at the scene, they were able to contain the fire to three properties. This fire was

thus not like the great fires in Saint Petersburg in 1862. Statistics on fires in European Russia indicate that, contrary to the Tarusa resident's claim and fire-prevention activists' agitated rhetoric, Russia's late-imperial urban fires were on average rather small. Even as the vast ocean of Russian villages continued to burn completely, cities and towns were an archipelago of ever-more-successfully contained fires.

Incidence of Urban Fires and Numbers of Structures Burned

The data for fires in Saint Petersburg and Moscow, and for all city fires in each province of Arkhangelsk, Kazan, and Saratov, show that, with the exception of Saratov, urban fires were small and that, over the twenty-five years between 1870 and 1894, they became smaller. In 1870, the absolute number of urban fires and the number of buildings burned per fire were as follows: Arkhangelsk—30/1.2; Kazan—42/1.4; Moscow—154/0.8; Saratov—73/5.0. There were no data for Saint Petersburg that year. In 1894, the absolute number of fires had risen everywhere but Arkhangelsk, but the number of buildings burned per fire had fallen: Arkhangelsk—18/0.8; Kazan—72/1.2; Moscow—500/.62; Saint Petersburg—544/.18; Saratov—131/.62.⁴⁰ The data indicate that even Saratov, notorious for “fire seasons” that consumed large villages during the summer heat and winds, had managed to reduce the number of buildings burned per city fire. That is remarkable against the backdrop of what was happening in the countryside, where population increases led to village crowding and large numbers of buildings burned. In the period 1870–1874 for the empire as a whole, the number of reported fires soared. Rural fires were primarily responsible for that increase. The number of buildings burned had risen from 489,517 to 806,729.⁴¹ Data from the mid-1880s show that the provincial urban and rural fires together consumed roughly three to four times as many buildings per fire as city fires alone except in stable Arkhangelsk.⁴² This pattern persisted into the twentieth century.

Two fires in June 1906, one in Saint Petersburg and the other in Moscow, had the potential to become runaway fires. On June 9, fire broke out in a room on the first floor of a two-story hotel in Moscow where kerosene was stored. Fire ran up the wooden staircase through the roof, causing forty thousand rubles of losses. Yet fire brigades were able to contain the fire to the hotel. On June 13, a fire broke out at 11:00 a.m. on the first floor of a masonry building in a Saint Petersburg pharmacy. “The fire spread with terrible speed through the entire storeroom and up into the second floor.” Losses reached five hundred thousand

rubles. Even so, the firefighting unit that responded to the fire had contained it within three hours.⁴³ These two fires qualified as “great fires” in the scale of their financial losses. A fire report published a month earlier, however, served as a reminder that urban fires, however costly in financial terms, were minor in scale by comparison with village fires. The correspondent described a village fire in Moscow province that had occurred on April 22. It consumed 313 peasant houses and 1,031 unoccupied structures. “Many of those whose homes burned were not able to save anything. Around 2,000 persons were left without housing, without clothing, and without a crust of bread.”⁴⁴

For the cities, it seems, the complex of law codes addressing fire hazards had more effect than similar codes in the countryside. Developments in insurance also contributed to limiting overwhelming urban fires. Commercial insurance had arrived in Russia as early as 1827, with the founding of the First Russian Fire Insurance Society. Regional fire insurance companies and mutual insurance programs appeared in the second half of the century. The Smolensk Mutual Insurance Association, as one example, was established in 1880 and by January 1, 1898, was insuring structures totaling 4,271,254 rubles.⁴⁵ By 1902 in the city of Moscow, 92 percent of all buildings were insured.⁴⁶ In 1900–1905, commercial fire insurance companies were insuring 42,701,359,000 rubles of property. In 1912, there were fourteen commercial fire insurance companies in the empire.⁴⁷ Urban fire insurance programs in Russia warrant further research.

By the beginning of the twentieth century, volunteer firefighting had become a favorite philanthropic activity for Russian noblemen. Member societies of the Imperial Russian Firefighters' Association enjoyed royal patronage, sponsored traveling firefighting exhibitions, held regional and empirewide conferences, and published firefighting journals.⁴⁸ As one example, the Smolensk city firefighting society fought more than 270 fires between 1874 and 1898. By 1904, roughly one hundred thousand men in the empire had joined urban volunteer firefighting societies and village brigades.⁴⁹ Volunteer firefighters appear in the descriptions of urban fires above, where local correspondents often identified those who showed up at fires as “members” of a volunteer firefighting team who arrived to assist the municipal fire department.

Volunteer firefighters' assistance mattered at urban fires because municipal fire departments were underfunded and understaffed (table 5.2). In 1894, for the empire as a whole, the average share municipalities designated for fire prevention and firefighting was 5.44 percent of the city budget. The focus cities of this essay assigned the following percentages of their annual budgets: Saratov—7.8 percent; Kazan—7.8 percent; Moscow—5.2 percent; Saint Petersburg—4.1 percent. This source did not include Arkhangelsk.⁵⁰ Several cities also had

Table 5.2. Distribution of municipal fire departments, 1894.

CITY	BUILDINGS PER FIRE DISTRICT	POPULATION PER FIRE DISTRICT	FIREMEN PER FIRE DISTRICT	FIRE DISTRICT UNITS
Moscow	765	47,000	31	17
Kazan	878	23,000	61	6
Saint Petersburg	979	74,000	57	14 full-time; 4 reserve units
Saratov	1,221	41,000	40	4

Source: K. Iordan, "Pozharnoe delo v Rossii," *Pozharnoe delo*, no. 9 (September 1898): 573.

nonmunicipal units, supported by such private entities as factories and major commercial enterprises.⁵¹ In this hodgepodge of firefighting efforts, volunteer firefighting units could make a difference in contributing to the "full complement" of men and equipment battling a city fire.

Accelerating developments in construction materials and infrastructure after 1900 also enabled gains against urban fires. Moscow illustrates how modern technologies diminished the threat of fires. The traditional capital also displays the stubbornness of concentric patterns in late imperial urban spaces.

Moscow's Fire Condition at the Beginning of the Twentieth Century

In the revised and updated edition of his influential *Russia*, Sir Donald Mackenzie Wallace describes Moscow in 1912 as "the centre of a great network of railways, and the commercial and industrial capital of the Empire, with a rapidly increasing population of about a million and a half. . . . The ancient capital, which long gloried in its past historical associations, now glories in its present commercial prosperity."⁵² Moscow had by then become "the tenth most populous city in the world and, among those ten, the fastest growing." That rapid population growth, creating a population of which 75 percent were immigrants from the countryside, predictably led to rapid expansion of residential buildings. The distribution of residential structures was decidedly concentric when mapped according to building materials: "the proportion of wooden buildings actually

increased because of the nearly exclusive use of wood in the city's rapidly growing suburbs."⁵³

An exhaustive statistical study of Moscow's fire condition in 1912 provided evidence on the differential impact of fire across metropolitan Moscow. Wooden residential buildings grew from 33.9 percent of 23,849 buildings in 1871 to 50.1 percent of 38,553 buildings in 1902.⁵⁴ Mapping those buildings provided clues to why fire control was one legitimate source of the city's confidence. Districts were survivals of the multiwalled, concentric city that Giles Fletcher had visited over three hundred years earlier: the Kremlin area (center); within the first ring road (the first wall); within the second ring road (the second wall); beyond the second ring road to the north, east, and west; and the Zamoskvorech'e District on the southern bank of the Moscow River across from the Kremlin. The percentage of masonry residential buildings was highest in the center (99.4 percent) and first ring (93.7 percent) and lowest in the Northern District beyond the second ring road (19.9 percent). The incidence of fires also rose from an annual average for the entire city in 1903–7 of 743 to 948.4 in 1908–12. Note that revolutionary disturbances were most intense in 1905–6, and abated fully only after 1908. The distribution of fires also varied considerably by district. In the Center District, there were only 19.8 fires per year on average in 1903–7, but in the Northern District beyond the second ring, there were 175.4. In 1908–12, those annual averages had risen to 33 for the Center and 207.8 for the Northern District.

Even as the absolute number of fires rose, their scope was steadily diminishing, except for the years of revolutionary upheaval (1905–8). Population density was highest in the regions with the highest proportion of masonry buildings, because large, multistory apartment buildings were built of stone, while the rapidly erected workers' barracks on the peripheries tended to be wooden. Within the multistoried residential buildings, individual residences multiplied, and along with them, sources of fire used for heating, cooking, and illumination. Twentieth-century fires were most frequent in the evening and at night, when residents were at home, cooking, heating with wood fires in their stoves, and working by kerosene lamp.⁵⁵ But such fires were usually contained and of short duration. Municipal fire departments and volunteer firefighters reported the size of fires according to the number of units called to each fire. By 1907–11, fully 75.7 percent of all Moscow city fires were one- or two-alarm fires and only 1.3 percent required six or more units.⁵⁶ For the same period, large fires were three times as likely to happen in the suburbs, where wooden construction predominated, than in the stone center city. Medium fires requiring three to five units were also 1.5 times as frequent in the suburbs.⁵⁷ Yet the overall averages were still strikingly small.

From 1903 to 1912, for the city of Moscow as a whole, fires in residential and nonresidential buildings consumed, on average, .81 building per fire. Only in 1903 (1.16), 1905 (1.08), and 1912 (1.01) did more than one structure burn per fire in metropolitan Moscow. Fires did not last long either. In the period 1903–12, the vast majority of fires in Moscow (from 76.8 percent to 85.7 percent) were extinguished in under three hours.⁵⁸ In addition to their stone walls, buildings in Moscow city proper tended to have two other advantages: an improved municipal water system with stored water at hand and an expanding telephone system that enabled calls to the fire department when a fire broke out. The ready water supply often precluded the need for the firefighters. Roughly 22 percent of all fires from 1903 to 1912 were extinguished by “domestic means”; 21 percent by using in-house water sources; and only 50 percent through the efforts of firefighting units using firefighting equipment. These data make the reminiscences of a young immigrant worker in Moscow fully understandable. When describing what workers did for recreation, he recalled, “In addition, we never missed a Moscow fire, and, no matter how tired, we would run at breakneck speed to see these free spectacles.”⁵⁹ With over seven hundred fires per year, there was a good chance that there would be a fire to watch. It was likely that the end of the work day was when an alarm would sound. The “free spectacle” was usually over by a reasonable hour, so that the workers could still get a good night’s sleep.

This overview of imperial Russia’s urban fire history reveals that state and civic organizations had joined forces by the eve of World War I to make strides in reducing fires’ impact, if not their number, in cities and towns. State efforts dominated the equation under the rule of two of Europe’s most emblematic enlightened despots: Peter the Great and Catherine the Great. Fire prevention and mitigation became an obligation of responsible rule and a compulsory order to Peter’s subjects after he returned to Moscow from western Europe. No subsequent Romanov ruler could afford to neglect urban fire questions. In the late nineteenth century, society joined the effort through volunteer firefighting. Yet a third element contributed to Russia’s improving urban fire condition: commerce. Hints of commerce’s roles in encouraging better fire control have flickered across these pages, most notably in commercial fire insurance, supplemental fire units attached to commercial establishments, and the use of private wealth to purchase equipment and uniforms for volunteer firefighting societies. There was also a thriving fire-equipment industry in late imperial Russia, whose advertisements featured prominently in firefighting publications. The role of commercial expansion in improving Russia’s urban fire condition deserves further research.⁶⁰

Moscow and Saint Petersburg enjoyed the richest combination of these factors, as well as technological advantages. Yet Russia continued to be a culture of concentric rings at the beginning of the twentieth century, with the greatest gains against fire coming in the capitals, and, within those cities, in their innermost regions dominated by stone government structures and multistoried residential buildings. Residential and construction patterns in Peter's two-hundred-year-old capital perpetuated the distinction between city and periphery. "In the suburbs ill-constructed one- and two-story wooden houses mushroomed along streets which . . . were unpaved (indeed impassable at times), and save for the occasional kerosene lamp and communal tap, largely unserved."⁶¹ The pattern established by the late 1860s prevailed on the eve of World War I, however. "Just as in 1869 . . . most wooden buildings were located in the peripheral boroughs. . . . Perhaps the only consolation for the authorities concerned was that the city had nearly 55 percent of all buildings in stone or brick in 1900, and this proportion was substantially better than in Moscow, where a couple of years later the comparative share was scarcely a third."⁶²

Despite Moscow's surprising gains against massive fires, Saint Petersburg and other cities of the empire still generated anguish when fire-prevention activists looked to their neighbors to the west. The opening editorial of the June 24, 1906, issue of *The Fireman's Cause* bemoaned the fact that Berlin, with a population of roughly two million, lost only two persons per year to fire, while Saint Petersburg, with a population of 1.5 million, typically lost twenty each year. Why, the author asked, did Czar and Emperor Nicholas II's capital city continue to be ten times more deadly than that of his cousin, Emperor Wilhelm II? He asserted that volunteer and municipal firefighters certainly could not be faulted. Instead, the backward, still culturally peasant population of the capital city frustrated both state and civic efforts to save Russia's cities from fire. "Can a fire unit in the capital, even if it were ideal in its personnel, even if there were electrical fire alarms and an adequate water supply system, really fight fire and contain it at its very inception at such points in the city as Ligovka, with its cabbies' courtyards and congested population? Never!" He described the area as a veritable "bonfire" and said that many districts throughout Saint Petersburg, to say nothing of provincial and district towns, were such bonfires.⁶³

This leads us back into Saint Petersburg's courtyards. At the end of the imperial era, notoriously resourceful Russian citizens outside the state's bureaucracy—residents, traders, cabbies, and small manufacturers—found ways to squeeze their wooden structures into open spaces between and behind stone edifices that complied with building and fire codes. "Factories, workshops, markets, retail stalls, peddlars—all were to be seen throughout the central city and beyond, in defiance of zoning, land-use, and licensing controls of an earlier

era.”⁶⁴ Their owners were imperial subjects who had long lived beyond the state’s reach geographically as peasants; as peasants-come-to-town, they stubbornly used wood for construction and fire for various needs as they would have in a village. Courtyards were interstices in the elaborate, centuries-old framework erected by the Russian state to prevent and contain runaway fires in cities and towns. At the beginning of the twentieth century, courtyard fires illuminated locations that the state had not yet reached. At century’s end, courtyard fires in late Soviet Leningrad and early post-Soviet, Russian Saint Petersburg illuminated the modern state’s unwilling retreat and fire’s quick reappearance in an ungoverned cityscape.

NOTES

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35. Michael F. Hamm, ed., *The City in Late Imperial Russia* (Bloomington: Indian University Press, 1986), 89.
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37. The town of Tarusa would earn its place in the modern record of Russian history in the 1940s and 1950s, when many inmates of the Gulag chose it as the closest urban area where they could settle beyond the one-hundred-kilometer zone around Moscow forbidden to them after their release from the camps. See Tatyana Mel'nikova, *Tarusa — 101-ii kilometr* (Moscow: Vozvrashchenie, 2007).

38. Tarusianin, "Korrespondentsii," *Pozharnoe delo*, no. 4 (April 1898): 282.

39. Z. Kladukhin, "Korrespondentsii," *Pozharnoe delo*, no. 9 (September 1898): 617.

40. Tsentral'nyi statisticheskii komitet MVD, in *Statistika Rossiiskoi imperii, Sbornik svedenii po rossii 1896* (Saint Petersburg, 1897), 337–41.

41. Frierson, *All Russia Is Burning!*, 69.

42. Tsentral'nyi Statisticheskii komitet, MVD, in *Statistika Rossiiskoi imperii*, vol. 1, *Sbornik svedenii po Rossii za 1884–1885 gg.* (Saint Petersburg, 1887), 106.

43. "Khronika," *Pozharnoe delo*, no. 24 (June 24, 1906): 375–76.

44. *Pozharnoe delo*, no. 19 (May 20, 1906): 296.

45. *Pozharnoe delo*, no. 9 (September 1898): 619.

46. M. I. Semenov, *Pozhary i strakhovanie ot ognia v g. Moskve: Statisticheskii ocherk* (Moscow, 1914), 61.

47. S. P. Lunevskii, *Strakhovanie ot ognia* (Saint Petersburg, 1912), 115–20.

48. The firefighting journals were *Pozharnyi* and *Pozharnoe delo*. See Frierson, *All Russia Is Burning!*, chap. 8, for a discussion of rural branches of this association.

49. Frierson, *All Russia Is Burning!*, 238.

50. K. Iordan, "Pozharnoe delo v Rossii," *Pozharnoe delo*, no. 9 (September 1898): 573.

51. K. Iordan, "Pozharnoe delo v Rossii," *Pozharnoe delo*, no. 8 (August 1898): 500.

52. Sir Donald Mackenzie Wallace, *Russia*, rev. and enlarged ed. (London: Cassell, 1912), 403–4.

53. Joseph Bradley, "From Big Village to Metropolis," in Hamm, *City in Late Imperial Russia*, 13–14.

54. Semenov, *Pozhary i strakhovanie ot ognia*, 14.

55. *Ibid.*, 37–38.

56. *Ibid.*, 40.

57. *Ibid.*, 42.

58. *Ibid.*, 39.

59. S. I. Kanatchikov, "From the Story of My Life," in *The Russian Worker: Life and Labor under the Tsarist Regime*, ed. Victoria Bonnell (Berkeley: University of California Press, 1983), 42.

60. Prominent Russian entrepreneurs such as Fedor Chizhov often took their role as civic patrons very seriously and made significant contributions to the empire's advancement in arenas beyond commerce. See Thomas C. Owen, *Dilemmas of Russian Capitalism: Fedor Chizhov and Corporate Enterprise in the Railroad Age* (Cambridge, MA: Harvard University Press, 2005).

61. James H. Bater, “Between Old and New: St. Petersburg in the Late Imperial Era,” in Hamm, *City in Late Imperial Russia*, 44.
62. James H. Bater, *St. Petersburg: Industrialization and Change* (Montreal: McGill-Queen's University Press, 1976), 324.
63. *Pozharnoe delo*, no. 24 (June 24, 1906): 370.
64. Bater, “Between Old and New,” 44.

Fighting Fires (or Not) in Porfirian Mexico

AMY S. GREENBERG

The pumps failed, water was scarce, the fire department was badly organized, and the wind continued to blow with the same fury, so that it was believed, not without reason, that these three fires, at distant points, would lead to a general conflagration. Happily, however, the general solidity which characterizes the structure of Mexican houses stopped the progress of the flames.

“The Great Fire in the City of Mexico,” May 9, 1850

The evolution of urban fire protection in much of North America followed a fairly standard trajectory in the nineteenth century. In the late eighteenth century, or soon after the new cities of the nineteenth century were established, volunteer fire companies, which included large numbers of merchants and other leading men of the city, obtained firefighting apparatus—either hose engines or hand-pump fire engines—and took responsibility for turning out in case of fire in the city. Most cities in Canada and the United States experienced devastating conflagrations in the late eighteenth and early nineteenth centuries, which spurred municipalities and fire insurance companies to invest in equipment and buildings for the volunteers. The volunteers were generally lauded for their sacrifice to the community regardless of the extent of damage done by the conflagrations. By 1840 most cities in these two countries had dependable water supply systems and preliminary fire codes, largely in response to the widespread fear of fire in mostly wooden cities where no zoning regulations prevented the storage of highly flammable materials near open fires. Within this fire regime the hydrant represented “the modern symbol for fire protection,” and the installation and upkeep of hydrants was a high priority for municipal governments.¹

In the second half of the nineteenth century, the larger cities in much of North America began to take a more comprehensive approach to fire safety by institutionalizing zoning laws, alarm systems for the early detection of fire, comprehensive insurance for property owners, and most importantly, paid fire departments. Cincinnati established a department of full-time, wage-earning firemen equipped with modern steam engines in 1853, and over the next two decades most other large cities followed suit.²

There was nothing coincidental about the near-simultaneous professionalization of fire departments in Canada and the United States: firemen, politicians, newspaper readers, and insurance agents were aware and interested in the manner in which other cities were proceeding with this question. Philadelphia firemen traveled to Baltimore, Ottawa firemen traveled to Montreal, and companies in towns near the Canada-US border traveled internationally during this period, generally for social purposes (like parades and pumping contests) that were covered in the press. Civic officials from Ottawa, Halifax, and Toronto all traveled to the United States to “check in” on American fire departments and purchase steam engines.³

Insurance company representatives took the lead in the professionalization movement in both the United States and Canada. In many cases professional, paid fire departments proved no more successful at fighting fires than had the volunteers, and E. L. Frost and L. E. Jones have attributed the reduced losses from conflagration in nineteenth-century cities not to the professionalization of fire departments but to two processes: rebuilding with less-flammable materials and increases in house lot size. Nonetheless, just as urban dwellers in the late eighteenth and early nineteenth centuries had celebrated their volunteer companies and their engines both as a talisman against fire and because the superiority of a city’s firemen reflected the city as a whole, one of the clearest signs a city could cite to prove its enlightenment and stability after 1860 was its paid fire department, as before outfitted with the most modern equipment.⁴

Nor was this trajectory limited to North America. As historians such as Shane Ewen, Dirk Schubert, and Hubert Lussier have shown, cities in Great Britain, Germany, and France modernized at around the same time and in a similar manner: destructive conflagrations led to an increasing awareness of fire among an urban populace that demanded modern fire-protection regimes. In western Europe, as in North America, information and in some cases equipment circulated between cities, countries, and even continents. On both sides of the Atlantic, organized firemen and expensive firefighting apparatus were almost universally accepted in the nineteenth century as the central elements of an enlightened fire-prevention regime.⁵

This series of developments in the highly flammable cities of the nineteenth century was in each case sparked by a serious conflagration—a fire that burned unchecked, ravaging an extensive district of an important city, and searing itself in the minds of city dwellers. But what happened when that initial conflagration failed to ignite? What was the result when a fire, like the one in Mexico City in May 1850, “happily” burned itself out despite high winds, without doing extensive damage or causing any loss of life?

The answer can be found in the single North American country that diverged from the modernization pattern common to cities from Canada to western Europe. Before 1900 there was no such thing as a paid fire department anywhere in Mexico, and firefighting was often left up to the police and the public. Despite the fact that the “modernization” of urban public services was an explicit goal in late nineteenth-century Mexico, well into the twentieth century major Mexican cities lacked modern fire departments.

This proved true across Mexico. From fire-resistant Mexico City to the highly flammable provincial capital of Mérida along with its port city, Progreso, little attention was paid to fire protection, even during Mexico’s key period of modernization, the regime of Porfirio Díaz from 1877 to 1910, commonly known as the Porfiriato. This was a period of economic growth, financial stability, and intensive foreign investment, as well as harsh political oppression, which would culminate in Mexico’s 1910 revolution. Díaz’s motto was “Order and Progress,” and urban modernization was a key element of that vision of progress. As a result, urban planning and beautification gained a level of national importance (as well as federal funding) that was unthinkable in the middle decades of the nineteenth century, when fire departments in the large cities of the United States and Canada were being professionalized. Yet fire protection did not advance apace with other aspects of municipal government in these cities or any other major Mexican urban center.⁶

Mexico’s cities did not share a single fire regime, and there was more than one path to the shared conclusion that fire protection was not worth the investment. In most Mexican cities, property owners rationally made fire protection a low priority because the relatively fireproof nature of their stucco and masonry construction prevented conflagrations. But not all Mexican cities were equally fireproof. The capital of Yucatán, Mérida, and its port town, Progreso, both suffered greatly from fires and also failed to professionalize. Attention to the reasons why suggests that firefighting lagged behind other urban services in Porfirian Mexico for a variety of reasons, some general and others specific to individual cities, but in every case decisions makers concluded that limited resources were better focused on investments other than the prevention of fire.

In his 1975 study of two thousand years of Latin American urbanization, historian Jorge Enrique Hardoy remarked that “the urban history of the second half of the nineteenth century and the early decades of the twentieth is virtually unknown.” In 1992, he noted that there was still no “general history of urban planning in Latin America” or any “urban history of any individual country during the decades of the great transformation of the cities.” Hardoy called for further research, in particular, into “the evolution of the urban infrastructure,” but as of yet, that research is still mostly undone.⁷

In no area is this lacuna more evident than in the evolution of fire protection. Virtually nothing has been written on urban fire in nineteenth-century Mexico from either a scholarly or a popular perspective, and even less on the response to it. This stands in stark contrast to both Canada and the United States. Notwithstanding Stephen J. Pyne’s comment that fire is the only one of the four Aristotelian “elements” to lack a university department, American and Canadian fires have long been a topic of interest both in universities and among the general public of those countries.⁸

Not that there has been a tremendous amount to write about in the Mexican case. When the British fire-scholar Charles F. T. Young set out to document the state of firefighting around the world in 1866, he found little to say about Mexico. In fact, he didn’t even bother listing Mexico in his enumeration of “Fire Brigades of the World,” although he discussed fire companies in countries as diverse as Turkey and China. Given that Mexico had no fire brigades at the time Young was writing, his omission is hardly surprising. As late as 1880, there was no modern water system in even the largest towns and no fire hydrants.⁹

Structural factors bear part of the blame. Scholars have pointed out that throughout Latin America urban services were not provided until relatively late in large part because there was no tradition of strong municipal government in Latin America. The federal government was more concerned with international relations and other pressing matters of state than in providing city services. In the other nations of North America and in Europe, the responsibility for fire protection always lay with the municipality. Even in highly centralized countries like France, individual city governments proved independent in providing urban services. Municipal government in Mexico was particularly weak. Thus it was not until Porfirio Díaz’s rise to power in the late nineteenth century that funds for urban services became available to municipal governments.¹⁰

But matters had actually changed little at the close of Díaz’s regime. As one American observer noted with wonder in 1921, “Under the old systems the municipalities made practically no provision for combating fires and even in some of the largest towns there were not even volunteer departments, this function

being left to the police and the crowd”¹¹ A less kind description was offered by an American observer in 1910:

The alarm of a fire at Matamoros, Coahuila, Mexico, was given by the discharge of numerous pistols and guns. . . . After a long interval—during which the people watched the fire with interest, chattering among themselves meanwhile—there appeared, placidly trundling along the road the Matamorean equivalent of a fire-engine. . . . Behind walked the “fire-brigade”—a solitary peon, beating a bucket. Arrived at the scene of the conflagration, the water in the barrel was poured into buckets and hauled to the roof of an adjacent house, whence it was flung on to the flames. Everybody was greatly excited; the calmest thing of all was the fire, which burnt steadily on till there was nothing left to consume.¹²

While this description is rife with the racist assumptions that characterized the view many Americans held of Mexico and Mexicans during this period, several facts stand out. Both the organization and the equipment of the firemen in Matamoros (a sizable town with a strong American presence) left something to be desired, there were neither hydrants nor an alarm system in place, and the total destruction of the home in question by fire appears to have neither surprised nor particularly disturbed most of the observers at the fire. In 1900 alone, two sizable towns in the gulf state of Tamaulipas—the key port of Tampico and, sixty miles away, the river town of Panuca, with a population of eleven thousand—both burned down due to “there being no fire protection” and “no fire-fighting appliances” in the towns. Panuca, composed of thatched-roof adobe houses, was completely destroyed, while Tampico suffered nearly one million dollars of damage.¹³

Nor were the buildings in Tampico or Panuca likely to have been insured. Although there were reportedly twenty-six British and German fire insurance companies doing business in Mexico by 1905, including the German family firm Casa Boker y Cía, which offered fire insurance policies from a British insurer starting in the 1890s, fire insurance was not widely used, despite the fact that premiums were lower than in the United States or Canada, because “building materials [were] mostly adobe and stone, and fires [were] rare and generally not destructive.”¹⁴

But even where buildings were flammable, and even after powerful conflagrations, fire insurance continued to be underused. When the town of Pinos Atlas burned down in 1884, not a single home or business owner in the town carried insurance. Nor did the owners of any of the destroyed buildings in Progreso, Mérida’s port city, when a fire did \$2 million worth of damage in 1904. Mexico City fires in 1898 and 1900 burned American-owned meatpacking houses

(\$1,500,000 of damage) and a dry-goods store that were also uninsured or nearly uninsured.¹⁵

Owners of property in Mexico, be they Mexican, Canadian, or American, clearly had a different relationship to fire risk than did owners of property in Canada and the United States. They neither expected nor demanded these services in the manner that urban dwellers did elsewhere in North America. From the late eighteenth century forward, all newly settled towns in the United States made some considerations about fire. Grand Junction, Colorado, a mining town settled soon after the displacement of the Utes by the federal government in 1880, offers a typical example. Although the initial town settlement included a large transitory population of miners, a fire company was the first voluntary association (besides two churches) formed in the year following the town's incorporation. The issue of fire protection was at the heart of acrimonious debates over securing a "permanent" water system in the following decades, including very specific requirements for hydrant pressure, despite the fact that the town had not yet suffered a fire. Residents of this new frontier town expected, and demanded, a water supply that would not only provide quality domestic water but could also meet the needs of firefighters. This demand did not arise in response to conflagration: it was designed to prevent a conflagration.¹⁶

As one Canadian expert explained the underlying expectations of urban dwellers in "civilized communities," "every community has a responsibility toward its citizens in the matter of protection against fire. . . . Without exception, what has been termed 'the civic conscience' assents to the enforcement of laws directed toward the prevention of fire-breeding conditions, and to the allocation of public funds to maintain organizations for the extinguishment of fires that can not be prevented."¹⁷ But this was not the case in Mexico, even in the capital and even when joining the ranks of "civilized communities" was an explicit goal of the state.

Mexico City, the political and cultural capital of this highly centralized nation, was at the forefront of the modernization movement in urban services, as it was in most other matters. With a population of 300,000 people in 1884, it was almost four times as large as Mexico's next largest city, Guadalajara, and almost ten times the size of Mérida, other city this essay will be examining closely. Mexico has been described as a rural nation with two large cities during the Porfiriato, and Mexico City's size and population growth (from 1877 to 1910 the population more than doubled from 230,000 to 471,000) reflect its outsized importance within the country.¹⁸

That report of a "great fire" in May 1850 suggests not only the primitive state of firefighting at the time but also how Mexico managed to get along with so little. Hurricane-force winds spread embers from a fire in a carriage shop

across the city. “The pumps failed, water was scarce,” and the fire department was “badly organized”—most likely because no fire department actually existed. High winds suggested that the now-multiple fires would “lead to a general conflagration. Happily, however, the general solidity which characterize[d] the structure of Mexican houses stopped the progress of the flames.”¹⁹ What would certainly have turned into a conflagration in Canada or the United States was limited in its damage by the stucco and masonry construction of most city buildings. Time and again, Mexico City would escape destruction for the same reason.

Francisco Somera, a wealthy Spaniard who had immigrated to Mexico, served on the city council in the 1850s and 1860s, and in 1862 he organized the *Dirección General de Obras Públicas* (General Directorate of Public Works), Mexico’s first municipal office, staffed with professionally trained experts, designed to direct the development of the city. In the 1870s, at the start of Díaz’s rule, he proposed providing streetlights, paved streets, and potable water to one of the newly formed subdivisions on the outskirts of the city.²⁰ This was in keeping with Díaz’s vision. The architects of Díaz’s modernization plan hoped to turn Mexico City into a “New World Paris or London,” a showcase of urban culture and modern technology, and thus to prove to American and European investors that Mexico was an equal partner in an industrializing world. Potable water, fireproof buildings, and hydrants were all explicit goals, but civic planners in Mexico City frequently reacted to changes under way, rather than following a previously constructed plan.²¹ Thus modernization, even in the capital, did not follow a linear path.

Mexico City first organized a firefighting brigade in 1873, the year following a blaze that destroyed the Palace of the National Congress, at a time when there was little potable water and no hydrants in the city. The brigade does not appear to have had much equipment. When the city council first expressed the desire for a modern fire department, in 1886, there were about fifty small fires a year in Mexico City, which the brigade was wholly inadequate to address. The city first began placing hydrants on the corners of newly paved streets in that year and gave its firemen new nickel-plated helmets from Germany the following year, which the firemen wore in the Independence Day parade. The lack of public confidence in the fire brigade is suggested by the fact that when a factory caught fire that year, seven employees died trying to put it out. By the 1880s in the United States and Canada, it was generally accepted that fighting fires should be left to professionals and that “the unorganized efforts of employees to control a fire [were] usually futile.” Indeed, one report of a fire in a theater in Saint Louis, Missouri, in 1863 claimed that since the advent of a paid fire

department and fire-alarm system, “not one in ten persons left their seats to concern themselves with the matter” when “fire was seen bursting through the roof” of the lecture hall, so confident were they in the fire department.²²

A more pressing problem than fire for Mexico City was the nearly constant flooding in the rainy season. From 1886 to 1900, officials spent sixteen million pesos on a drainage system constructed by the same British firm that dredged the East River Tunnel in New York. Key municipal services provided to the growing suburbs served by the drainage system included trolleys, streetlights, running water, trash pickup, and police and fire services. Thus the provision of potable water to many areas of the city was undertaken comprehensively in the 1880s, but the government did not establish regulations for its delivery in the capital’s newly opened subdivisions until after 1900.²³ The *colonia* (subdivision) Guerrero was designed as a “model” worker’s district in 1874 but made “no provisions” for “insuring the health and safety of its residents.” In 1903 and 1905, new regulations from the *ayuntamiento* stipulated the supervision of the Department of Public Works during the development phase of new subdivisions and prohibited residence until paved streets, potable water, and drainage systems were in place. But even after the passage of these regulations, “Mexico’s capital was able to provide basic services to an ever smaller proportion of its population, creating in effect, two disproportionate cities,” neither of which, it should be noted, was particularly flammable.²⁴

The 1903 official bulletin of Mexico City’s municipal government bemoaned the fact that “in its old part” Mexico City still lacked potable water. Urban areas, even in the Federal District, struggled to find funding for basic services, even when they could tap into federal funds. In the other “new” Mexico City, public buildings were constructed of reinforced concrete and fire-proofed iron and steel, above paved streets with regularly placed hydrants. One middle-class *colonia* built by a Mexican entrepreneur with an eye toward American expatriates offered its own private fire department in the first decade of the twentieth century.²⁵

The long-desired organization of a municipal fire department occurred somewhat later. At the start of the century, there were only a few scattered hand engines in Mexico City, and the city’s expense budget for 1899 listed no expenditures related to firefighting.²⁶ When a major fire broke out in the business district in January 1904, the fire brigade, “which at best [was] inadequate to cope with a large fire,” reached the fire late and failed to halt the flames before they had spread to the municipal palace, central market house, and the building of the Consolidated Railway of Yucatán. One report estimated two million dollars worth of damage, “about half covered by [European] insurance.”

Mexico's finance minister had previously declined to purchase fire insurance for the federal property that burned in this fire.²⁷

The following year, President Díaz “personally handled a hose” when a livery stable adjoining the Department of the Interior caught on fire. Although headlines proclaimed, “The President of Mexico Fought Flames Which Threatened a Building,” his actions appeared to be more symbolic than effectual; in either case they again highlight the differences from urban western Europe and the rest of urban North America, where only “professionals” handled fire hoses. A lack of experience with great conflagrations meant that fire itself held a different meaning for urban residents in Mexico than it did in more-flammable North American and European cities. Fires were seen as less serious in large part because they were.²⁸

Either of these two fires might have been the event that drove the *ayuntamiento* to action. By 1908 Mexico City had a professional force with seventy paid firemen (at \$1.50 a day), twenty-four horses, seven officers, and six sergeants, as well as a gymnastics instructor. The total expense of the “fireman force” was \$56,894 a year (radically less than the \$1,600,000 a year for the police of the city). Firemen were paid roughly on par with policemen. A fire in the Chamber of Deputies the following year destroyed Mexico's original constitution of 1811, its act of independence, and two later constitutions, although the fire was contained within the building. Another 1909 fire caused \$500,000 worth of damage to city hall. Although none of these fires would have counted as a conflagration in Canada or the United States, the fact that they impacted the government no doubt gave them outsized importance in the eyes of governmental decision makers.²⁹

By 1910 Mexico City had opened three fire stations, all located in the central district, which collectively had five steam engines and two ladder companies, but still lacked an alarm system or fire tower. Critics complained that Mexico's firemen were badly trained, and that the only thing “that ha[d] saved Mexico from a terrible conflagration [was] the iron and stone or adobe construction, but every little while a fire occur[red] that shows the necessity for prompt alarm and more apparatus, coupled with a better knowledge of the tools at hand to fight fire.”³⁰

Fire insurance spread during the same period. American-owned businesses in Mexico at the turn of the century appear to have operated without insurance, which is notable given the US and Canadian context, where fire insurance was nearly universal by this time. The Kansas City-owned meatpacking house that burned in 1898 absorbed all its losses in that fire. One American owner of a dry-goods store, who saw his virtually uninsured business burn in 1900, learned from his mistakes and took advantage of the newly available insurance. When

his building burned a second time, six years later, it carried five hundred thousand dollars of insurance. On the other hand, the *Compañía Industrial de Orizaba*, a cotton factory, carried “not a penny worth of insurance” against fire in 1908, in part because it packed the (highly flammable) raw materials in “separate brick-built ‘fireproof’ compartments without any communication with one another.” “Nevertheless, every possible provision for combating a fire [was] made, and a perfect supply of water-hydrants [was] provided throughout the entire range of buildings.”³¹

While a professionalized firefighting force eventually became a part of the Porfirian modernization project in Mexico City in the early twentieth century, the capital was alone in this development. As part of their own modernization projects, regional capitals like Monterrey, which never suffered from great fires, and Mérida, which did, invested large sums of money in infrastructural improvements (particularly potable water systems, which incidentally reduced the risk of fire), sometimes going as far as hiring US firms to help design and implement these programs. Despite different fire regimes, fire protection was not a high priority in the regional capitals, and modernization did not include professional fire departments.

Mérida is one of the oldest cities in Mexico and was a center of Mayan activity for centuries before Spanish settlement in the early sixteenth century. Its population doubled between 1877 and 1910, from thirty thousand to sixty-two thousand people. Governor Olegario Molina, a close friend of Díaz’s (and an agent of the US International Harvester Company), wholeheartedly embraced the modernization project and set out to turn Mérida into a showcase of urban development.³²

Throughout the nineteenth century Mérida’s development was limited by lack of water (those who could afford it depended on deep artificial wells) and annual yellow fever outbreaks from the mosquitoes that bred in the private reservoirs used by most residents.³³ As in most other Mexican cities, there were no fire hydrants in the nineteenth century in either Mérida or Progreso. Unfortunately there were fires, cataclysmic ones that often started in the henequen warehouses in both locations that formed the basis of Mérida’s great wealth at the turn of the century, as well as the fuel for those fires. In response, Mérida was among the very first provincial capitals to form a fire brigade, on January 4, 1891, midway through the Porfirian period. It is unclear that the brigade was much of a success. As in other Mexican cities, in Mérida “blazes regularly raged out of control until they subsided.”³⁴

Although some fire insurance was available to business owners starting in the first decade of the twentieth century, premiums were high enough that many businesses in Mérida chose to rebuild at their own expense rather than

insure. A “great fire” in Progreso in January 1904 destroyed a whole block of businesses, warehouses, and the railway offices, for a total loss that may have been as high as two million dollars, according to initial estimates. None of the burned property was insured. Only a few months later, Progreso suffered another disaster. A September fire, fanned by strong winds and spread by an exploding tank full of alcohol, burned almost unchecked for an entire day. “The efforts of the volunteer firemen, whose apparatus was wholly inadequate to cope with a conflagration of such magnitude, were futile.” The losses were initially appraised at over one million dollars, “with but little insurance.” Unlike the Mexico City business owner who faced his second fire fully insured, the merchants of Progreso met their second disaster again unprotected.³⁵

Residents and particularly business owners bemoaned the general situation, but Mexico’s tradition of weak municipal governance made it difficult to enact reform. When Governor Molina provided funds late in the Porfiriato, civil servants began work on a system of waterworks like those recently installed in Mexico City, the standard bearer for all Porfirian modernization projects. In 1904, the first stage of construction was completed, providing downtown Mérida with drains and sewers, but the new system unfortunately poisoned the city’s water supply. Governor Molina turned to a Philadelphia firm to set things right. The Americans installed an expensive water plant, drilled one-hundred-foot wells, built hydrants, and promised to provide water to the city for free in case of fire. After another false start, the project was finally completed in 1909. At the close of the Porfiriato, when the modernization project would be derailed by national revolution, Mérida “boasted services and amenities . . . that the national capital would be hard pressed to match.” But it did not have a paid fire department on a par with Mexico City, although it arguably needed one much more.³⁶

A variety of factors seem to have contributed to this situation. Because Mérida’s experience with fire differed from that elsewhere in Mexico, there was no shared expertise for residents to draw on, no steam fire engines that might be borrowed from the capital, no visiting professional firemen to inspire and instruct residents. The shared knowledge of firefighting that proved so crucial to municipalization in western Europe and elsewhere in North America was absent. Because fire insurance was underused, the agencies lacked the power to compel municipal government to action, while the weak municipal government was already overburdened and underfunded.

Most important, perhaps, was the failure of the wealthy foreign companies who owned the flammable warehouses to take measures to improve the situation. Mérida’s fire regime was defined as much by the foreign capital that semicolonized the city as it was by the city’s flammability. Because admittedly

destructive fires tended to be limited to single warehouses, there doesn't seem to have been a shared feeling of risk among foreign investors in Mérida to compel them to support the single fire brigade. For the most part, they appeared content to take their chances and rebuild if they were unlucky enough to see their investments burn. The fire regime in Mérida-Progreso differed greatly from that in Mexico City, and investments were driven by different motives, but the institutional result in each was the same. Fire protection languished.

Is it a surprise that there was so little organized firefighting in Mexico in the decades before the Mexican Revolution? On one hand, it is. In the years after Porfirio Díaz came to power, US investment in the southernmost North American nation skyrocketed. The Díaz administration operated under the assumption that “the capital, skill, and markets which foreigners had at their command were critical for Mexico’s growth.” Both US and Canadian firms provided the technology and financing for the infrastructural improvements that, in those countries, complemented a professionalization of the human technology of firefighting. US observers were stunned at the primitive nature of firefighting in Mexico and repeatedly suggested (in a patronizing manner) that the United States could provide help in this area. Writing on the eve of the Mexican Revolution about Mexico City’s newly instituted force, one American observer typically noted that the fire department needed “instruction by some expert from the United States,” and that both “more apparatus and better instruction . . . should all be sought for here in the United States, [which had] the best fire fighters and the best fire fighting machinery in the world.”³⁷

Advances in Canadian firefighting occurred in close relation to those in the United States. Both fire engines and ideas about organization were gained, in many cases, from the United States. There is no reason why there shouldn't have been a similar relationship between Mexico and the United States and Canada. One US newspaper reported in 1897 that the governor of Chihuahua was so impressed by New York City’s firemen and equipment during a visit, compared to the “slow peon bucket brigade of his native city and the great losses caused by the deficiencies of apparatus in use there” that he “made inquires for the name of the manufacturers of the engines.” The article also reported that he “arranged for the purchase of some fire engines and [would] have fire crews accompany them to teach the natives how to handle them,” although there is no evidence that such a purchase took place, nor is it likely that the state of Chihuahua owned steam fire engines before Mexico City did.³⁸

Mexican officials proved willing to accept help from other North Americans in order to build sewers, pave streets, and, most importantly, provide water to hydrants, but didn't embrace their vision of fire protection. Given the large

numbers of American investors in Mexico during this period, this seems doubly notable. As Samuel Martland has shown in his essay in this volume, the fire protection regime in Valparaíso, Chile, closely resembled that in US and British cities precisely because the large numbers of foreign residents in that Latin American port city insisted on trained fire brigades and up-to-date equipment to protect their property.³⁹ Nor were English-speaking models the only ones available. France had a proud tradition of volunteer firemen at the very period, the nineteenth century, when Mexicans, like other Latin Americans, embraced Paris as their model for modernization.⁴⁰

Examined from a different perspective, however, the particular evolution of fire protection in Mexican cities makes perfect sense. Forces working against the organization and professionalization of fire companies and departments in Mexico were many. Insurance companies played a crucial role both in funding volunteer companies and promoting professionalization in both the United States and Canada. But fire insurance arrived late to Mexico, it was available to few business or home owners before 1900, and it was underused where available. Thus there was no pressure from these organizations on municipalities to provide for organized firefighting. Municipal governments were relatively weak in Mexico, and although the Porfirian modernization project valued urban amenities, the federal government still did not rank urban fire protection high on its list of priorities. The “volunteer spirit” that Alexis de Tocqueville identified as particularly American was absent from Mexico, and the urban Mexican elite had no interest in joining cross-class men’s clubs like urban volunteer fire companies, which were highly attractive to merchants in antebellum urban America for a variety of reasons that often had nothing to do with fighting fires.

Also most Mexican cities were less flammable than their counterparts elsewhere in the Americas. The combination of wood construction and high winds made Valparaíso, Chile, in the first half of the nineteenth century a tinderbox, as Martland shows, but the majority of Mexican cities were nearly fireproof without the benefit of zoning regulations.⁴¹ As Kristen McCleary’s study of Buenos Aires in the late nineteenth century shows, the fact that “everything [was] wood, wood, wood from top to bottom” was a key factor in spurring the extensive legislation and discourse devoted to preventing theater fires in that city.⁴²

Residents of fire-resistant cities, by contrast, were willing to let fires burn because they didn’t fear conflagration. They knew that even under the worst weather conditions, fires were unlikely to spread from building to building or to cause extensive loss of life. This cavalier attitude towards fire, an attitude that

led Porfirio Díaz to fight a fire himself, and for reporters to regard the event primarily as an excellent photo opportunity, extended even to flammable Mérida, where fire was a serious threat to property. The different fire regime in that city can largely be attributed to the power of foreign companies and the apparent decision by those companies that supporting citywide fire protection was not worth the investment. They were content to watch their warehouses, or preferably the warehouses of their competitors, burn to the ground.

Historians have noted that some of the modernizing tendencies of the Porfiriato were renewed starting about 1915, but the postrevolutionary period does not appear to have immediately ushered in an era of dramatic advancements in urban fire protection in Mexico. Although the number of firemen and steam engines in Mexico City had grown almost apace with the capital's population, its firemen were still being paid only \$1.50 per day in 1917 when the commander of the department suggested that they receive a raise.⁴³

There is some evidence that the increased use of fire insurance provided the impetus to professionalize in some areas. Tampico, a city of one hundred thousand and the largest city in Tamaulipas, was entirely "without any modern fire fighting apparatus, a paid fire department, or a sufficient water supply" in 1922, when one of the principle blocks in the business district burned down. In response to this, and the fact that insurance rates were perceived to be too high, the Civic Committee of the American Chamber of Commerce began to lobby for "modern fire fighting apparatus, a paid fire department, and an improved water system." In a move that occurred countless times elsewhere in North America three-quarters of a century earlier, insurance agents stepped in to help Tampico protect itself from fire. The Tampico agent of a German insurance firm offered to raise half the cost of a "modern fire engine" by public subscription if the aldermen appropriated the other half. The offer, however, was declined by the aldermen "due to the lack of available funds." In another example, a fire brigade established in 1908 in the regional capital Monterrey had gone "extinct" by 1923, and its equipment, "in a deplorable state," littered the patios of the police department. The firemen had to plead with the *ayuntamiento* for some facilities in which to store the discarded firefighting equipment as they attempted to reorganize the brigade under a new board of directors.⁴⁴

The fact that two major Mexican cities were effectively without any fire protection in the early 1920s reveals just how different Mexico's experience with conflagration and fire protection was from the experience of urban dwellers elsewhere in North America and Europe. Even in flammable towns where there was a proven need for firemen and modern equipment, modernization was slow and proceeded irregularly. Neither the Porfirian desire for "showcase" cities,

the presence of American investors in late nineteenth-century Mexico, nor the willingness of Mexicans to turn to Americans and Canadians for assistance in infrastructural improvements led to the creation of modern fire departments in Porfirian Mexico.

NOTES

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PART 2

FIRE AS RISK
AND AS
A CATALYST OF CHANGE

The Great Fire of Lisbon, 1755

MARK MOLESKY

You will in all likelihood have heard before this, of the unexpressible Calamity befallen the whole Maritime Coast, and in particular this opulent City, now reduced to a Heap of Rubbish and Ruins, by a most tremendous Earthquake . . . , followed by a Conflagration which has done ten times more Mischief than the Earthquake itself.¹

Abraham Castres, British envoy to the king of Portugal

The Lisbon earthquake was one of the most dramatic and consequential events in European history. Without warning on November 1, 1755, a series of violent tremors, followed by a devastating tsunami and a raging fire, brought the capital of the Portuguese empire to its knees. The resultant debate about the meaning and causes of the disaster among scientists, theologians, and philosophers—including the three most celebrated minds of the eighteenth century: Voltaire, Rousseau, and Kant—forced a stunned and frightened continent to reevaluate and, in some cases, abandon its most deeply held beliefs concerning God, man, and nature. For intellectual historians, the earthquake represents a defining moment, if not a turning point, in the course of the European Enlightenment. For Portugal, it marked the dawn of a new political era under the ruthless, visionary leadership of its first minister, the Marquês de Pombal (1699–1782).²

Less well known is that much of the damage inflicted on Lisbon was the direct result of neither the earthquake nor tsunami but of the ensuing fire, which began almost immediately after the initial tremors and swept unchallenged across the cityscape for more than a week. As terrible a conflagration as any experienced in European history, this fire effectively destroyed the Portuguese

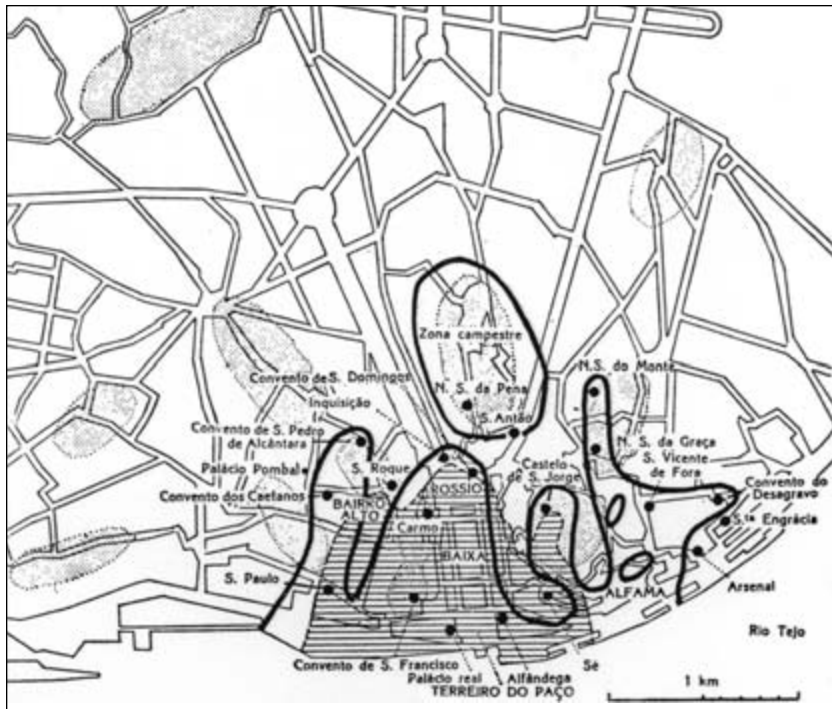


Figure 7.1. Map of Lisbon showing the area (*shaded*) destroyed by the fire. (Reproduced from José Augusto França, *Lisboa Pombalina e o Iluminismo* [Lisbon: Bertrand Editora, 1983].)

capital, laying waste to much of what was left of its opulent churches, convents, palaces, and private libraries. When it was all over, the entire city center, including most of the principal institutions of Lisbon’s political, religious, economic, and cultural life, was rendered little more than a charred, smoking ruin (fig. 7.1). The human cost of the combined disaster was staggering: perhaps as many as thirty thousand people lost their lives in Lisbon alone. “I believe so complete a Destruction has hardly befallen any place on earth since the overthrow of Sodom and Gomorrah,” wrote one survivor.³

This chapter will examine the origin, course, and ultimate impact of the Great Fire of 1755 on Lisbon’s population, infrastructure, politics, and economy. Mindful that the fire began in the wake of a major earthquake (like the San Francisco fire of 1906 and the Kantō, Japan, fire of 1923), it will seek to understand the conflagration as both a unique historical occurrence—with its own

internal dynamics—and as part of a complex and many-faceted disaster event. Ultimately, it will attempt to show how the Lisbon fire functioned as a catalyst for change, clearing the way for sweeping political and cultural reforms as well as an ambitious rebuilding project that decisively altered the layout and function of the city center. Attention will also be given to the state and effectiveness of Lisbon's firefighting institutions as well as those preventative measures taken—and not taken—during the process of reconstruction in the second half of the eighteenth century. Although contemporary accounts of the Lisbon disaster are, on the whole, less detailed than those of the Great Fire of London (there is no equivalent to Samuel Pepys's *Diary*, for example), they do allow for the construction of a useful historical narrative.

A City Destroyed

Early in the morning on the Feast of All Saints, 1755, the captain of a British ship anchored off the coast of Lisbon witnessed an event that would have a profound impact on the European mind. Experiencing a sudden jolt, he glanced toward shore, where to his “amazement,” he “beheld the tall and stately buildings . . . tumbling down with great cracks and noise.”⁴ During the minutes that followed, he watched—paralyzed with fear—as one of the great cities of the world was transformed into a pile of dust and debris. Although he and his crew were able to steer their ship out into the Atlantic and escape injury, few would be as lucky.

Striking at approximately 9:45 a.m. on a feast day when thousands were attending Mass, the earthquake would transform Lisbon's churches into death traps, their vaulted ceilings toppling down on helpless parishioners. Others found themselves pinned under the rubble of their fallen homes or crushed when buildings collapsed into the narrow streets. Its strength estimated at between 8.5 and 9.0 (or more) on the moment magnitude scale M_w , the earthquake originated several hundred miles off Cape St. Vincent in the Atlantic Ocean. The result of seismic activity along the fault line dividing the African and Euro-Asiatic tectonic plates, it would inflict damage far beyond Portugal and Spain. Indeed, shocks were felt in Lyons, Strasbourg, Switzerland, Cork (Ireland), as well as the Italian Alps. In North Africa, from Tétouan to Agadir, Morocco, the earthquake caused considerable destruction and many deaths.⁵

But the horror was far from over. Of those who flocked to the riverbank for shelter in the immediate aftermath of the earthquake, many would be swept away by a terrible tsunami, whose giant waves would ravage large stretches of

the western and southern coasts of the Iberian Peninsula. A rare event in the Atlantic Ocean, the tsunami of 1755 would sink ships, destroy buildings, and pull one newly constructed marble quay completely into the Tagus River. Hours later, its waves would reach the shores of Ireland, Great Britain, the Lesser Antilles in the Caribbean, and even Brazil.⁶

It was in this atmosphere of chaos and confusion that the fires began. “It may be said without exaggeration,” wrote one eyewitness of Lisbon on the first day, “that ’twas on fire at least in a hundred different places at once.”⁷ Others reported five or six large blazes. In one of the most reliable contemporary accounts, eyewitness Joaquim José Moreira de Mendonça writes that fires began simultaneously in “the palace of the Marquês de Lourical, the Church of São Domingos, and the Castle,” as well as “other buildings” almost immediately after the last major tremor (one account claims that the fire at the Marquês de Lourical’s palace actually preceded the earthquake).⁸ Experiencing the unfolding disaster from the castle promontory overlooking the city, Moreira de Mendonça had an exceptionally clear and commanding view of the tragedy. Another eyewitness, a British merchant, also identifies the Church of São Domingos as the location of one of the first fires, along with the Convent of the Boa Hora (Good Hour) and “the rest at other parts of the city.”⁹ Several others saw the magnificent and imposing Church of São Paulo, located just west of the Riverside Palace (Paço da Ribeira), engulfed in flames.¹⁰

Fed by a strong, steady wind from the northeast, the fires quickly multiplied and began to move across the cityscape. Those that had started along Lisbon’s northern fringes (at the Palace of the Marquês de Lourical, the Church of São Domingos, and the castle) joined up and swept southward, while those fires in the east (at São Paulo’s, the Carmo Church, and the Convent of the Boa Hora) moved steadily south and eastward towards the river. Terrified survivors, still recovering from the shock of the earthquake and tsunami, were now menaced by this new horror. “All that afternoon [of November 1],” wrote the severely injured Englishman Thomas Chase, “I had time to make the most melancholy reflections, whilst the flames were spreading everywhere within my view with inexpressible swiftness. Till about five o’clock they seemed approaching close to the window of the room where I lay.”¹¹ Dissuaded from ending his agony by flinging himself out the window, Chase allowed himself to be carried out of his home on a chair by a German gentleman and his servant toward the Terreiro do Paço, the large royal square along the river. Making his way southward through the smoke and rubble, Chase “observed that the fire had already taken possession of the street leading to the cathedral; [yet] in the Silversmith’s Street there were no houses quite fallen.”¹² Upon reaching the square, he found a

group of petrified survivors and observed the adjacent Riverside Palace burning slowly. Despite the width and open expanse of the Terreiro do Paço, the heat and the size of the fire that surrounded it threatened all who had sought safety there. Narrowly escaping death when his temporary lodging, a small shed, burst into flames, Chase watched as several gunpowder shops exploded on a nearby street.¹³

Upon rising the next morning, Chase saw that the fire had only grown larger. A change in wind direction had fueled the flames, whipping them down the hill from the cathedral toward the square. Soon showers of ash began to fall from the sky, igniting everything flammable, including the quilt that Chase was wrapped in. Many eyewitnesses refer to this falling ash, which aided the spread of the blaze. “The wind blew upon us large showers of fire like hail,” wrote one survivor, “and it became so hot and full of smoke, that we were almost blind.”¹⁴ As the day wore on, the intensity of the fire increased. “As soon as it grew dark,” another eyewitness remembered, “the whole city appeared in a blaze, which was so bright that I could easily read by it.”¹⁵ Jácome Ratton (1736–1820), a Franco-Portuguese merchant who had survived the collapse of his home in the first minutes of the disaster, sought shelter on a hilly, open space overlooking the city. “Soon after it became night,” he wrote, “the fire gave rise to a most horrible spectacle. The flames devoured and illuminated the city as if it were day. It was not the same city. One could hear only cries, lamentations, and the chanting of prayers.”¹⁶ One ship captain saw the fire ten leagues from the Portuguese coast.¹⁷

Such accounts testify to the extraordinary temperatures that must have been reached as hundreds of small fires coalesced into a single monumental blaze. During the first week of November 1755, perfect conditions existed for such a fire: a steady wind; cool, dry air; and plenty of combustible material acting as fuel. In many respects, the Lisbon fire resembled the Great Fire of London of 1666, which, guided by a brisk east wind, gutted an ellipse-shaped area north of the Thames. A similar pattern can also be found in the Great Baltimore Fire of 1904, in which a substantial crescent-shaped area was destroyed north of that city’s inner harbor.¹⁸

It seems highly probable, therefore, that the Lisbon blaze became a fire-storm at some point during the course of the first few days. Like the great fires in Rome (AD 64), London (1666), Chicago (1871), San Francisco (1906), and Kantō (1923), the Lisbon fire produced high winds, intense, radiated heat, as well as a substantial ash cloud. Located in the valley of an ancient riverbed, Lisbon’s city center, the Cidade Baixa, or Lower Town, is bounded on the north, east, and west by hills and on the south by the main branch of the Tagus River.

This dramatic setting—which one eighteenth-century writer likened to “an immense amphitheatre”—represents a classic topographical site for a firestorm, a phenomenon that thrives in closed spaces and is defined by the creation of a self-sustaining wind system.¹⁹ Known for its narrow streets and tightly packed buildings, the Baixa not only suffered the worst earthquake damage; it was the area most completely burned out by the fire. “This [fire],” wrote one eyewitness “completed the destruction of the city, for in the terror . . . no attempt was made to stop it, and the wind was very high, so it was communicated from one street to another by the flakes of fire driven by the winds; it raged for eight days, and this in the principal and most thronged parts of the city.”²⁰

Causes

How did the fire start? One eyewitness refers to three principal causes, all of which are corroborated in other accounts. The primary cause: church candles and lamps. “The first of November,” he writes, “being All-Saints-Day, a high festival among the Portuguese, every altar in every church and chapel, some of which have more than twenty, was illuminated, with a number of wax-tapers and lamps, as customary. Those setting fire to the curtains and timberwork that fell with the shock, the conflagration soon spread to the neighboring houses.”²¹ With so many candles, oils, and other combustible material, the flames must have spread quickly. One priest, trapped in the upper floor of a burning convent, pleaded with a passing cleric far below to give him absolution before the flames consumed him.²²

The second cause was stoves, fireplaces, and “kitchen chimneys” in private homes, many cooking the feast-day meal.²³ As these structures collapsed during the earthquake, the ruins caught fire, producing blazes that were virtually impossible to extinguish. “What is certain,” wrote one anonymous eyewitness, “is that the fire began as the houses fell, and because each contained a fire within it [stoves, candles, etc.], it spread to the combustible materials.”²⁴ Bakery fires were also believed to have contributed to the general conflagration. One source alleges that the fire began in the Rua dos Fornos (Street of the Ovens).²⁵ And architectural plans for the rebuilding of Lisbon include a site in the Baixa where commercial ovens (as well as the bakers’ living quarters) would be concentrated and walled off from the rest of the city.²⁶ Although it seems likely that far fewer fires would have broken out if the earthquake had occurred in the middle of the night when stoves and ovens were not in use, it is doubtful that many of these fires could have been successfully contained due to the

poor state of firefighting in eighteenth-century Lisbon (see the later section “Firefighting”).

A third cause was arson. In the wake of the earthquake and tsunami, hundreds of convicts escaped from urban prisons and galley ships along the Tagus. These “*malvados*” (evil doers), “thieves,” “villains,” “wicked incendiaries,” and “ruffians,” as they were variously called, descended on the city like ravening wolves, murdering and plundering their way through the burning *bairros* (neighborhoods) before the arrival of troops on November 2.²⁷ The main reason for setting fires was to depopulate the city even further in order to facilitate the pillaging. In this, many Portuguese soldiers appear to have participated. “The king’s soldiers,” writes one survivor, “amongst whom were many foreign deserters, instead of assisting the people, turned plunderers; even adding, as some of them before their execution confessed, to those fires, which already were dreadfully numerous.”²⁸

Another motive for arson may have been revenge. “A Moor, who got out with the rest from the [galleys],” one eyewitness recounts, “confessed, before he was hung up, that he set fire to the city in several places, after the cessation of the first shock. A French deserter confessed he did the like in three places, one of which was to the India-House, adjoining to the palace.”²⁹ Another letter, written by a Spaniard, claims that “Jews who were in the custody of the Inquisition and other incarcerated criminals set fire to the Royal Palace [Paço da Ribeira], which, despite being a strong structure, was reduced to ashes and earth.”³⁰ While it is difficult to judge the reliability of these accounts, it is beyond dispute that there were still powerful historical prejudices toward Jews (as well as Moors) in both Portugal and Spain in the mid-eighteenth century. Despite widespread European condemnation, the Inquisition remained a fact of life in Portugal. Jews who were accused of less-than-sincere conversions to Christianity were still burned at the stake in elaborate autos-da-fé in front of thousands of spectators in Rossio Square and the Terreiro do Paço.³¹

Another alleged source of the Great Fire, according to several accounts, coincided with one of the leading theories on the causes of earthquakes in the eighteenth century: the explosion of fires deep within the earth. Two centuries before the discovery of plate tectonics, the fire theory was held by numerous men of science across Europe, including Joaquim José Moreira de Mendonça’s brother, Veríssimo Antonio, and the great German philosopher Immanuel Kant.³² In 1756, in the wake of the Lisbon disaster, Kant would publish three essays on earthquakes.³³ In them, he argued that subterranean fires not only produce earthquakes but also hot springs and baths, aid in the formation of iron ore, and play a salutary role in the growth of vegetation. If the earth

did not release its energy through these periodic, fiery tremors, he reasoned, the results would be even more terrible natural disasters.³⁴ One proponent of the fire theory was the Lisbon priest and earthquake chronicler Manoel Portal, who postulates that several of the “tongues [of flame that caused the earthquake] could have also set fire to buildings.” Portal mentions a “very credible person” who saw “flames escaping from the earth on a hill, which had neither houses nor chimneys, just as it was set in continual motion by the earthquake.”³⁵

Of course, many others believed that the true and efficient cause of the disaster was an angry God. “Know, oh Lisbon,” thundered Jesuit firebrand Gabriel Malagrida (1689–1761) in a sermon to the city’s inhabitants, “that the real destroyers of so many houses and palaces, the devastators of so many churches and convents, the killers of so many inhabitants, the devouring fires of so many treasures . . . were not comets, stars, vapors, . . . or natural causes, but only our intolerable sins.”³⁶ To these individuals, the Lisbon fire was an elemental, if secondary, component of a divinely instigated tragedy. “Is God not the master of fire?” asked councilor of war D. Antonio Luiz Caetano de Sousa. “Yes. . . . For the earth is not beneath his dominion. . . . It is he who moves the winds, makes fire, causes terrestrial exhalations; and [it is he] who caused this earthquake in fulfillment of his offended sense of justice.”³⁷

Duration

How long did the fire last? While most survivors agree that the principal blaze lasted between five and ten days, newly discovered evidence suggests that several smaller fires continued to burn for more than six weeks after the earthquake. (It should be remembered that at least one fire was still burning in the ruins of the World Trade Center in New York City three months after its destruction on September 11, 2001.) Perhaps the best source on this question is the correspondence of Filippo Acciaiuoli, the papal nuncio in Lisbon from 1754 to 1760. Recently uncovered in the Vatican Library, Acciaiuoli’s letters provide a reliable and almost daily record of the size, course, and duration of the blaze. In his attempts to keep Benedict XIV, Vatican officials, and his family back in Italy apprised of the tragedy, Acciaiuoli provides details about the fire (including the closest thing we have to a timeline) that are missing in other, more synthetic accounts.

In his first letter, dated November 4 (three days after the earthquake), Acciaiuoli informs his brother that the fire has “burnt many houses; and

moving from one to the other, has traveled throughout the whole city. . . . It is now near my home; and one can see that there is nothing that can stop it.”³⁸ A week later, he states that the fire—having “caused not less damage than the earthquake itself”—lasted until November 7, seven days after it began.³⁹ Yet on November 18, he reports that the fire is still burning, surviving on the “wood and the remaining objects of burned-out houses,” as well as “straw, hay, and other combustible materials” from local “cantinas.”⁴⁰ (One common and exceptionally slow-burning substance used in furniture of the period was *pau brasil*, or Brazil wood, from which the country received its name.⁴¹) On December 16, more than six weeks after the earthquake, Acciaiuoli informs the cardinal secretary of state, “The fire is still not extinguished, it continues in the basements of burned houses and especially shops.”⁴²

Although the nuncio never mentions the fire again, Bento Morganti, a priest of Portuguese and Italian parentage, asserts in his *Letter from One Friend to Another* that “as of December 19, the fire continue[d] to burn in many parts [of the city].”⁴³ Moreover, another eyewitness, an anonymous *Lisboeta* writing in the margins of a copy of Moreira de Mendonça’s *Historia universal dos terremotos* (World History of Earthquakes, 1758), agrees that the blaze continued into December, stating unambiguously that “the fire in the city lasted more than a month,” while a British merchant, Thomas Bean, in a letter to his business associates, wrote that the “fire . . . was burning [in] the Latter Part of November.”⁴⁴ Although we may never know for certain when the fires were ultimately extinguished, Father Acciaiuoli does refer (in a letter of December 23, 1755) to the “excessive humidity caused by the substantial amount of rain that ha[d] fallen during the week.”⁴⁵ Perhaps these winter showers put a definitive end to the last lingering vestiges of Lisbon’s Great Fire.

Firefighting

Unfortunately for the citizens of Lisbon, the enormity of the disaster meant that few serious attempts to extinguish the blaze were made. Even under normal circumstances, the city’s firefighting capabilities were limited. Narrow, crooked streets, steep hills, poor sanitation, and an abundance of wood-framed structures rendered Lisbon unusually vulnerable to outbreaks of fire.⁴⁶ Moreover, water had never been particularly abundant in the city, even after the construction of an aqueduct in the first half of the eighteenth century.⁴⁷

Like most European cities, Lisbon took measures to combat the threat of fire. In 1395, the senate decreed that town criers be dispatched each night in

every parish to remind the populace to put out their candles and chimney fires. When a fire did occur, all carpenters were expected to rush to the scene with their axes in the hope that they could contain the fire through demolition and the creation of firebreaks. Moreover, “all women” were mandated to bring their “pitchers and pots” for carrying water from the few and not always accessible city fountains.⁴⁸ It is significant that the women of Lisbon played a role in this traditionally male-dominated public service. As mistresses of the kitchen (where pitchers and pots were presumably kept) and thus guardians of valuable fire-fighting equipment, they were expected to do their civic duty. They were to be joined at the fire by “one hundred armed city officials” who would guard against robbery during the chaos.⁴⁹

In 1681, steps were taken to modernize Lisbon’s firefighting capability, when the senate ordered the purchase of leather buckets, axes, hoes, pickaxes, and primitive hoses from Holland, where the best equipment was made.⁵⁰ Funds would be distributed to those workers, whose responsibility it was to respond to neighborhood fires. Unfortunately, the system proved inadequate. Organization was lacking, the equipment was poorly maintained, and the shortage of water continued. Even the purchase of mobile water pumps (*bombas*) from Holland two years later had little impact because Lisbon’s barely navigable streets rendered them ineffective.⁵¹

In 1734, four state-of-the-art pump tanks were purchased in England to great public acclaim (the term firefighter, or *bombeiro*, derived from *bomba*, first came into use in Portugal during this period).⁵² Yet in 1750, five years before the earthquake, a major fire would completely destroy the Royal Hospital in the Rossio district. Bowing to popular pressure, Pombal ordered that the pumps be placed in the supposedly more responsible hands of local magistrates.⁵³ But this did little good.

When the Great Fire broke out in 1755, evidence suggests that no serious attempts were made to extinguish it. The twin catastrophes of the earthquake and the tsunami, the prevailing chaos, the rampaging bands of thieves and deserters, as well as the rumor that the gunpowder store in the castle might explode, made any coordinated firefighting effort impossible. Moreover, the terrified populace was doing all it could to escape the devastated, burning city for the safety of the outlying fields. In the official report on the government’s response to the disaster, *Account of the Principal Measures Taken after the Earthquake Suffered by the Court at Lisbon* (1758), there are only two firefighting orders given by Pombal, both involving limited actions along the riverbank.⁵⁴ The overwhelming majority of the directives involve arresting and trying wrongdoers, feeding the hungry, aiding the injured, burying the dead, regulating prices, protecting the

coast from pirates, even recovering the body of the Spanish ambassador. In short, the government was simply too busy trying to restore order to attempt to extinguish a massive and unpredictable fire. Besides, Lisbon's streets (so difficult to navigate under normal conditions) were now clogged with fallen masonry, broken carriages, and rotting bodies, and thus largely impassable.⁵⁵ The main fire would have to burn itself out before any serious salvage efforts were undertaken.

Damage Assessment

Lying on the soft alluvial soil and fine Miocene sand of a former riverbed, the Cidade Baixa was especially vulnerable to seismic activity. Of all Lisbon's *bairros*, it would sustain the most serious earthquake damage.⁵⁶ It was also the area most affected by the fire.⁵⁷ According to Moreira de Mendonça, the destruction was staggering: "the fire reduced to ashes a large portion of the old city and a large portion of the new city." It "completely destroyed the neighborhoods of Ribeira, Rua Nova, and Rossio, and the largest parts of the neighborhoods of Remoulares, Bairro Alto, Limoeira, and Alfama, which are the richest and most populous seven neighborhoods of the twelve that make up the city."⁵⁸ This was certainly the view of those outside Portugal as well. "The last Accounts assure us," writes British clergyman Samuel Clark, "that much more damage has been sustained by the Fire than by the earthquake itself."⁵⁹ In the opinion of one literate *Lisboeta*, "[It was] the cruelest fire the world has ever experienced. You do not read of its equal in all of ancient history, not in the fire that destroyed Carthage, nor in the voraciousness of the fire at Troy (assuming this to be true)."⁶⁰

In all, an area encompassing one and a half square kilometers, or fifteen hundred meters by one thousand meters, was largely gutted.⁶¹ Within this oval, the majority of Lisbon's most prominent buildings were located and most of its population. In 1755, Lisbon, with between 200,000 and 250,000 inhabitants, was the fifth most populous city in Europe behind London, Paris, Naples, and Amsterdam, and its third busiest port.⁶² As the main commercial conduit through which New World goods entered the European economy, it was also one of the wealthiest. A sizable share of this wealth financed the decoration of Lisbon's churches and palaces, which were legendary for the immoderacy of their opulence and grandeur.⁶³

Although the earthquake itself did considerable damage—toppling churches, houses, government buildings, etcetera—it was the fire that destroyed the

majority of the Baixa's buildings and their contents. "In many streets," reports Manoel Portal, "the earthquake caused little damage, not even pulling down any houses, though many of these would [later] be completely consumed by the fire. The Rua Nova dos Mercadores [New Street of the Merchants] was completely reduced to ashes, although only a few houses initially fell [as a consequence of the earthquake]." ⁶⁴ Indeed, if there had been no fire, some areas might have suffered only minimal damage; and many treasures that were lost might have been safely recovered from the ruins. "The fire," wrote Father Antonio Pereira de Figueiredo in his *Commentary* on the earthquake disaster, "destroyed and consumed everything of magnificence, nobility, and worth in the city." ⁶⁵

What specifically did the fire destroy? In his *World History of Earthquakes*, Moreira de Mendonça provides a comprehensive accounting of the destruction, carefully distinguishing between the damage caused by the earthquake, the tsunami, and the fire. According to him, the most serious losses were the Riverside Palace, the newly built Opera House—said to be "the most magnificent and beautiful" in Europe—and the luxuriously decorated patriarchal church. ⁶⁶ Also destroyed (from a list that runs several pages), were the Church of São Paulo, the Basilica of Santa Maria Maior (Lisbon's cathedral), the Carmo Church, the Church of Santo António, and the Royal Hospital, in which hundreds of patients were burned to death. ⁶⁷

The greatest cultural loss was undoubtedly the Royal Library, housed in three large marble rooms in the Riverside Palace. The pride of the previous monarch, João V (1689–1750), it contained over seventy thousand volumes and was considered comparable in quality and size to both the Vatican Library and the library of Louis XV. ⁶⁸ Decorated with Gobelin tapestries and paintings by Van Dyck and Jan Breughel the Elder, the library was also renowned for its extensive collection of engravings by Rembrandt, Rubens, and Callot. Its destruction in the Great Fire ranks as one of Europe's foremost cultural tragedies. ⁶⁹ Another terrible loss was the stately palace (one of countless aristocratic homes consumed by the flames) of the Marquês de Louriçal, which contained over two hundred paintings, including works by Rubens, Titian, and Correggio, as well as a library of more than eighteen thousand volumes and a priceless collection of maps and charts from Portugal's voyages of discovery. ⁷⁰

In purely economic terms, the kingdom of Portugal may have lost upward of 32 to 48 percent of its GDP in the disaster—much of it to the fire. ⁷¹ Over thirteen thousand dwellings were destroyed in Lisbon alone, along with tremendous quantities of personal property: furniture, jewelry, silver plate, diamonds, and coins. ⁷² Few suffered more than the foreign merchants from Britain,

Holland, France, Italy, and Germany, who saw much of their inventories go up in flames.⁷³ Likewise, the Portuguese government experienced substantial economic losses in the fire. Both the Customs House (*Alfândega*) and the India House (*Casa da Índia*) and all their precious contents were consumed in the blaze, not to mention the Royal Docks, the Treasury House, the consulate, and various court houses.

Victims

How many people perished in the Great Fire? Eighteenth-century accounts provide no clear guidance. According to one survivor, “the numbers of poor broken limbed persons who were forced to be deserted even by those who loved them best and left to the miserable torture of being burnt alive” were “infinite.”⁷⁴ Recalled a priest, “Many people who still drew breath beneath the ruins and who could not be saved were consumed by the fire.”⁷⁵ In his landmark twentieth-century study of the disaster, Francisco Luiz Pereira de Sousa puts the number of fire victims at between two and three thousand. Yet this estimate is likely too low in that it is based on an underestimation of the total number of deaths (between fifteen and twenty thousand, he claims) in the earthquake, tsunami, and fire.⁷⁶

A recent study of the remains of 214 victims of the Lisbon disaster (from a gravesite containing perhaps three thousand bodies) found under the floor of the former Convent of Our Lady of Jesus shows injuries that are consistent with burning: charred bones that suggest “heavy fire exposure, sometimes with skull opening and splitting” as if the cranium had “exploded.”⁷⁷ Pieces of charcoal and charred wood were found with the remains.⁷⁸ What cannot be determined is how many of these victims died in the fire and how many were simply burned after death.

Nevertheless, this discovery of a single burial site containing potentially thousands of victims (when it is known that bodies were disposed of in various locations throughout the city as well as at sea) provides strong evidence that the overall death toll has been underestimated.⁷⁹ In a recent article, Alvaro S. Pereira has argued that modern researchers may have undercounted the total number of deaths in Lisbon by some 20 percent because children under seven years of age were left out of the pre-earthquake population figures.⁸⁰ Moreover, it seems likely that many bodies—particularly children and small adults—would have disintegrated in the fire and thus would not have been included in the parish death records.⁸¹ Some have even conjectured that Pombal’s government

encouraged the dissemination of lower casualty figures in order to deter invasion and maintain foreign investment.

If we accept Pereira's view that at least thirty thousand people died in Lisbon and a further ten thousand died outside the city in Portugal, Spain, and North Africa—and the majority of these victims died as a result of the earthquake or tsunami—then at least some of the difference must be attributable to the fact that Lisbon experienced a major conflagration and these other areas did not.⁸² Indeed, the sections of Lisbon that suffered the greatest loss of population were within the densely inhabited, so-called burned parishes (*freguesias queimadas*).⁸³ It is well known that in the San Francisco and Kantō earthquakes, many more people died in the subsequent fires than as a direct result of the earthquakes themselves.⁸⁴ All of this indicates that at minimum five to six thousand—and perhaps as many as ten thousand—people perished in the Great Fire of Lisbon.

A City Reborn

In the wake of the disaster, Pombal took decisive steps to restore order and avert more deaths from starvation, violence, and disease. (One Lisbon physician wrote at the time that the health danger from rotting corpses was somewhat mitigated by the sanitizing effects of the fire.)⁸⁵ On November 29, Pombal called for a survey of the damage in order to discourage future lawsuits and plan for the rebuilding of the city (fig. 7.2).⁸⁶ Like London in 1666, the entire city center had been destroyed. Yet private-property laws were not as strong in Portugal, allowing for a more generous exercise of eminent domain. In a decree of June 12, 1758, José I (1714–1777) expressed his government's rebuilding policy: "I wish [my subjects] to prefer, as they should, over and above private interests . . . the public utility of regularity and beauty . . . in all of the streets whose buildings were ruined by the earthquake and burnt by the fires which ensued."⁸⁷ It was more a reflection of Pombal's wishes, however, than the king's. For in the aftermath of the earthquake, the indispensable first minister had become a *de facto* dictator, ultimately achieving a level of political power that simply did not exist in seventeenth-century England. Thus Pombal and his architects could attempt what Christopher Wren could not: rebuild a great capital city according to an original, preconceived vision.

This new Lisbon would be a pure expression of eighteenth-century city planning.⁸⁸ Because the area of devastation was so vast, Pombal was able to choose the ambitious "Plan no. 5" (*Planta número 5*) of Captain Eugênio dos Santos (1711–60) (fig. 7.3), which called for the complete demolition of the city



Figure 7.2. The future Marquês de Pombal directs the rebuilding of Lisbon. (Eighteenth-century print by Maurício José do Carmo Sendim. Reproduced from *O grande terramoto de Lisboa: Ficar diferente*, ed. Helena Carvalhão Buescu and Gonçalo Cordeiro [Lisbon: Gradiva, 2005], 207. Original in the Museu da Cidade de Lisboa, Lisbon.)

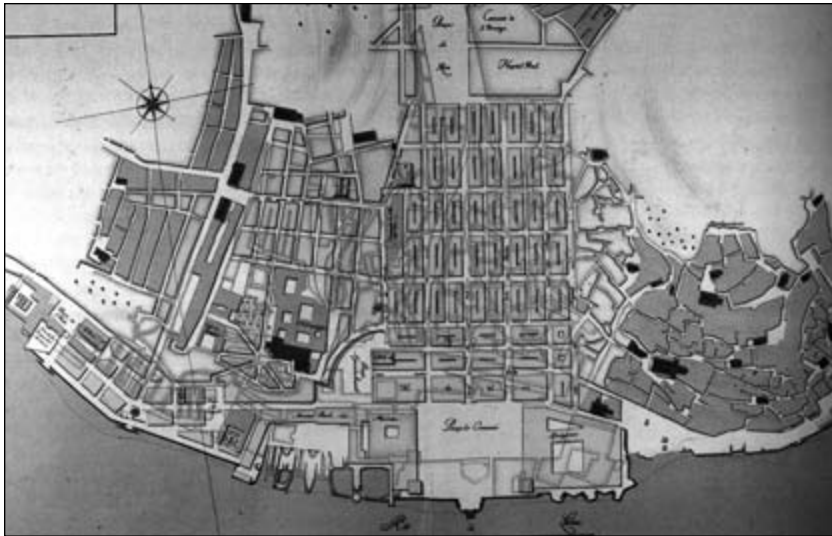


Figure 7.3. Captain Eugênio dos Santos's "Plan no. 5" for the reconstruction of Lisbon. (Eighteenth-century drawing. Reproduced from *Monumentos 21 Revista Semestral de Edifícios e Monumentos* [Lisbon: Direcção-Geral dos Edifícios e Monumentos Nacionais, 2004], 68.)

center and a wholly reconceived Baixa.⁸⁹ Following a basic gridiron pattern, which echoed both the Roman *Castrum* and the work of French fortifications designer, the Marquis de Vauban (1633–1707), a team of military engineers/architects led by General Manuel Maia (1672–1768) widened and straightened Lisbon's streets to allow for a freer movement of people and commerce.⁹⁰ The city's two great squares—the Rossio and the Terreiro do Paço—were connected by long avenues named after important market activities, and new buildings were regularized in size, structure, and decoration.⁹¹ The area to be rebuilt closely conformed to that destroyed by the fire.

In their plans, General Maia and his assistants incorporated numerous measures to protect Lisbon from future earthquake and fire disasters. The new building model or *gaiola pombalina* (Pombal cage), to which all structures in the Baixa now had to conform, featured a flexible wood frame designed to withstand the shock of an earthquake and a foundation that was secured to the ground by pine logs treated with salt to prevent both decay and combustion. Each building would be designed with a cistern in the basement, and firebreaks (*guarda-fogos*) were constructed on roofs to impede the movement of flames.⁹² Bakeries would be concentrated along the Calçada de São Francisco (Walkway of Saint Francis)

with a high wall separating them from other structures.⁹³ It is very likely that both Maia, who had studied Wren's designs for the rebuilding of London, and Pombal, the former ambassador to England, were well aware that the Great Fire of London had begun in a bakery on Pudding Lane.

Curiously, little was done in the wake of the catastrophe to improve Lisbon's firefighting capabilities. Shops still sold charcoal and firewood, and gunpowder factories were still allowed to operate within city limits. In 1766, Domingos da Costa was named Lisbon's first fire chief in an attempt to centralize the city's firefighting efforts.⁹⁴ However, the old problems remained: the difficulty of moving water pumps up steep inclines, the relative lack of water (even after the construction of numerous new public fountains), as well as the problem of effectively identifying and communicating the location of a fire.⁹⁵ In 1769, the newly rebuilt Patriarchal Church burned to the ground as did the imposing monastery of Saint Benedict.⁹⁶ Not until the second half of the nineteenth century did new firefighting technologies and techniques begin to have a real impact.⁹⁷

If there had been no fire, would such a comprehensive rebuilding project have been undertaken? It seems unlikely. "If the city had not suffered the fire," wrote one eyewitness (with some obvious exaggeration), "the ruins would have been quickly repaired."⁹⁸ By destroying such a large portion of the already earthquake-damaged Baixa, the fire allowed Pombal to implement his radical plans with minimal objections. Both the nobility and the church had suffered terrible material losses in the disaster and were consequently weakened both politically and economically. By contrast, Pombal's home in the Bairro Alto (Old Neighborhood) had been spared serious damage. Soon Pombal would move against both the nobility and the church (particularly the Jesuits) in a calculated and brutal campaign to expand his already-considerable power. Hundreds were jailed, sent into exile, or, in some cases, executed.⁹⁹ During the twenty-two years of Pombal's reign, few members of the nobility would build—or rebuild—their palaces in the capital, and those churches that were reconstructed had to conform to the rigid, architectural constraints of the new, unostentatious city blocks.¹⁰⁰

The devastation wrought by the earthquake and fire also enabled Pombal to limit the royal presence in the Baixa. With José I effectively disengaged from the affairs of state, Pombal would choose not to replace the fire-gutted Riverside Palace with a new royal palace (the king and his family would reside for years in a makeshift wooden dwelling several miles away at Belem). Pombal's allegiances lay instead with a rising class of local merchants and manufacturers whom he would attempt to aid through preferential building terms and mercantilist economic reforms.¹⁰¹ To this end, the old royal square along the river, the



Figure 7.4. Lisbon assailed by the earthquake, tsunami, and fire. (Eighteenth-century French engraving by chez Charpentier au Coq. Reproduced from *O terramoto de 1755: Testemunhos britânicos* [*The Lisbon Earthquake of 1755: British Accounts*], ed. Judite Nozes [Lisbon: British Historical Society of Portugal, 1990], 159. Original in the Museu da Cidade de Lisboa, Lisbon.)

Terreiro do Paço, was renamed Commerce Square (Praça do Commercio), and Pombal's vision of a city dominated by an indigenous merchant and tradesman elite took on a distinct, tangible form. Out of catastrophe, the first minister sought to create a new Lisbon: a modern, imperial city that was both a reflection of the brutal will of the Pombaline state as well as the embodiment of his own political and economic goals.

If the Great Fire of Lisbon profoundly altered the history of Portugal and its capital, its impact on European civilization was more indirect. Although most contemporary news reports as well as depictions of the event in woodcuts and engravings contain all three elements of the disaster (fig. 7.4), it was the earthquake and not the fire or tsunami that captured the public's imagination and prompted the famous Enlightenment debate on the question of theodicy.¹⁰² Large urban fires were, after all, far from uncommon and entirely comprehensible occurrences in early modern Europe; and tsunamis were so rare that there was insufficient vocabulary to define them precisely (eyewitnesses speak of the "rising waters" or the "furious waves").¹⁰³

By contrast, earthquakes were one of the last great terrestrial phenomena whose causes were not yet fully understood and thus were widely viewed as

examples of God's direct, awe-inspiring intervention in the natural world.¹⁰⁴ Yet what so shocked Voltaire and his contemporaries was not merely the reality of an earthquake in western Europe but the sheer devastation of what had occurred at Lisbon, the awful realization that thousands of innocent people had perished in a sudden, unforeseen catastrophe. In this, the Great Fire of 1755 played its terrible part:

Falla Deos nos incendios das Cidades,
 Nas irrupçoens do Mar, nas tempestades,
 Na peste, na inclemencia dos Tyrannos, . . .
 Que do castigo está menos remoto,
 Qual presumes que seja?¹⁰⁵

[God speaks in the conflagrations of cities,
 In the sudden incursions of the sea, in storms,
 In plague, in the severity of tyrants, . . .
 Which punishment is less remote,
 Which do you suppose it to be?]

Francisco de Pina e de Mello (1756)

NOTES

1. Letter to Sir Thomas Robinson, Lisbon (November 6, 1755), State Papers (Portugal), SP 89-50, f. 114, Public Record Office, National Archives of the UK, London.
2. Sebastião José de Carvalho e Melo was appointed the Marquês de Pombal in 1770 and is conventionally known by that title.
3. Anonymous, *An Account of the Late Dreadful Earthquake and Fire which destroyed the city of Lisbon*, 2nd ed. (Boston: Green & Russell, 1756), 23. Others drew parallels between the fire-scorched capital and the fate of ancient Troy. See "Portugal affito e conturbado pello terremoto do anno de 1755" (Anonymous, manuscript), chap. 7, 97, FA-63, Arquivo Histórico da Câmara Municipal (hereafter cited as AHCML), Lisbon.
4. *The London Evening-Post*, no. 4384, Dec. 13–16, 1755.
5. Carlos Sousa Oliveira, "Descrição do terramoto de 1755, sua extensão, causas e efeitos: O sismo; O tsunami; O incêndio," in *O grande terramoto de Lisboa: 1755*, vol. 1, *Descrições* (Lisbon: Fundação Luso-Americana, 2005), 38–43.
6. Antonio Ribeiro, "O sismo de 1755 e o geodinâmico da Ibéria e Atlântico," in *O grande terramoto de Lisboa: Ficar diferente*, ed. Helena Carvalhão Buescu and Gonçalo Cordeiro (Lisbon: Gradiva, 2005), 219–33.
7. Judite Nozes, trans. and ed., *O terramoto de 1755: Testemunhos britânicos [The Lisbon Earthquake of 1755: British Accounts]* (Lisbon: British Historical Society of Portugal, 1990), 178.

8. Joaquim José Moreira de Mendonça, *Historia universal dos terremotos* (Lisbon: Antonio Vicente da Silva, 1758), 117; “Portugal aflito e conturbado,” chap. 28, 459–60.
9. Anonymous, *Account of the Late Dreadful Earthquake*, 15.
10. José Augusto França, *Lisboa pombalina e o iluminismo* (Lisbon: Bertrand Editora, 1983), 62.
11. *Gentleman’s Magazine and Historical Chronicle* 83 (February 1813): 108.
12. *Ibid.*, 109.
13. *Ibid.*, 110.
14. Nozes, *O terramoto de 1755*, 150.
15. *Ibid.*, 178.
16. Jácome Ratton, *Recordações de Jácome Ratton*, 4th ed. (Lisbon: Fenda, 2007), 32.
17. *Whitehall Evening Post* (Thursday, December 11, to Saturday, December 13, 1755), no. 1529.
18. Stephen J. Pyne, *Fire: A Brief History* (Seattle: University of Washington Press, 2001), 107–9.
19. Udal ap Rhys, *An account of the most remarkable places and curiosities in Spain and Portugal* (London: J. Osborn, 1749), 237.
20. Nozes, *O terramoto de 1755*, 150.
21. *Ibid.*, 178, 180.
22. Moreira de Mendonça, *Historia universal dos terremotos*, 116.
23. Nozes, *O terramoto de 1755*, 180.
24. Francisco Luiz Pereira de Sousa, *O terremoto do 1 de Novembro de 1755 em Portugal e um estudo demografico*, 4 vols. (Lisbon: Tip. do Comercio, 1919), 3:545.
25. “Portugal aflito e conturbado,” chap. 7, 98.
26. José Monteiro de Carvalho, china ink drawings, Transportes, e Comunicações (Lisbon), D-23-4B, D-23-3B, D-23-2B, Arquivo Histórico do Ministério das Obras Públicas, Lisbon, displayed in the 2008 exhibition “Lisbon 1758: O Plano da Baixa Hoje,” Câmara Municipal, Lisbon.
27. *Providências do Marquês de Pombal: 1755*, vol. 3 (Lisbon: Fundação Luso-Americana, 2005), 151–53.
28. Nozes, *O terramoto de 1755*, 120.
29. *Ibid.*, 64.
30. Arnaldo Pinto Cardoso, “O terramoto de Lisboa (1755): Documentos do Arquivo do Vaticano,” *Revista de História das Ideias* 18 (1996): 499. The letters are in Italian. See also Arnaldo Pinto Cardoso, ed. and trans., *O terrível terramoto da cidade que foi Lisboa: Correspondência do núncio Filippo Acciaiuoli (Archivos Secretos do Vaticano)* (Lisbon: Aethéia, 2005).
31. Lilia Moritz Schwarcz, *A longa viagem da biblioteca dos reis: Do terremoto de Lisboa à independência do Brasil* (São Paulo: Companhia das Letras, 2002), 52–53.
32. Verissimo Antonio Moreira de Mendonça, *Dissertação philosophica sobre o terremoto de Portugal do primeiro de Novembro de 1755* (Lisbon: Domingos Rodrigues, 1756).
33. Immanuel Kant, *Gesammelten Schriften*, 24 vols. (Berlin: W. de Gruyter, 1969–), 1: 417–72.

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45. Cardoso, “O terramoto de Lisboa,” 466.

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A Tale of Two Cities

The Pyro-Seismic Morphology of Nineteenth-Century Manila

GREG BANKOFF

The capital of the Spanish Philippines, colonial Manila, was two cities: a city of stone and wood largely but not exclusively inhabited by Spaniards, and a city of nipa palm and bamboo where the indigenous peoples of the archipelago mainly lived. In fact, this division was never quite as simple as this description may suggest and also changed over time. The population of the inner city gradually altered until indigenous servants and others outnumbered its Hispanic residents. Spaniards, too, and the other Europeans who came to reside in the islands during the nineteenth century increasingly began to abandon its shaded streets and dark grandeur for the lights and entertainments on the right bank of the Pasig River. The city of nipa palm and bamboo was never one city either as there was always a substantial foreign presence, the Japanese, who had mainly been absorbed into the general population by the end of the seventeenth century, and the Chinese, who even created their own culturally distinct enclave, the *Parián*.

These two cities within a city represented not only the socioeconomic and ethnic realities of colonial life in the Philippines but also a particular cultural adaptation to the twin hazards of earthquake and fire that came to dominate notions of urban planning in the archipelago. The stone and wood city represented an

approach that attempted to manage hazard through legislating an appropriate architecture to accommodate these twin dangers, to express mastery through suitable construction techniques and materials. The nipa palm and bamboo city embodied an altogether different solution, constructing light, flexible structures whose periodic loss was allowed for and accepted. If the first represented a form of adaptive technology, the second was also a technological solution, a disposable one, evolved under conditions where the collapse of buildings was rarely fatal and fire was never a major threat until the scale of urban living made it so. Since Manila's foundation in 1571, these two cities had coevolved together. By the nineteenth century, however, conditions had altered. The steep rise in Manila's population together with the blurring of boundaries between the two sectors prompted a renewed attempt by colonial administrators to manage hazard through further architectural adaptation and stricter control over the denizens of the ephemeral city. While earthquake continued to remain a challenge to both, fire acted as a catalyst of social as well as physical change. As fire came to challenge the authority of the state and threaten the wealth of its most prominent residents, its management increasingly became a domain of colonial and even class contestation.

A Tale of Two Cities

By the time Spaniards established Manila, they were undoubtedly the world's most proficient builders of new urban settlements along a classical Greco-Roman model.¹ The latter envisaged a gridiron of straight streets intersecting one another at right angles and centered around a large central plaza where the principal governmental and religious buildings were located.² In effect, though, the city that flourished on the banks of the Pasig River was two cities: a *ciudad* supposedly reserved for Spanish residents known appropriately as Intramuros (literally "within the walls"), and a number of indigenous communities (*arrabales*) located on the fringes of the urban area and including the Parián known as Extramuros (literally "without the walls"). Despite this social zoning, the gridiron pattern was strictly adhered to wherever practical in the Spanish city and the Chinese quarter though less rigorously enforced among indigenous districts.³

Manila grew rapidly from an indigenous settlement of perhaps two thousand people to become a cosmopolitan and multiethnic colonial capital of over forty thousand by the 1620s.⁴ Its prosperity was predicated on the city's role as an entrepôt where the fine fabrics and crafts of China were exchanged for the silver of the New World.⁵ While the city was conceived and laid out according to

cultural prescriptions that originated in another world and another time, how and with what materials it was built spoke to another set of dictates that were rooted in more local factors. The Manila that elicited fulsome praise from resident and visitor alike was a city of stone, at least, that is, within the walls, but the one that was founded in 1571 was built of wood.⁶ Timber, bamboo, and nipa palm were the primary construction materials prior to the conquest, and Spaniards continued to use the same materials, adapting them to conform to the architectural forms of even churches and public buildings.⁷ Such dwellings were also better suited to the climate.⁸

Residents' health was an important consideration in a tropical climate, but unfortunately the materials from which these buildings were constructed also made them highly flammable. There are numerous reports attesting to the frequency of fires in early Manila.⁹ The compact nature of Spanish urbanism with its intention to concentrate populations around the *plaza mayor* inadvertently created a major fire hazard, especially during the dry season.¹⁰ Already by 1588, fires had menaced Manila three or four times, the conflagration of 1583 virtually razing the whole city to the ground.¹¹

Fire was such a hazard that Governor-General Santiago de Vera ordered that all further houses be built of stone in 1587, and that roof tile and brick replace the use of nipa palm and bamboo. Thus was the characteristic *bahay na bato* (literally "house of stone") born, and the city began to alter from one built primarily of wood to one constructed mainly from stone. Of course, the process was halting, continually impeded by the ravages of further fires, most notably one in 1603.¹² However, by 1609, the six hundred dwellings that comprised Intramuros were "mostly of stone," a remarkable transformation.¹³ Fire was principally responsible for transforming the Spanish city from a wooden outpost to a stone metropolis. For four more decades, the stone city prospered, and its inhabitants grew rich and its buildings more ornate without a further major conflagration.¹⁴ That is until eight o'clock on November 30, 1645, when an earthquake of magnitude 7.9 (modified Mercalli scale) struck central Luzon.¹⁵

More than three thousand earthquakes have been documented in the Philippines between the fifteenth and nineteenth centuries.¹⁶ Spaniards, therefore, were not unaware of such seismic activity but, as an eyewitness explained, they simply did not have "any pressing fear of the earthquakes—which, although they usually occur[red] here every year, ha[d] not caused destruction."¹⁷ The main event and aftershocks destroyed 150 of the "finest buildings" and caused most of the remaining houses to be subsequently demolished. Two further major earthquakes rocked the capital in the ensuing decades.¹⁸ Earthquake proved as devastating to the stone city as fire had to its wooden precursor. Spaniards

purposely began to construct their houses of stone and tile “to provide themselves against these disasters from fire,” transforming the built environment in the process but rendering the city and its inhabitants more vulnerable to earthquake. Joseph Fayol sadly concluded: “The result has proven that the inhabitants of Manila, while avoiding in their buildings the activity of fire, fell into the terrible power of the earth.”¹⁹

Manila rose again from the devastation of 1645, and although the city was rebuilt in stone, a subtle change occurred in both its outward form and its internal substance. Subsequent colonial architecture sacrificed much grace of line for more appropriate form and load bearing. The extensive use of massive buttresses, low body structures, and squat bell towers characteristic of remaining examples of colonial buildings, especially churches, testifies to a heightened awareness of seismicity.²⁰ Rather suggestively, this style became known as “earthquake baroque.”²¹ Domestic architecture, too, underwent a similar radical transformation. Roof beams were now supported by trusses and rested on struts planted deep in the ground to provide more flexibility. The number of stories was reduced to two with the upper one constructed from lighter materials such as wood and latticework.²² According to the Augustinian friar Casimiro Díaz, these measures were credited with the little loss of life experienced during the subsequent 1677 earthquake. The situation was “greatly improved over former times,” he observed so that “although the earthquake demolished many buildings, breaking open the solid mass of masonry, they did not suffer entire ruin by being thrown down to the ground.”²³

Matters, however, were very different in Manila’s other city. The indigenous house, the *bahay-kubo*, was primarily constructed of bamboo (*Bambusa blumeana* Schultes. f.), roofed with nipa palm (*Nipa fruticans* Wurmbr.), lashed together with rattan (*Calamus maximus* Blanco), and raised on hardwood poles known as *haligues*.²⁴ Molave (*Vitex parviflora*) was preferred for the latter as it was particularly resistant to attack by white ants.²⁵ Fire was a constant menace in such surroundings. The proximity of such highly flammable structures created an urban fire regime that Steven Pyne argues resembles rebuilt “wildlands.”²⁶ The indigenous *arabales* of Extramuros were much more in the nature of the Asian cities described by Lionel Frost, where people responded to the constant threat of fire by building houses cheaply and furnishing them sparsely. They even had the added advantage of better resisting earthquakes.²⁷ Also part of this outer city was the much smaller commercial and retail district where most Chinese lived. While its layout more closely conformed to the gridiron pattern of Intramuros, it was largely constructed from combustible materials and so very much part of the flammable city beyond the walls.

Fire and the Nineteenth-Century City

Fire and earthquake remained constant features of living in Manila throughout the seventeenth and eighteenth centuries. Yet both cities and their inhabitants achieved a certain balance or equilibrium with their environment. Over time, Spaniards adapted their technology to new conditions, developing an architecture that fused the use of less flammable materials with the plasticity of native structures. The “other” city took a very different course, accepting the recurrent loss of bamboo and nipa palm homes that were easily rebuilt and that periodically required renewing to maintain water resistance and to consume vermin.²⁸

The phenomenal growth of Manila in the nineteenth century changed all this, tipping the balance once more in favor of greater combustibility. The city’s population more than tripled, rising from 93,000 in 1814 to 340,000 inhabitants by 1896.²⁹ As the Philippines opened up to the world, people were drawn to its capital, foreigners to do business and migrants from around the archipelago by the promise of a better life. The strict division between the cities within and without the walls had already shown signs of wear during the eighteenth century. Now the limits of Intramuros were reached as the demand for stone houses burst its confines and flowed across the river to the new retail centers of Binondo and Santa Cruz. But the other city expanded even faster, transforming what had been recurrent fires into frequent conflagrations that consumed whole suburbs. Historians have noted how old and new cities are more vulnerable to fire: Manila was both, an old core and a new periphery.³⁰ And the city burned anew.

Fires, an official report concluded, were “inevitable in all countries and frequent, unfortunately, in the Philippines.”³¹ The expanding suburbs beyond the city’s walls caught alight with monotonous regularity by midcentury. There were devastating conflagrations in Santa Cruz (1847, 1865), Tondo (1854, 1865), San Nicolás (1863), Trozo (1863, 1865), Ermita (1865), Meysic (1866), and San Miguel (1869).³² A great fire swept through Tondo, Trozo, and Binondo in April 1893 destroying more than four thousand houses and causing the death of five people.³³ One of the colony’s newspapers bemoaned how “not a day passe[d] without, unfortunately, a report of fires.”³⁴

The nature of a bamboo and nipa palm house meant that a blaze once lit was rarely extinguishable before it and the neighboring dwellings had been consumed. Fires were endemic in such circumstances. Sparks might equally kindle the dry thatch over a single dwelling’s kitchen hearth in Calapan in 1881 as destroy an entire barrack of the Guardia Civil in Bontoc in 1883.³⁵ The blaze that caused considerable damage to the town of Batac in Ilocos Norte on January

3, 1862, also began in a kitchen.³⁶ The fire that swept through the marketplace of Laoag on April 27, 1864, was blamed on itinerant merchants cooking their midday meal.³⁷ A naked flame always posed a risk, and great care had to be taken to secure the night light. Mosquito nets posed a special hazard.³⁸ Candles were placed in specially secured glass vases to reduce the likelihood of being accidentally knocked or blown over.

Fires usually destroyed more structures than the one in which they started. A primary factor determining the extent of the damage was the direction and strength of the wind. The Philippines are under the influence of the northeast trade winds for the greatest part of the year. The area around Manila, however, is somewhat anomalous with southwest winds prevailing for six months and the northeast blowing only from February to April.³⁹ Strong winds were blamed for a fire's rapid spread. The blaze that destroyed Sy-Amco's shop in Mambajao, capital of Camiguin Island, on October 10, 1868, spread to thirteen other buildings when a south wind rose.⁴⁰ The kitchen conflagration that reduced Calapan to "absolute ruin" in 1881 spread rapidly because of the strong wind.⁴¹ The fire in a house on Calle Magdalena in Trozo on March 6, 1897, spread to seventy-three others "despite all best efforts" due to "the force of the wind at the time."⁴² And the "voracious fire" that burned down Tondo and parts of Binondo in 1893 was fanned by the wind.⁴³ Shops were particularly vulnerable depending on their wares.⁴⁴

Contrary to the accepted wisdom, many fires in the Philippines seem to have started at night.⁴⁵ Only in one instance was the "heat of the day" identified as a contributing factor.⁴⁶ In terms of the seasons, a disproportionate number of fires started in April at the end of the long dry period in central Luzon. Houses were tinder-dry and so highly combustible. The main reason given for the rapid spread of fires, however, was "the density of the housing that contrary to the Laws of the Indies [were] built one next to another."⁴⁷ Such conflagrations are inevitable, a memorial on urban management concluded, "when buildings are so easily flammable, as [was] the case in Manila, and above all when the material from which the houses are built is so combustible and so rapidly spreads fire."⁴⁸

But the composition of the city beyond the walls was changing: starting in the late eighteenth century, an increasing number of stone houses came to be built among the nipa palm ones on the right bank of the Pasig opposite Intramuros. As the Philippines opened its markets to international trade, this shift became more marked. The suburbs of Binondo and Santa Cruz emerged as the archipelago's new commercial, wholesale, and retail center.⁴⁹ By the century's end, most of the shops in these districts were owned and run by Chinese,

though their numbers and distribution precluded them from constituting a distinct ethnic enclave.⁵⁰ They never came to represent yet a third city within Manila.

Nothing provided a more striking contrast to the isolation of the walled city than the frenzied bustle of commerce and sounds of gaiety from across the river. Here it was that the merchandise brought by sailing ships was stored in numerous bodegas and warehouses. Binondo became the capital's main retail and entertainment center, its principal streets, especially La Escolta, lined with shops selling the wares of three continents.⁵¹ Here, too, was to be found Manila's main red-light district with its women plying their trade and its nightly revelers.⁵² All this bustle and activity, all this expansion and construction made for a very volatile environment. The fires that swept through the ephemeral city like wind through the grass now threatened to consume much more substantial dwellings that could not so easily be replaced and ones, moreover, that were filled with costly and highly flammable materials. The inevitable happened on March 23, 1870, when a fire broke out in the Pasaje de Norzagaray, a shopping arcade in the heart of the new retail sector. It was the dry season, and the flames spread rapidly. "Within a few short hours and in the midst of the most desperate consternation," reported the *Gaceta de Manila*, property and merchandize "amounting to the enormous sum of a million pesos" were reduced to ashes, and the fire "threatened to destroy all or the greater part of the richest and most populated districts of Manila."⁵³ The urban fire regime that had largely exempted Intramuros from the conflagrations that raged beyond its walls was upset by the construction of stone houses among "those made from materials that burst into flames in a moment and that spread so quickly as to render ineffective all efforts to extinguish them."⁵⁴ The 1870 fire proved to be a landmark spurring colonial officials to action. Within the week, a gubernatorial commission was established to investigate fire management in the city. The extent of the devastation convinced authorities that the expense of taking preventative measures was never "so costly or so great as the annual amount of wealth consumed by fires that unfortunately [took] place in Manila and its suburbs."⁵⁵

Fire, of course, was no stranger to the city within the walls. Stone houses were in reality made from as much wood as they were from less combustible materials. Stone houses burned, too. But earthquake still remained the greater threat to Intramuros. The masonry arches, vaults, and columns that graced many of its foremost buildings cracked or failed during the frequent seismic shocks that occurred during the first half of the century.⁵⁶ Already-weakened buildings offered little resistance to the magnitude 6.5 earthquake that struck the capital on June 3, 1863, and that in just a few moments "converted the opulent

city of Manila into a piteous sepulchre.”⁵⁷ Needless to say, damage was not confined to the stone city alone, and beyond the walls churches, public buildings, and the markets of Quinta and Divisoria lay in ruins. But inside Intramuros the desolation was complete. The roof of the cathedral gave way and its tower fell on nearby houses. All the principal edifices with the exception of San Agustín were either ruined or left in a perilous state. More than three hundred people lost their lives.⁵⁸ Seventeen years later, in July 1880, a series of earthquakes peaking at a magnitude 7.5 devastated the city once more.⁵⁹

Fire Management as a Contested Domain

Destruction on the scale wrought by the fire of 1870 and the earthquakes of 1863 and 1880 forced colonial authorities to reevaluate existing emergency management procedures and consider once again how buildings were constructed. They were confronted by the fact that Manila, both the city within and particularly the city without the walls, was a changed urban environment. The factors that had transformed Intramuros from a wooden to a stone city had not primarily been cultural, elements associated with notions of progress or grandeur, but had rather been environmental, those determined by the risks of living in a seismically active and typhoon-prone location. Extramuros was no longer an overlarge indigenous village but was increasingly a colonial metropolis linked to the world market. Nipa palm huts stood side by side with the retail outlets of a modern city and the warehouses of foreign merchants. Finding a new balance was not an easy matter. The process of adjustment uncovered fault lines that ripped through the social fabric in much the same way as the physical ones that ran beneath the ground the city was built on. While everyone saw fire and quake as a threat, not everyone held the same view on how best to manage it. The population of Manila was split largely along ethnic and increasingly class lines that reflected the realities of late colonial society.

Fire Management

From the authorities' point of view, the primary objective was the preservation of “property,” that is, state and ecclesiastical buildings and private dwellings of substance. As far as possible, this was achieved by segregating nipa palm houses from ones made of stone. Municipal authority for the whole of Manila lay with the *ayuntamiento* (city council), which legally distinguished between *casas de materiales fuertes* (stone, wood, and tile) and *casas de materiales ligeros* (bamboo and

nipa palm).⁶⁰ An unofficial distinction had long been achieved by the prohibition on construction in anything but stone and tile within Intramuros. Outside the walls, however, was another matter. The priority here was to ensure that the all-too-frequent flames did not engulf public and ecclesiastical buildings. The spread of stone houses across the river complicated matters, necessitating a gradual extension of zoning regulations to the right bank of the Pasig and the creation of firebreaks.⁶¹

As bamboo and nipa palm structures once alight were rarely savable, the principal means of tackling a fire in the outer city was to remove surrounding thatched roofs and then to simply pull down all structures in the fire's path to create firebreaks.⁶² Communities had to organize their own firefighting service and often lacked the most basic tools necessary for even limited operations, implements like curved hooks, axes, bolos, and handsaws.⁶³ Otherwise responsibility rested with the municipal authorities, who were empowered to mobilize local residents, but many proved reluctant to fight fires. Prisoners, on the other hand, had no choice but constituted a serious surveillance problem.⁶⁴ Instead, reliance was placed on local police forces and any army and naval units stationed nearby that were equipped with pumps.⁶⁵ A detailed account of a fire in Zamboanga on December 8, 1879, gives some idea of the difficulties. Around 6:30 p.m., a blaze was noticed in a central section of the town, but by then surrounding buildings were already burning fiercely and the flames proved impossible to contain. By 8:00 p.m., the fire was advancing rapidly on two fronts, its course determined by the narrow space between buildings where roofs were less than one meter apart. Authorities frantically tore down bamboo and nipa palm houses in its path in an attempt to save some of the town's principal public buildings. But it was not till midnight that the fire was brought under control, checked by a large drainage ditch, and not until the following morning that it burned itself out. Even then embers reignited a shop the next morning, though the flames were quickly extinguished.⁶⁶

Even prior to the Pasaje de Norzagaray fire, there had been discussions about the need to plan how best to manage fires in Manila. After the devastating 1863 earthquake, a military committee was established to advise on a general system of construction for buildings that would "harmonize with the conditions of the country."⁶⁷ Though preoccupied with Intramuros, many of the committee's recommendations governing building regulations and the widening of roads also had implications for the city beyond the walls.⁶⁸ The subsequent regulations of May 10, 1865, divided Extramuros into zones separating *casas de materiales fuertes* from *casas de materiales ligeros*. Implementation, however, proved more difficult.⁶⁹ That same year, a proposal was made to create dedicated



Figure 8.1. *Bomberos*, or Manila fire brigade, 1899. (Photo by J. D. Cress. Reproduced from Library of Congress Philippines Image Collection, lot 3389.)

firefighting forces equipped with modern pumps, extendable hoses, and water wagons. In fact, a professional firefighting capability already existed in Manila, organized and paid for by seven of the largest commercial firms to protect their warehouses along the Pasig. As long as their own properties were not at risk, these men and pumps were “generously” made available to the city authorities.⁷⁰

The need for a fire brigade was taken up again with rather more urgency after 1870. Instead of proposing the creation of a separate force, the new investigatory commission recommended that such activities be assumed by an expanded municipal police force, the *Tercio Civil*.⁷¹ As the cost of the force was to be borne equally by the capital’s municipal council (*ayuntamiento*) and the surrounding province, services were to be extended to nearby towns as well. The city was divided into five zones, each with its own barracks, and placed under the overall responsibility of the municipal architect.⁷² Discussions continued over the composition of the force and the nature of its duties. Concern was expressed that members of the force might be too often left idle at government expense, so they were also made responsible for maintaining the city’s streets and thoroughfares.⁷³ Such cost-saving measures were needed as colonial authorities found it increasingly difficult to fund their municipal obligations.

A still more radical step was taken around 1882 with the decision to create a special force of hydraulic engineers, the *Fontaneros de Carriedo*, charged

with running the newly inaugurated waterworks. This impressive feat of engineering first pumped water from the Marikina River into a reservoir at San Juan de Monte, around twenty meters above sea level, before feeding it to the city's public fountains and private residences.⁷⁴ The firefighting implications of the grid were not lost on the authorities. Plans were laid for extending the existing system of nearly twenty-nine kilometers of cane pipes by the erection of 278 fire hydrants to which pressure hoses could be attached. In the main commercial and retail sectors of the city like Escolta, new hydrants were to be interspersed with existing fountains so that no site was further than fifty meters from one. The service was to be paid for by a levy of one centavo on every pound of meat dressed in the city's abattoirs. A specialist force of fifty-four hydraulic engineers, guards, and assistants were charged with ensuring an adequate supply of water for both drinking and fighting fires, their salaries met from the rates charged domestic consumers. Eight units were subsequently created in 1885 to cover the whole of Manila.⁷⁵ In the previous year, too, three new brigades of regular firefighters had been formed for the expanding districts of Ermita, Malate, and San Fernando de Dilao "so much punished by fires."⁷⁶ Such services were a belated recognition that Extramuros was no longer simply the ephemeral city of expendable bamboo and nipa palm structures that it once had been.

Contested Fires

Just as there were two cities, the one within and the one without the walls, so there were two perspectives on how to manage fires, a Spanish one and a native one. And just as the geographical boundaries between the two cities became less distinct during the nineteenth century, so, too, did perceptual differences blur as class began to replace ethnicity as the defining factor. The previous practice of saving one type of structure from burning while consigning the other to the flames was no longer tenable under these changed circumstances, and fire management progressively became an area of contestation between colonizer and colonized, rich and poor.

Spaniards pursued a policy of fire management that involved constructing buildings from fire-retardant materials and then isolating them from the highly flammable dwellings of indigenous peoples. Colonial architecture reflected this practice, but its realization was always tempered by the danger of masonry in a seismically active area. The gradual reintroduction of wood remains a feature of architectural adaptation during the eighteenth and early nineteenth centuries.⁷⁷ The great earthquakes that shook Manila in 1863 and 1880 only accelerated this trend. The ensuing building ordinances stipulated thinner, multijointed, masonry ground-floor walls, lighter upper stories partitioned by bamboo slats,

a greater use of trusses, and the replacement of curved tiles on roofs with flat tiles or galvanized iron.⁷⁸ The analogy was with shipbuilding. “If ships can resist the motion which the sea communicates to them in every direction,” wrote Lieutenant Colonel Manuel Cortés in his treatise on earthquakes, “it is because they are built of light materials possessing sufficient resistance.”⁷⁹ As houses built from *materiales fuertes* became commonplace outside Intramuros, zoning regulations were introduced to keep them apart from those that were considered expendable, and a professional fire service was established to safeguard these districts.⁸⁰

In Spanish eyes it was only the owners of property, those who lived in stone houses, engaged in trade, or ran businesses, who were at risk from “the voracity of the flames.”⁸¹ Others had only their lives to lose, and fires were not usually great takers of life. But when it came to property, fires were costly affairs. So many goods were made from costly and perishable materials, in fact, that “a great part of the produce and the riches of this country [were] gravely affected as a consequence of fire.” Of course, the climate was considered partly to blame, “the intense heat in certain months,” but the root cause of all this wrack and ruin was the ubiquitous nipa palm and bamboo house.⁸² “The almost constant causes of fire in the Philippines,” concluded the report on the 1870 Pasaje de Norzagaray fire, “and the colossal proportions that they can reach in only a few moments are due to the shortcomings of the nipa huts.”⁸³ They were, however, “an unavoidable necessity,” and any attempt to prevent their erection was “vain.” Nor was “applying water to nipa huts in a fire” of any avail, and pumps were of “very little or almost no use.”⁸⁴ In other words, in Spanish eyes the services of a professional fire brigade were not required, and the purpose of fire management was directed toward isolating nipa palm and bamboo huts from “property.”⁸⁵ Otherwise, the principal preoccupation of authorities with regard to the nipa palm city was the preservation of government documents and municipal funds.⁸⁶

Less evidence survives on how fires were regarded and managed among the inhabitants of Extramuros, and it is only by reading between the lines of official reports that the existence of an alternate perception emerges. Perhaps, as Lionel Frost suggests, there was an acceptance that the price of urban living was the periodic loss of one’s home.⁸⁷ In such a scenario, people’s priorities were not so much about saving a building’s expendable infrastructure as about removing their portable property from it. There were certainly advantages to limiting the spread of fires whenever possible but little incentive to do so at the expense of possible injury to oneself or loss of one’s personal belongings. Spanish accounts are peppered with reports of the strange reluctance of local people to become involved in putting out fires “despite the grave consequences to

commerce and property.”⁸⁸ A description of one fire notes how cooperation had to be secured by troops.⁸⁹ Another report criticizes “the proverbial apathy and ignorance of residents” and how they failed to follow directions.⁹⁰ Still another description compares the actions of Spanish residents in fighting fires to those of indigenous people, who seemed “occupied only with saving their own personal effects.”⁹¹

Is this silent testimony to a conflict over fire management as the two cities inexorably merged and became one? The potential for conflict between these approaches had lain dormant as long as there was a strict division between the city within and the city without the walls. However, as the *casas de materiales fuertes* spread among those of *materiales ligeros*, they produced social as well as physical sparks. The latent tensions between colonizer and colonized fused with those between rich and poor as stone structures ceased to be the sole preserve of only Spaniards and became the homes and businesses of Chinese, mestizos (mixed ethnicity), and the indigenous elite.

Sometimes these tensions surfaced regarding not only how to fight fires but also what caused them. Arson was a constant source of official anxiety.⁹² A report of 1792 noted how not all fires were “accidental” and blamed a recent spate of them in the capital on “the inhuman hands of the many vagabonds, idlers, and bad-intentioned people as [were] contained in this city.”⁹³ It is difficult to gauge, though, as wealth became more visible and firefighting measures (especially zoning) more intrusive, whether arson also expressed underlying social tensions between people with and without property. Certainly, the newspapers claimed that fires were deliberately lit, citing the lighted taper thrust between the venetian blinds as the householder sat down to dinner or the petroleum-soaked wick found on the roof of a house.⁹⁴ Sometimes, it seems, fires were lit to effect even more sinister motives, for example, setting a house alight intentionally so that its Chinese occupants “in the moment of the catastrophe were eliminated.”⁹⁵ People with property were understandably edgy, and one newspaper column even suggested “a house-by-house search” for suspicious characters.⁹⁶ Fire was not simply a threat to property; in some hands, it was evidently also a weapon.

The Pyro-Seismic Morphology of Nineteenth-Century Manila

Nineteenth-century Manila was a fast expanding city where the built environment was undergoing rapid change. The administrative and ecclesiastical hub of this urban area remained Intramuros, but a new city was emerging across

the river, one of shops, hotels, theaters, warehouses, and stone houses. Lionel Frost and Eric Jones propose a model explaining the divergence between the rising number of houses and the falling number of major conflagrations in western cities from the mid-nineteenth century. They credit this “fire gap” to the use of less-flammable building materials and the larger size of house plots.⁹⁷ Frost and Jones are primarily interested in European, North American, and Australasian cities that they contrast to either premodern Asian and Islamic ones or urban areas in the Third World today. But there is a third type of city that they overlook: the European city in Asia, Africa, or Latin America, cities like Singapore, Dakar, and Mexico City.

The European metropolis outside Europe and the Neo-Europes was a city with a dual nature, being part foreign and part local.⁹⁸ As such it was more like a twin city, a European core around which spread a much larger indigenous periphery. The European city was an implant that gradually adapted to its new environment without ever losing contact with its cultural origins. The indigenous city was better suited to local conditions, but its form and organization were governed by alien notions of urbanization. Both were vulnerable in their own ways to climatic and seismic forces, and both sought solutions to the ever-present threat of fire. But outside Europe (and even within it), fire can seldom be considered in isolation from other hazards. The cities and towns established by Europeans in both the New and the Old World reflected an ongoing adaptive process to the composite nature of risk in these novel surroundings. Architecture, the form and material from which structures were built, and planning, the layout and zoning of these urban areas, constituted an arena in which alien notions about space and place were reconciled to local environmental realities. As John Holland notes, “a city is a pattern over time” in which innumerable actors and agents interact in a multitude of diverse ways to adapt to circumstances.⁹⁹ Fire was only one of these.

The rapid urbanization of Manila in the late nineteenth century upset whatever precarious balance had existed between these two cities. The European core expanded by encroaching into the indigenous periphery, claiming large areas for commercial, retail, residential, and recreational purposes. Attempts to exclude local inhabitants from these areas were rarely achievable, and these new districts were characterized by modern and traditional structures standing side by side, constituting a physical as well as a social tinderbox. At the same time, the new dynamism of the city attracted migrants from all over the colony, fostering the rapid expansion of outlying suburbs and so compounding the threat of massive conflagrations. The “fire gap” that had long prevailed in the inner city was simply overwhelmed by the expansion of the outer one, threatening both with renewed destruction.

Manila is representative of the most common model of European city outside of Europe and the Neo-Europes, the Iberian.¹⁰⁰ Almost all cities and towns in Latin America as well as many in Asia and some in Africa are the fusion of Spanish and Portuguese with indigenous cultural forms. Like these other cities, Manila was partly a city built of stone and partly a city constructed from much more flammable materials: one burned only rarely and the other with frequency. Over time, an urban morphology evolved that reflected this dual nature. But fire was not the only agent shaping the city's architecture and planning; earthquake, too, exerted considerable influence. Intramuros was a product of them both. The new city that emerged on the right bank of the Pasig during the nineteenth century was highly combustible and one progressively shaped by fire. The architecture of stone houses may still have borne the imprint of the revised building regulations passed in the aftermath of the 1863 and 1880 earthquakes, but its spatial organization and zoning increasingly reflected the ascendancy of fire. Once more, the ability to check its progress and extinguish its flames became a matter of urgency as it had not been since the wooden days of the late sixteenth century.

Colonial Manila shows how fire not only constituted a risk to body and property but was also a catalyst of change that shaped the urban environment. Its history reminds us never to consider fire in isolation from either its social or its physical context. As the nature of Manileño society changed over the centuries, so did the urban fire regime—expanding and contracting, checked here for a while and there running riot. But fire often has accomplices and rivals for its attentions. Rain, wind, and sun could dampen its desire or enflame its appetite, and earthquake might as easily precipitate a conflagration as compete with it in modifying the built environment. Nineteenth-century Manila was very much a city born from these pyro-seismic influences, and its morphology represented a fascinating interplay between culture, architecture, and a combination of hazards over time.

NOTES

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8. Juan de Medina, "History of the Augustinian Order in the Filipinas Islands, 1630," in *PI*, 23:242.
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14. Joseph Fayol, "Affairs in Filipinas, 1644–1647," in *PI*, 35:217.
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16. *Ibid.*, 137.
17. Fayol, "Affairs in Filipinas," 217.
18. The quake in 1658 measured 5.7, the one in 1677 7.3. Bautista and Oike, "Estimation," 152.
19. Fayol, "Affairs in Filipinas," 217–18.
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Fire and Urban Morphogenesis

Patterns of Destruction and Reconstruction in Nineteenth-Century Montreal

JASON GILLILAND

In the nineteenth century, most residents of North American cities lived with the constant threat of fire. Rapid industrialization and urbanization, associated with high densities, cheap construction, hazardous mixing of land uses, inadequate means of fire protection, and postponed investment in social overhead, fostered situations in which minor blazes could turn into massive disasters. Major fires were explosions of the pressure cooker of untamed urban growth. In the capitalist city, rapid growth meant rapid obsolescence, the constant need for renewal, and hence, changes in urban form, or *morphogenesis*. Although the built fabric of a city is naturally long lasting and resistant to change, the intervention of a single stray spark, under certain conditions, can greatly accelerate the process of urban morphogenesis. Fire consumed vast sections of Quebec City in 1845 and 1866, Saint John's, Newfoundland in 1846 and 1892, Chicago in 1871, Boston in 1872, Saint John, New Brunswick, in 1877, and Baltimore in 1904, in each case destroying more than one thousand buildings, enough to alter permanently the face of the city. This essay examines the impact of fire on the built form of nineteenth-century Montreal.

My study begins with the summers of 1850 and 1852, when Montreal suffered four separate conflagrations that, in total, destroyed about 1,500 dwellings, or

nearly one-fifth of the city's housing stock, and rendered homeless approximately twelve thousand people, almost one-quarter of the population. My purpose is not to recount the spectacular details, which can be found in popular histories, but to consider fire as an agent of urban morphological change.¹ Drawing from two well-established analytic traditions—theories of land rent and building cycles—the analyses presented in this essay contribute to our understanding of the historical processes of urban growth. Given the enormous extent of the fires, we are afforded the opportunity to compare and contrast the rebuilding process in environments with different land uses, at different distances from the city center, and owned and occupied by different social classes. Montreal never again suffered conflagrations that were as destructive as those in the 1850s, but over the next half century, lesser-scale blazes continued to break out every year, consuming smaller numbers of properties. For the period 1872–89, by examining a stratified sample of properties destroyed by fires in boom or bust phases of the construction cycle, we can gain insights into how the rebuilding process varied according to the timing of destruction.

Of the case studies of historic conflagrations in several major cities, very few deal explicitly with changes to urban form.² Conversely, few morphological studies consider the impact of fire. In *Montréal en évolution*, for example, the best-known history of the built environment of Montreal, Jean-Claude Marsan overlooks the subject.³ The dearth of research on the relationship between disasters and urban form was the subject of a special issue of *Urban Morphology*. Joseph Nasr introduces the feature with a discussion of the philosophical and methodological difficulties in interpreting “stability” versus “change” within any study of postdisaster rebuilding, while in the concluding article of the issue I argue for a better understanding and treatment of the ways in which “timing” influences the morphology of disaster.⁴

In the current essay, I attempt to deepen our understanding of the impact of fire on urban development by focusing on changes at the block and building level. Fires routinely destroyed large sections of cities, removed the inertia of massive amounts of built capital, and therefore generated opportunities to make improvements to the urban habitat. Christine Rosen's examination of great fires in Baltimore, Boston, and Chicago is an exceptional work that attempts to appraise explicitly the influence of fire on urban growth, but she says little about changes at the level of the building and streetscape, the scale of everyday lived experience.⁵ Nevertheless, Rosen adeptly illustrates how these great fires removed barriers to improving public infrastructure (water supply, sewers, streets, power system), thereby contributing to improved quality of life for urban inhabitants. Perhaps the best treatments of the impact of fire on microscale

morphology are two unpublished graduate theses in geography. In a detailed spatial analysis of single-building fires in London, Ontario (1915–29), Mathew Novak used a geographic information system (GIS) to examine the relative influence of various environmental factors on the likelihood of a building catching fire and the magnitude of destruction.⁶ Novak discovered that building use was a much more significant predictor than construction materials. Brick buildings were more likely to catch fire than wood buildings due to their larger average size, greater intensity of use, and activities they were more likely to contain (i.e., manufacturing, commercial); however, when they did catch fire, wood buildings were much more likely to suffer total destruction. For his dissertation research, Daniel Turbeville used a series of fire insurance plans to show how cities in the US Pacific Northwest changed after conflagrations; the urban cores in particular were reconstructed more solidly, with less-flammable materials over the course of industrialization (1851–1920).⁷

Burned cities were normally rebuilt in haste, usually to the same two-dimensional plan of streets and lots. Nevertheless, the devastation often initiated fire-conscious regulations and innovations that slowly contributed to new and more-durable urban environments.⁸ Lionel Frost and Eric Jones point to the increasing “fire gap” (divergence between size of population and number of major fires) in North American, European, and Australian cities over the nineteenth century.⁹ Because fireproof building materials were expensive compared to wood construction, such regulations made it increasingly difficult for working-class families to afford homeownership, particularly in central districts, where bylaws were more rigorously enforced. Richard Harris argues that tougher building regulations in North American cities contributed to the rapid growth of working-class suburbs beyond city limits, where poor families could erect homes piecemeal beyond the gaze of building inspectors.¹⁰ Bowden has argued that conflagrations do not radically alter the basic pattern of urban growth, but instead accelerate and exaggerate the regular processes already at work.¹¹

As an empirical test, I examine the relationship between dependent variables such as speed of reconstruction and degree of change in the intensity of development, as a function of the market situation (location and timing).¹² From samples of properties before and after fires, I provide insights into the rebuilding process for several segments of society. We shall see that fire generated predictable changes in urban form, changes consistent with the demands of the nineteenth-century urban “growth machine.” Before turning to an analysis of the findings, the following section outlines the logic guiding the study.

Predicting Changes in Urban Form

Expectations are derived from two well-established theoretical bases: land rent theories offer a spatial logic, and economic explanations of the building cycle provide a temporal logic.¹³ The theories of urban structure derived in the 1960s indicate the importance of the land-value gradient to the pattern of land use in the city.¹⁴ Commercial uses usually outbid all other uses in the competition for centrally located sites, and therefore, as we move out of the center, land values drop, reflecting reduced utility and lessened competition, and the bulk and density of built forms diminish.¹⁵ Based on our understanding of such models, we would expect that postfire reconstruction in nineteenth-century Montreal would reflect such a pattern. We might anticipate that burned properties nearest to the center of the city will be rebuilt with larger lumps of capital, larger investments per square foot of land, and taller buildings that produce higher rents. Due to intense competition, the reconstruction process is also likely to be swifter on centrally located sites.

Based on our understanding of the rhythm of accumulation in the built environment, we can make predictions about how the response to fire might vary with the construction cycle.¹⁶ For instance, the conflagrations of 1850 and 1852 occurred during an economic upswing, just as Montreal (and most of the capitalist world) had recovered from the severe economic crisis of the late 1840s. The incentives for a property owner to rebuild are typically stronger during an economic upswing rather than a depression. During a boom period, capitalists must rebuild quickly if they are to take advantage of the momentum and maintain a rapid pace of accumulation and a high level of profit. Due to increased competition for space during growth periods, vacancy rates will decrease, land values and rents will increase, and therefore property owners are likely to rebuild quickly so that they may continue to collect inflated rents and possibly avoid having to pay high rents to accommodate themselves elsewhere. Competition may be further intensified by the shortages caused by a major conflagration. During boom periods, rebuilding is more likely to involve morphological changes such as the intensification of land use, in order to deal with heightened competition and to take advantage of increased values. On the other hand, during an economic slump, property owners are not under as much pressure to rebuild quickly; they may even resist rebuilding until it becomes more profitable; and if they rebuild, they are more likely to duplicate the old forms, relying on insurance payments, since they do not have easy access to additional capital to redevelop at a larger scale, to a higher standard, or with a new technology.

The theory of building cycles also suggests a mismatch. The city is usually ill equipped to handle a massive surge of growth. After each boom, maladjustments emerge, and zones that have experienced the greatest competition and the most aggravating congestion ripen for redevelopment. Congestion takes the form of traffic bottlenecks, choked-up public services (fire and police), and overloaded water and sewer systems.¹⁷ All these forms of congestion render a city vulnerable and reduce the overall rate of capital accumulation. Since built capital is fixed in space, long lived, and difficult to alter, a perennial source of conflict exists between present demands and the legacy of built capital. This tension can be considered a “contradiction” of capitalist development, as it introduces a constraint on profitability and creates a need for a breakthrough, if investors are to maintain or restore their rate of profit and the momentum of accumulation. This happens with every surge of growth and is aggravated by lags in public investments in infrastructure.¹⁸ With respect to rebuilding after major fires in Montreal, we would expect property owners in areas that have experienced the greatest congestion and the greatest increase in competition for space—in the central core, along the waterfront, and along the thoroughfares that connect the newly developed urban fringes—to rebuild fastest and to make the most significant morphological changes to their properties. Conversely, we would expect areas under the least pressure (perhaps in residential areas and “unproductive” social overhead capital like schools) to rebuild more slowly and experience fewer improvements.

Rebuilding in the 1850s: Phoenix from the Ashes?

Let us now look at the evidence, first the case of the conflagrations of 1850–52, then at a sample of punctual late nineteenth-century fires, and create a sampling design that compares the before-and-after streams of rent generated from lots devastated by fire. Montreal ended the first half of the nineteenth century in a state of turmoil that culminated with the torching of the Parliament Building in 1849. Under a severe economic depression, the city was a powder keg waiting to explode. Overspeculation in real estate during the boom of the 1840s left many stores and houses “groan[ing] for tenants.”¹⁹ This all changed in the early 1850s, when four massive fires wiped out one-fifth of the city’s housing stock (fig. 9.1). The first broke out on June 15, 1850, and destroyed 207 houses in Griffintown, a predominantly Irish working-class suburb in the southwest. About two months later (August 23), while most of Griffintown was still in ruins, 150 buildings were consumed in the Saint Lawrence Ward, just beyond

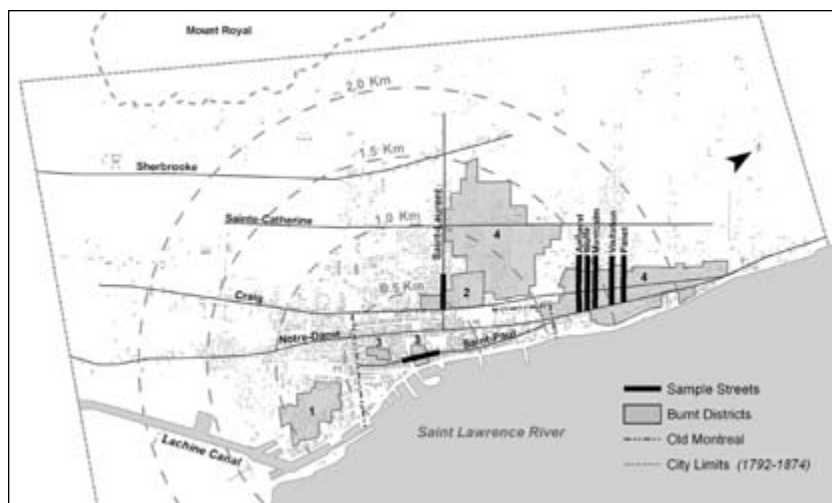


Figure 9.1. Burned districts and sample streets in Montreal, 1850–52. Fires are numbered: (1) June 15, 1850; (2) August 23, 1850; (3) June 6, 1852; (4) July 8–9, 1852. (Data from J. Cane, *Topographical and Pictorial Map of the City of Montreal*, 1846; *Montreal Pilot*, July 26, 1852; Montreal, *Rôle d'évaluation*, 1849–53.)

the old walled city. On June 6, 1852, another fire engulfed many important business houses in the central core of the city, and a month later, a two-day (July 8–9) conflagration—the worst in Montreal’s history—wiped out 1,112 houses in the predominantly French Canadian, working-class wards of the east end (table 9.1). Each episode of destruction highlighted the dangers of wood construction, narrow streets, and an inadequate water supply. These conflagrations not only devastated vast districts, but as we shall see, they also presented opportunities to institute widespread changes to the built form of the city.

The primary source of data for this analysis is Montreal’s unique rental tax rolls (*rôles d'évaluation locative*). Available annually since 1847, they provide the names of each business or household head, the occupation, the assessed value of the building and land, for tenants a rental value, and for owner-occupiers an estimate of market rent based on floor area. The reliability of this source has been confirmed in several studies.²⁰ As a theoretical concept, the “rental values” are meaningful, as they represent the flow of income from capital invested in the built landscape. Where precise data on three-dimensional form is not available, rental values offer a convenient surrogate, as they have been shown to correlate perfectly with floor area, and by allowing a ten-foot height per story, we can estimate the building “envelope” and thus the scale of development.²¹

Table 9.1. Destruction by the conflagration of July 8–9, 1852.

WARD	NUMBER OF HOUSES DESTROYED					RENTAL ASSESSMENT	NUMBER OF SUFFERERS	
	STONE	BRICK	WOOD	S&W	TOTAL		FAMILIES	PEOPLE
Saint Louis	50	46	451	6	553	C\$38,288	959	4,807
East	19	0	0	0	19	6,720	32	129
Saint James	42	45	181	8	276	21,968	403	2,314
Saint Mary	31	53	178	2	264	14,920	343	1,792
Totals	142	144	810	16	1,112	C\$81,896	1,737	9,042

Source: Montreal General Relief Committee, *Proceedings*, 1853.

Notes: Estimates are considered conservative. The number of houses destroyed is exclusive of outbuildings; figures for persons rendered homeless are exclusive of boarders, lodgers, and others not appearing in municipal records. Monetary estimates are given in dollars at the contemporary exchange rate of four dollars to the pound.

The sample database was created by compiling rental values between 1850 and 1861 for all properties fronting seven different streets. I sampled three different areas of the city—the central core of “Old Montreal,” a ring just outside the city center, and an east end suburb—and for each street, paired a section destroyed by fire with an adjoining section that was unaffected (fig. 9.1).²² Before the conflagration, each pair of segments showed the same morphological and socioeconomic characteristics. By tracing rental values after the conflagration, we can observe the tempo of redevelopment, and by comparing the burned and nonburned segments, we can measure the scale and intensity of redevelopment of built capital.²³ We can think of the burned segments as cases of accelerated renewal, and the nonburned segments as undergoing a more “normal” or “organic” form of renewal.

The central core street under examination is Saint Paul, in the heart of Old Montreal.²⁴ Saint Paul is one of the oldest streets in the city (opened in 1673), and the earliest maps show that it was already a crowded street—the most densely built in the town—in the eighteenth century. By the 1850s, it had become almost entirely commercial, densely packed with two-and-a-half- and three-and-a-half-story, peaked roofed, stone warehouses occupied by wholesale merchants who sought close proximity to markets and the wharves. The mean annual rent per building was about C\$650 immediately before the conflagration. While development in the two segments was comparable before the fire, by 1861 the mean rent of buildings in the segment that had burned was much greater (C\$1,123), almost 40 percent higher than in the nonburned segment (table 9.2).

Table 9.2. Redevelopment of sample street segments, 1850–61.

SAMPLE AREA	DISTANCE FROM CENTER (KM)	SEGMENT STATUS	MEAN RENT PER BUILDING (C\$)			SAMPLE SIZE (N)
			BEFORE FIRE (1850–52)	AFTER FIRE (1861)	INCREASE (%)	
Saint Paul	0	burned	688	1,123	63	19
		nonburned	636	791	24	30
Saint Lawrence	1	burned	148	683	361	9
		nonburned	151	406	169	7
Saint James ward	3	burned	74	97	31	63
		nonburned	73	158	116	38

Source: Montreal, *Rôle d'évaluation*, 1850–61.

Note: "Ward" represents Amherst, Wolfe, Montcalm, Visitation, and Panet Streets.

In other words, the burned segment was rebuilt at a greater scale and a higher intensity of land use. Evidence to support this inference is provided by a contemporary observer who witnessed the rebuilding activity on Saint Paul Street about five months after the fire: "All of these are first-class buildings with cut-stone fronts. . . . Two-thirds of the buildings destroyed . . . will be rebuilt in a better style than before, and re-occupied ere the spring vessels arrive. The other lots are, we understand, in the market for sale, and there can hardly be any more valuable property in the city."²⁵ D. B. Viger's warehouse at the corner of Saint Paul and Customs House Square is a typical case of rebuilding. Whereas the burned structure was two stories, its replacement was a full story higher and garnered 52 percent more rent than its predecessor (C\$1,280 vs. C\$840).

Contemporary accounts suggest that Saint Paul was rebuilt quickly, and this is also shown in the tax records. In the spring of 1853, less than twelve months after the fire, there were just two vacant lots remaining out of twenty that burned; these two properties had changed hands and would be built upon by the following spring (1854).

Moving just outside the central core, to a section of Saint Lawrence Street (known as "the Main") destroyed in August 1850, we see an even more dramatic example of rebuilding.²⁶ This street was opened in the early eighteenth century (1720) but was dotted with just a few small houses until the old city walls came down a century later (1802–17). By 1850, the section under examination was developed largely of small, peaked-roof, stone structures at the front of deep

lots, with shops on the ground floor and dwellings above. Most of the buildings destroyed on this street were made of stone, two or three stories high (two-thirds were two-story), with the upper story tucked under a steeply sloped roof. One-eighth were one-story and made of wood.²⁷ Mean rent per building on both segments was about C\$150. A decade after the fire (in 1861), mean rent per building in the burned section had quadrupled (to C\$683) (table 9.2). Although rents in the section that had escaped the fire also rose considerably over the same period, the mean rent per building was less than two-thirds that in the burned section. In other words, the burned area was redeveloped more intensively. Redevelopment was also quick, as all the properties were rebuilt within two years after the fire. By 1854, mean rent per building in the burned section was already three times what it had been before the fire.

The third area under analysis consists of five streets—Amherst, Visitation, Panet, Wolfe, and Montcalm—in the east end of the city.²⁸ Formerly known as Faubourg Québec (or the Quebec Suburb), the area was farmed until the beginning of the nineteenth century. Development was very sparse until the boom of the 1830s–1840s, and the area was inhabited almost entirely by working-class French Canadians. Before the fire, most structures in this area were of wood (65.6 percent) and consisted of one story with attic.²⁹ Their small mean size was reflected in the relatively low mean rent per building of about \$74. Given the distance from the city center, the small-scale development is consistent with our expectations. Unlike the more centrally located sample properties, the suburban properties appear to have been redeveloped at a slower pace and lower density. Although mean rent per building in the burned segments increased in the decade by one-third, rent in the nonburned segments more than doubled (table 9.2). In other words, the conflagration hindered the evolution of this area. Evidence to support this claim is provided by a newspaper reporter who, three months after the fire, remarked: “In the suburbs, the rebuilding by the poor people who suffered by the July fire is by no means general yet, but there are a great number of buildings going up. Many of these are not so good as the houses destroyed.”³⁰ A closer look reveals that redevelopment was much slower in this suburban district than in the more central regions. On Wolfe Street, only one-fifth of properties had been redeveloped by 1853, a year after the fire, and just over half by 1854.

While not all the burned properties were re-created like “a phoenix rising from the ashes,” the decade following the conflagrations was a period of unprecedented growth for the city in general. Rapid expansion of the population (from 57,000 in 1852 to 90,000 in 1861) was accommodated by adding a new ring of development at the urban fringe and by squeezing in and piling higher

in the center. The housing stock effectively doubled between 1852 and 1861 (from 7,000 to 14,000).³¹ Thanks to the intervention of fire, burned sections were able to close the gap between the optimal value of capital attained in the last boom and what could be obtained from “sunk” capital. In “re-forming” the burned districts, new bylaws restricting wood construction inspired the introduction of new fire-resistant materials and building forms that changed the whole look of the city.³² Whereas in 1852, Montreal, like most mid-nineteenth-century North American cities, was primarily a “city of kindling,” by 1861, the majority of buildings were stone faced or brick clad. In 1852, 63 percent of inhabited houses in Montreal were wooden, compared to only 43 percent in 1861 and 11 percent in 1891. Since wood shingles were banned, and slate and tin were expensive, the flat roof, covered with felt, tar, and gravel, made its first appearance in Montreal, as an economical alternative to the traditional peaked roof.³³ This innovation allowed the construction of a more cubic building, which provided owners with more rentable space. The flat roof was a prominent feature of commercial buildings erected in the 1850s, in the “Renaissance Revival” and “Proto-Rationalist” styles imported from Britain and the United States.³⁴ It was also a definitive characteristic of the Montreal “duplex,” a type of superimposed flat that blended British and French building traditions. The duplex achieved widespread popularity during a subsequent boom period (1866–80) and has dominated the urban landscape of Montreal to this day.³⁵

Rebuilding during Boom and Bust, 1872–1889

While the preceding analysis demonstrated distinct spatial variations in postfire rebuilding behavior across the city, what remains to be seen is how the response to fire might vary with the construction cycle. The conflagrations of the early 1850s occurred at the beginning of an economic upswing, when incentives to rebuild were likely to be strong. To see how the reconstruction process might have been affected by economic depression, we need a second investigation. To identify temporal variations in the postfire reconstruction process, I compiled morphological data for a sample of properties (20) totally destroyed by fires at different stages between two construction peaks (1872 and 1889). Drawn from the *Annual Reports of the Fire Department*, the sample, mapped in figure 9.2, included properties from different areas of the city, in different uses, and from different socioeconomic environments (table 9.3).³⁶ Details on prefire building form (such as type of construction and number of stories) and the extent of damage (physical and financial) were gleaned from newspaper accounts. To observe the pace of

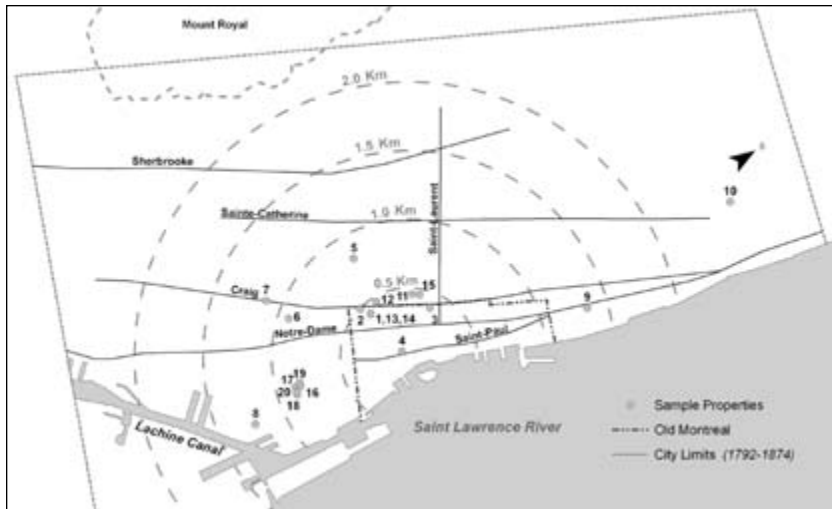


Figure 9.2. Location of sample properties burned in Montreal between 1872 and 1889. See table 9.3 for a list of properties. (Data from Montreal, *Annual Reports of Fire Department*, 1872–89; Montreal, *Rôle d'évaluation*, 1871–95; *Montreal Gazette*, 1872–89; *La Presse*, 1872–89; *Montreal Daily Star*, 1872–89; *Montreal Herald*, 1872–89.)

reconstruction, tax-roll data were gathered for each burned property beginning one year before the fire until three years after. As before, changes in the scale of development can be expressed as increases or decreases in total rental value. Supplemental information on the rebuilt forms was obtained from building permits, insurance atlases, and historical photographs and sketches.³⁷

Although the size of the sample is small—ten properties destroyed during a boom period plus ten destroyed during a depression—the evidence nonetheless suggests that the response to fire is affected by its timing in the construction cycle.³⁸ While most sample properties were redeveloped quickly—two-thirds within twelve months—properties destroyed during boom periods were more likely to experience a rapid recovery (table 9.3). All sample buildings razed during boom periods were rebuilt within two years, whereas 30 percent burned during depressions were still in ruins after two years. Also, at least 40 percent of owners of properties burned during depressions waited until a boom period to rebuild.

During boom periods, postfire redevelopment was also more likely to involve morphological changes. Rental values of this group of properties were almost always significantly greater than those before the fire, suggesting that they were redeveloped at a greater scale and intensity (table 9.3). The lots were not

Table 9.3. Redevelopment of sample properties burned between 1872 and 1889.

No.	CYCLE STAGE	FIRE YEAR	USE	PREFIRE	POSTFIRE	RENT	YEARS TO REBUILD	INSURANCE COVERAGE
				RENT (C\$)	RENT (C\$)	CHANGE (%)		
1	boom	1886	hall	4,510	10,850	+140	1	total
2	boom	1872	auction house	1,950	3,000	+54	2	total
3	boom	1872	foundry	1,000	1,500	+50	1	mostly
4	boom	1885	warehouse	2,000	2,530	+27	2	mostly
5	boom	1885	factory	800	1,500	+88	1	half
6	boom	1873	planing mill	600	1,000	+66	1	none
7	boom	1888	bakery	860	1,350	+57	1	NA
8	boom	1886	factory	340	450	+32	1	NA
9	boom	1875	bakery	700	800	+14	1	NA
10	boom	1886	factory	1,500	1,400	-7	2	partly
11	bust	1883	factory	900	1,500	+66	3	partly
12	bust	1883	foundry	1,710	1,950	+14	2	mostly
13	bust	1879	hall	5,000	4,950	-1	1	total
14	bust	1881	hall	4,950	4,950	0	1	total
15	bust	1877	factory	11,300	890	-32	1	total
16	bust	1877	lumberyard	300	300	0	1	total
17	bust	1877	lumberyard	250	250	0	1	total
18	bust	1877	dwelling	100	100	0		none
19	bust	1877	dwelling	200	100	-50	3	half
20	bust	1877	dwelling	140	0	-100	>5	none

Sources: Montreal, *Annual Reports of Fire Department*, 1872–89; Montreal, *Rôle d'évaluation*, 1871–95; *Montreal Gazette*, 1872–89; *La Presse*, 1872–89; *Montreal Daily Star*, 1872–89; *Montreal Herald*, 1872–89.

changed; a higher rental value accurately reflects the addition of floor area. Eight out of ten new buildings had a rental value at least 20 percent greater than before the fire (mean rent was 52 percent greater after rebuilding). A typical example is the industrial building on Dowd Street (no. 6 in sample), which was destroyed in 1885 and replaced the following year with a taller structure (five vs. three stories) that covered a larger proportion of the lot (68 percent vs. 60 percent), offered therefore almost double (1.88 times) the floor area and garnered almost twice (1.88 times) the rental value (C\$1,500 vs. C\$800).³⁹

In contrast to the boom-period trends, morphological change was much less likely to occur during depressions: half the properties destroyed between



BEFORE THE SLAUGHTER.

The Novelty Company's Building on St. Urbain Street before the Fire.



AFTER THE SLAUGHTER.

The Ruins of the Novelty Company's Building, showing: A, Crushed Roof of Undertaker's Store; B, the Yard where the Firemen were killed; C, the Remanent of Wall that fell and Crushed the Men.

Figure 9.3. Built fabric of Saint Urbain Street section before and after fire. (Reproduced from *Montreal Star*, May 7, 1877).

1876 and 1883 were rebuilt to their original scale. Nordheimer's concert hall on Saint James Street, for example, was twice consumed during the depression period, in 1879 and 1881 (no. 13 and no. 14 in sample), and each time rebuilt exactly the same as before. Conversely, after burning again in 1886, during a boom period (no. 1), the hall was rebuilt on a much grander scale and more than doubled in rental value (from C\$4,510 to C\$10,850). Whereas the old hall was a three-story, boxlike structure of simple construction, the new five-story building was constructed of red sandstone imported from Scotland, and two of its stories were dedicated to office space for rent. When morphological change did occur during bust periods, the new structure was likely to be on a smaller scale: 30 percent of burned properties displayed significantly lower rents after the fire (and one had still not been redeveloped after five years). In the set of depression fires, the only case that shows an increase in scale was an industrial building on Coté Street (no. 11) which burned in 1883 and was sold immediately to a new owner, who waited three years until an economic upswing before rebuilding. The more typical story of reconstruction during times of depression is that of businessman John Bulmer's industrial building on Saint Urbain Street (no. 15). Built in 1873, on the eve of the business and building crash, the top floor of the four-story, Proto-Rationalist-style loft building (fig. 9.3) remained vacant for four years. The building burned down in 1877, and he rebuilt a few months after the fire, with only three stories.

Snapshots of Saint Urbain Street before and after the fire provide clues as to how the circulation of capital reshaped the urban landscape at the microscale, and how the process of urban renewal, particularly in the densely built industrial city, could be radically accelerated by the intervention of fire. The peaked-roof wooden house at left in figure 9.3 was typical of buildings in the suburbs outside Old Montreal before the massive conflagrations of the 1850s, whereas Bulmer's stone-faced, industrial loft and the pair of brick-clad, Montreal "duplexes" erected in typical row formation (in 1870) were products of a subsequent wave of urban (re)development (1866–80).

How can we account for the differences in the patterns of redevelopment within the sample? The findings are consistent with predictions regarding the rhythm and trajectory of investment in the built environment. Redevelopment was most intense in the central areas, on streets such as Saint Paul, where competition for space was most extreme, and where there existed the greatest pressure to remodel the built environment to fit the needs of a changed economic environment. Saint Paul was already heavily developed before the conflagration, with very little open space remaining.⁴⁰ Therefore, if property owners were to

Table 9.4. Estimated losses and insurance coverage in conflagrations of the 1850s.

DATE OF FIRE	ESTIMATE OF LOSSES (C\$ 1,000S)	LOSSES INSURED (C\$ 1,000S)	PROPORTION OF LOSSES INSURED (%)
June 1850	320	90	28
August 1850	240	87	36
June 1852	834	609	73
July 1852	2,163	740	34
Total	3,557	1,526	43

Sources: *Montreal Gazette*, June 18, 1850; August 26, 1850; July 12, 1852; July 23, 1852; *Montreal Pilot*, July 26, 1852; Montreal General Relief Committee, *Proceedings*, 1853.

expand their built capital to take advantage of the escalating demand for central sites and to meet the expanding needs of a booming economy, they would have to build higher. To do so, however, would probably necessitate destruction of existing buildings first: the massive sunk capital would have to be replaced, new capital would have to be raised, and business and leases would have to be interrupted while reconstruction took place. The conflagration, therefore, removed some of the barriers to performing morphological changes, by offering property owners a tabula rasa upon which to rebuild. Rosen argues that the physical durability of buildings was one of the most important frictions impeding the environmental redevelopment process in nineteenth-century cities of the United States; this was also the case in nineteenth-century Montreal.⁴¹ Since there were no municipal regulations with respect to building height in Montreal (until 1901), the only restrictions on rebuilding higher were the limits of existing construction technology, the economic means of the owner, and, of course, the perception of potential returns. Redevelopment of Saint Paul Street was quick and intense because as much as three-quarters of the losses (building and stock) incurred were covered by insurance (table 9.4), and, more importantly, business had to carry on. Messrs. Seymour and Whitney, for example, owners of a typical wholesale warehouse on Saint Paul, started rebuilding immediately after the fire and reopened twelve weeks later.⁴² Raising the necessary capital was little problem for Seymour and Whitney, as they were fully insured. In fact, they were insured with two separate companies (\$14,000 in property with the Globe Agency, and \$12,000 stock with Phoenix Company) presumably to spread the risk in case one went bankrupt. Great fires often bankrupted small or local insurance companies.⁴³

The reconstruction of properties on Saint Lawrence Street after the fire of 1850 was also dramatic. Why was there such a significant increase in the scale of development on this street? Postconflagration Montreal experienced a population and economic boom in which competition for space in the city center became fierce. By the 1850s, lot coverage in Old Montreal was already almost total, but lots in the central suburbs were large, with plenty of room to expand. Properties in the old Faubourg Saint-Laurent became prime real estate, especially since the old city walls had recently been removed. Saint Lawrence Street was the primary axis between the central suburbs and the old city, and this was reflected in the value, scale, and intensity of redevelopment.

Why was postconflagration redevelopment in the eastern suburb much slower and less dramatic than in the central districts? Demand for space in the suburbs was weaker and alternative sites were available; therefore, the potential stream of rents in more remote locations was lower, and the incentives for owners to rebuild were weaker. Furthermore, nineteenth-century Montreal was highly segregated along lines of ethnic identity as well as socioeconomic status, and the east end was inhabited almost entirely by working-class French Canadians.⁴⁴ After a major disaster, the socioeconomic classes and business types that have the greatest reserves and resiliency are always the first to be successfully re-established.⁴⁵ In 1850, wealthy residents of nineteenth-century cities such as Montreal still occupied the center, and the poorest inhabited the periphery.⁴⁶ A greater amount of capital was available for rebuilding in the core than in the suburbs. It was estimated that three-quarters of the losses in the core were covered by insurance, compared to only one-third in the suburbs (table 9.4), and almost every party affected in the core was at least partly insured, whereas fewer than one in four of the sufferers in the suburbs had any coverage.⁴⁷ Credit was much harder to secure for small owners in the suburbs, who would have had little collateral; most had lost their lifetime savings in the capital sunk into their properties, both homes and workshops. Another deterrent to immediate re-investment by this poorly insured group would have been the perceived risk of potential losses in future conflagrations. It has been speculated that much of the nineteenth-century North American city was cheaply built and rebuilt because it was likely to be burned down.⁴⁸ In this respect, Montreal was typical of other nineteenth-century North American cities; the potential for disaster was built into the city. Stricter regulations (and enforcement) against wooden construction within the city limits would have reassured a certain class of owners (and insurance companies) that their investments in built capital would be more secure than before, but for the less-fortunate group of owners in the suburbs, “fire-proof” materials (stone or brick) were prohibitively expensive. Wealthier property owners could cover the additional costs for materials (and missed opportunities)

by erecting larger buildings with more rentable space. Evidence suggests that less-fortunate owners in the burned districts typically redeveloped their properties in two stages: first, by erecting the most basic shelter in wood; and then, by encasing the structure in brick as soon as finances permitted.⁴⁹

The evidence for individual properties burned between 1872 and 1889 further confirms our expectations: during boom periods, rebuilding was more likely to involve morphological changes such as the intensification of land use, and these changes appeared to be greatest on more-central properties, which were under the greatest competitive pressure. On the other hand, during an economic slump, property owners were not under as much pressure to rebuild quickly. They resisted rebuilding until it became more profitable, and they more often duplicated the old form, relying on insurance awarded, since they did not have access to additional capital to redevelop on a larger scale.

Consistent with expectations, the speed, intensity, and scale of postfire redevelopment in nineteenth-century Montreal varied according to the centrality of the site and the timing of destruction. Properties located in areas under the greatest competitive pressure were most likely to be rebuilt quickly and to exhibit morphological changes that increased the height of the building, the footprint on the lot, and the building envelope, as well as the solidity and durability of materials. The incentives to rebuild were stronger during an economic upswing than in a depression. Consistent with findings for major US cities in the nineteenth and early twentieth centuries, empirical evidence indicates that the basic pattern of urban growth that existed in Montreal before the conflagrations of the 1850s was not radically altered during the reconstruction period but merely intensified: the slope of the cone of rental values was steepened, reflecting the play of demand and the acceleration of activity in the city. The physical form of the city, reaching its greatest heights and density at the center, was an accurate translation into stone of the accumulation of capital.

Properties destroyed during boom periods were rebuilt more swiftly, more completely, and with greater inputs of new capital, compared to those destroyed during depressions. The findings point to the pressures imposed by the cyclical nature of accumulation in the built environment. Each surge of urban growth brought a dramatic increase in the flow of goods and people through the city, increased competition for land, and intensified pressure to adapt built forms inherited from the past to accommodate new demands. Since built capital is frozen in place, long lived, and difficult to change, a perennial source of conflict exists between contemporary demands and the legacy of investments in the built environment. In the nineteenth-century city, each new surge of growth produced massive congestion or periodic foul-ups in the urban growth machine.

Fire, therefore, was an important agent of urban morphological change in the nineteenth-century city. Whether sporadic and catastrophic or perennial and cumulative, fires provided opportunities to make much-needed improvements to the urban environment by removing the inertia of built capital, by leveling the structures that stood in the way. The evidence points to the power of capital accumulation in determining the form of redevelopment: the response to the increase in land values in the previous boom (past twenty years or so); the significance of a landowner's access to capital and the availability of capital at a critical moment of truth; and the landowner's vision of a stream of profits or rents in the future (the next twenty or so years). As reconstruction was achieved, typically the owner's stream of income was enhanced, accumulation was accelerated, the stream of income (from taxes) to the municipal corporation was enhanced, flows of traffic were accelerated, and the profitability of the growth machine was again, for a few years, restored.

NOTES

1. The standard works for Montreal are Clayton Gray, *The Montreal Story* (Montreal: Whitcombe & Gilmour, 1949); Kathleen Jenkins, *Montreal: Island City of the St. Lawrence* (New York: Doubleday, 1966); and Robert Rumilly, *Histoire de Montréal* (Montreal: Fides, 1970).

2. For studies of historic urban fires, see Jacques Roubaud, *The Great Fire of London: A Story with Interpolations and Bifurcations* (Elmwood Park, IL: Dalkey Archive Press, 1991); Ross Miller, *American Apocalypse: The Great Fire and the Myth of Chicago* (Chicago: University of Chicago Press, 1990); Carl Smith, *Urban Disorder and the Shape of Belief: The Great Chicago Fire, the Haymarket Bomb and the Model Town of Pullman* (Chicago: University of Chicago Press, 1995). Canadian urban historians have published relatively little on fires. Notable examples include John C. Weaver and Peter DeLottinville, "The Conflagration and the City: Disaster and Progress in British North America during the Nineteenth Century," *Histoire Sociale—Social History* 13 (1980): 417–49; John Taylor, "Fire, Disease and Water in Ottawa: An Introduction," *Urban History Review* 8 (1979): 7–37. Also of interest to historians are three papers by Frederick H. Armstrong that recount fires in Toronto: "The First Great Fire of Toronto, 1849," *Ontario History* 53 (1961): 201–21; "The Rebuilding of Toronto after the Great Fire of 1849," *Ontario History* 53 (1961): 233–49; and "The Second Great Fire of Toronto, 19–20 April, 1904," *Ontario History* 70 (1978): 3–38. Jon Fear examines the complications of implementing land-use zoning after fire in "The Lumber Piles Must Go': Ottawa's Lumber Interests and the Great Fire of 1900," *Urban History Review* 8 (1979): 38–65; Darrell A. Norris considers the role of fire insurance companies in "Flightless Phoenix: Fire Risk and Fire Insurance in Urban Canada, 1882–1886," *Urban History Review* 16 (1987): 62–68.

3. Jean-Claude Marsan, *Montréal en évolution: Historique du développement de l'architecture et de l'environnement urbain montréalais* (Laval, QC: Méridien architecture, 1994).

4. Joseph Nasr, "Toward a Morphology of Disaster," *Urban Morphology* 7, no. 2 (2003): 106–7; Jason Gilliland, "It's about Time: Exploring the Fourth Dimension in the Morphology of Urban Disasters," *Urban Morphology* 7, no. 2 (2003): 110–12.
5. Christine M. Rosen, *The Limits of Power: Great Fires and the Process of City Growth in America* (Cambridge: Cambridge University Press, 1986).
6. Mathew Novak, "Fire and Urban Morphology: A Spatio-Temporal Analysis of Destruction and Reconstruction in Early-Twentieth Century London, Ontario" (master's thesis, University of Western Ontario, 2006).
7. Daniel E. Turbeville, "Cities of Kindling: Geographical Implications of the Urban Fire Hazard on the Pacific Northwest Coast Frontier, 1851–1920" (PhD diss., Simon Fraser University, 1985).
8. Martyn J. Bowden, "Geographical Changes in Cities following Disaster," in *Period and Place: Research Methods in Historical Geography*, ed. Alan R. H. Baker and Mark Billinge (Cambridge: Cambridge University Press, 1982).
9. Lionel E. Frost and Eric L. Jones, "The Fire Gap and the Greater Durability of Nineteenth Century Cities," *Planning Perspectives* 4 (1989): 333–47.
10. Richard Harris, "The Impact of Building Controls on Residential Development in Toronto, 1900–1940," *Planning Perspectives* 6 (1991): 269–96; Harris, *Unplanned Suburbs: Toronto's American Tragedy, 1900–1950* (Baltimore: Johns Hopkins University Press, 1996).
11. Bowden, "Geographical Changes."
12. "Intensity of development" refers to the concentration of built capital on a lot or lots.
13. For additional approaches, see Pierre Gauthier and Jason Gilliland, "Mapping Urban Morphology: A Classification Scheme for Interpreting Contributions to the Study of Urban Form," *Urban Morphology* 10 (2006): 41–50.
14. See, for example, William Alonso, "The Historical and Structural Theories of Urban Form," *Land Economics* 40 (1964): 227–31.
15. Jeremy Whitehand, *The Changing Face of Cities: A Study of Development Cycles and Urban Form* (Oxford: Basil Blackwell, 1987).
16. David Harvey, *Consciousness and the Urban Experience* (Baltimore: Johns Hopkins University Press, 1985).
17. See Harold J. Dyos, "Railways and Housing in Victorian London. 1. Attila in London," *Journal of Transport History* 2 (1955): 11–21; Bruno Marchand, *Paris: Histoire d'une ville: XIXe–XXe siècle* (Paris: Le Seuil, 1993).
18. Public investment is a tool to promote accumulation of privately owned capital, and it may be that when money is scarce and the rate of profit low, private interests seek more aggressively to maneuver public investment. This might include regulated or limited-dividend utilities, use of public borrowing power or public powers of expropriation, e.g., flood control investments, railway and tramway investments, port improvements, or street widenings. See Christopher Boone, "Private Initiatives to Make Flood Control Public: The St. Gabriel Levee and Railway Company in Montreal, 1886–1890," *Historical*

Geography 25 (1997): 100–112; Jason Gilliland, “Muddy Shore to Modern Port: The Redimensioning of Montreal’s Waterfront Time-Space,” *Canadian Geographer* 48 (2004): 448–72; and Gilliland, “The Creative Destruction of Montreal: Street Widenings and Urban (Re)development in the Nineteenth Century,” *Urban History Review* 31 (2002): 37–51.

19. Alfred Sandham, *Ville-Marie, or, Sketches of Montreal, Past and Present* (Montreal: G. Bishop, 1870), 26.

20. David Hanna and Sherry Olson, “Métier, loyer et bouts de rue: L’armature de la société montréalaise de 1881 à 1901,” *Cahiers de géographie du Québec* 27 (1983): 255–75; Jason Gilliland, “Modeling Residential Mobility in Montreal, 1860–1900,” *Historical Methods* 31 (1998): 27–42; Jason Gilliland and Sherry Olson, “Claims on Housing Space in Nineteenth-Century Montreal,” *Urban History Review* 26 (1998): 3–16; Robert Lewis, “Homeownership Reassessed for Montreal in the 1840s,” *Canadian Geographer* 34 (1990): 150–52.

21. Extant cartographic sources are too infrequent and insufficient on their own for identifying morphological changes generated by the 1850s conflagrations. The earliest insurance atlas for Montreal was produced by Charles E. Goad, 1879–81. By “scale” of a building, I am referring to size or volume. “Scale of development” refers to the density of built capital, or building coverage on the particular lots in three dimensions. By measuring a stratified sample of houses, David Hanna and Sherry Olson confirmed the powerful correlation ($r=.99$) between rents and total floor area. See the convincing diagrams in Sherry Olson and David Hanna, “The Transformation of Montreal, 1847–1901,” in *Historical Atlas of Canada*, vol. 2, ed. R. L. Gentilcore (Toronto: University of Toronto Press, 1993); Sherry Olson and David Hanna, “The Social Landscape of Montreal, 1901,” in *Historical Atlas of Canada*, vol. 3, ed. D. Kerr and D. W. Holdsworth (Toronto: University of Toronto Press, 1990).

22. Contemporary newspapers helped identify the burned districts and provided general accounts of the destruction. Lewis (“Homeownership Reassessed”) ascertained that rental values reported before 1854 estimate total rent per building, whereas from 1854 onward they provide rental values for individual dwelling units, which can be totaled for each building to make comparisons with the earlier period.

23. Key to this analytical approach, sample segments were chosen for comparison only if they clearly had similar characteristics before the conflagration. A critical assumption is the absence of inflation, and it is, I submit, a reasonable one. The best discussion of temporal variation in rent valuations is found in the testimony of George E. Muir, city assessor, to the *Report of the Royal Commission on Capital and Labour in Canada* (Ottawa: Queen’s Printer, 1889), 258–64.

24. The section of Saint Paul under analysis lies entirely within Centre Ward, between Saint François Xavier and Saint Gabriel Streets. The properties between Saint Joseph Street and Custom House Square (both sides) represent the burned sample, while the remaining properties make up the nonburned sample.

25. *Montreal Gazette*, November 12, 1852, 2.

26. The two segments under examination are on the east side of Saint Lawrence in Saint Louis Ward. The burned sample runs from Craig to Vitré Street, and the unaffected sample from Vitré to Lagauchetière Street.

27. *Montreal Gazette*, August 26, 1850, 2.

28. Even though this area was within the city limits as of 1792, it was still commonly referred to as a *faubourg* and its physical and social characteristics were as such. The sample comprises properties on the west side of the five aforementioned streets within Saint James Ward. The burned stretches run from Saint Mary Street to Lagauchetière Street, and the unaffected stretches from Lagauchetière to Dorchester Street.

29. Montreal General Relief Committee, *Proceedings of the General Relief Committee Appointed by the Citizens of Montreal to Aid the Sufferers by the Great Conflagration of the 8th and 9th July, 1852* (Montreal: John Lovell, 1853).

30. *Montreal Gazette*, November 12, 1852, 2.

31. Figures provided in published summaries of census returns. See David Hanna, "Creation of an Early Victorian Suburb in Montreal," *Urban History Review* 9 (1980): 38–64.

32. In French Régime Montreal (1642–1760), wood shingles were outlawed in 1676, and stone construction mandated after a conflagration in 1721. These regulations had lapsed by the time the newly incorporated city published its first bylaws in 1833. In 1842, the city was reincorporated, and the ban on wood construction was reinstated, but only for the central core; after the disastrous summer of 1850, a new bylaw prohibited wooden buildings across the entire city. A proviso to the City Charter of 1865 allowed the erection of wooden buildings if encased in brickwork, and wooden roofs if covered with a fireproof composition.

33. David Hanna, "Montreal, A City Built by Small Builders, 1867–1880" (PhD thesis, McGill University, 1986).

34. See François Rémillard and Brian Merrett, *Montreal Architecture: A Guide to Styles and Buildings* (Montreal: Meridian Press, 1990).

35. On the Montreal duplex, see Hanna, "Montreal"; François Dufaux, "A New World from Two Old Ones: The Evolution of Montreal's Tenements, 1850–1892," *Urban Morphology* 4 (2000): 9–19.

36. Chronological records of fires are available beginning in 1872 (*Annual Reports of the Montreal Fire Department*). The sample represents approximately one-quarter of all developed properties (excluding barns, sheds, and outbuildings) recorded as "totally destroyed" by fire in 1872–89. Fires were excluded from the sample if a corresponding account could not be found in a local newspaper.

37. Building permits are tabulated in the *Annual Reports of the Inspector of Buildings*. The permits that survive (1868–77, less 1872) provided additional postfire morphological data, such as number of stories, building materials, and width of frontage. For certain sample properties burned between 1882 and 1889, the Goad atlases (1881 and 1890 update) were compared for additional signs of morphological change. On research with insurance atlases, see Peter Aspinall, "Sources for Urban History: II. The Use of Nineteenth-Century Fire Insurance Plans for the Urban Historian," *Local Historian* 11

(1975): 343–49; Gerald Bloomfield, “Canadian Fire Insurance Plans and Industrial Archeology,” *IA: The Journal of the Society for Industrial Archeology* 8 (1982): 67–80; Kim Keister, “Charts of Change,” *Historic Preservation* 45 (1993): 42–49, 91–92; Jason Gilliland and Mathew Novak, “On Positioning the Past with the Present: The Use of Fire Insurance Plans and GIS for Urban Environmental History,” *Environmental History* 11 (2006): 136–39.

38. The boom periods of high construction in Montreal were 1872–75 and 1884–89 inclusive; the bust period was 1876–83 inclusive. On the cyclical rhythm of development in North American cities, see John R. Riggleman, “Building Cycles in the United States, 1875–1932,” *Journal of the American Statistical Association* 28 (1933): 174–83; Brian J. L. Berry, *Long Wave Rhythms in Economic Development and Political Behavior* (Baltimore: Johns Hopkins University Press, 1991).

39. Lot coverage equals area of the building footprint divided by area of the lot, measured before and after the fire using the Goad atlases of 1881 and 1890.

40. As observed on the Cane map of 1846.

41. Rosen, *Limits of Power*.

42. Most owners on Saint Paul rebuilt within a year (*Montreal Gazette*, November 12, 1852, 2).

43. Norris, “Flightless Phoenix.”

44. Jason Gilliland and Sherry Olson, “Residential Segregation in the Industrializing City: A Closer Look,” *Urban Geography* 31 (2010): 29–58.

45. Bowden, “Geographical Changes.”

46. In Montreal, it was the conflagrations and a cholera outbreak (1854) that drove the 1850s migration of wealthy citizens to the more spacious and airy suburban plots near the slopes of Mount Royal. Hanna, “Creation.”

47. Montreal General Relief Committee, *Proceedings of the General Relief Committee*.

48. Weaver and DeLottinville, “Conflagration and the City.”

49. *Montreal Pilot*, July 16, 1852; *Montreal Gazette*, August 5, 1852.

The Great Fire of Hamburg, 1842

From Catastrophe to Reform

DIRK SCHUBERT

Fires in cities are generally described as singular events and exceptional catastrophes in their history. The course of a fire, dates and facts about buildings destroyed, and reconstruction plans are often recorded in detail, but “fire historians” seldom look at the social, political, economic, and environmental ramifications, nor at the changes in mental perception brought about in their wake. The impact of a fire is sometimes dramatized to raise money for victim support and restoration funds, although owners of damaged properties often receive adequate compensation from insurance companies or have the opportunity to start new, attractive businesses afterward. But fire is also at times the cause of long-term change and reform, and is a catalyst for the introduction of stricter building regulations, social reform, and more effective governance. Such transformations are only implicitly related to fires, but research frequently reveals fires to be the starting point for social and spatial transformations. We should bear in mind that preindustrial cities frequently burned down and had to be rebuilt.

Fire, here, we must define as an “erupting” large blaze.¹ These blazes are events spanning a certain time period in a specific place. Ulrich Beck, in his World Risk Society, developed a typology of uncertainty relevant to such

Table 10.1. Some comparative data on big fires and their impact.

LONDON, 1666	HAMBURG, 1842	CHICAGO, 1871	SAN FRANCISCO, 1906 (CAUSED BY AN EARTHQUAKE)
500,000 inhabitants	160,000 inhabitants	550,000 inhabitants	410,000 inhabitants
13,200 buildings	1,700 buildings	18,000 buildings	28,000 buildings
70,000 homeless	20,000 homeless	100,000 homeless	300,000 homeless
~10 deaths	51 deaths	300 deaths	3,000 deaths
0.6 square miles	0.12 square miles	3.1 square miles	4.5 square miles
US\$1.8 billion (2005)	US\$1.6 billion (2008)	US\$300 million (2006)	US\$8.6 billion (2005)

Sources: Walter G. Bell, *The Great Fire of London in 1666* (Westport, CT: Greenwood Publishing Group, 1971); Julius Faulwasser, *Der große Brand und der Wiederaufbau von Hamburg: Ein Denkmal zu den fünfzigjährigen Erinnerungstagen des 5. bis 8. Mai 1842* (Hamburg: Meißner, 1892); Christine Meisner Rosen, *The Limits of Power: Great Fires and the Process of City Growth in America* (Cambridge: Cambridge University Press, 1986); Peer Rechenbach and Jürgen Meinert, "Of Fire Disasters and Their Consequences: City Planning, Fire Departments and Safety Measures in Hamburg and Chicago," in *Tales of Two Cities/Stadteschichten: Hamburg & Chicago*, ed. Claudia Schnurmann and Iris Wigger (Münster: Lit, 2006), 45–55; Multidisciplinary Center for Earthquake Engineering Research, "Quick Facts about the 1906 Earthquake and Fires," http://mceer.buffalo.edu/1906_Earthquake/additional_information/earthquake-facts.asp, accessed October 17, 2011; Museum of the City of San Francisco, "San Francisco 1906 Earthquake," http://www.sfmuseum.org/1906_eq_questions/eq.htm, accessed October 17, 2011.

events, which differentiates between temporary uncertainty, unaware uncertainty, intended uncertainty, and inadvertent uncertainty. Concerning the threat of fires in cities, he notes that the chain of events preceding them cannot be completely avoided even with comprehensive prevention. To illustrate his point, Beck quotes the Swiss author and dramatist Friedrich Dürrenmatt: "The more planned the action of man, the more unexpectedly he is struck by accident."² Risk management assesses insurability based on the frequency of fires as a means of calculating compensation. In this sense, risk becomes a market opportunity for insurance companies, and fires are turned into so many "claims."

Beck develops an important general framework to evaluate catastrophes, but there are few studies that deal specifically with fire.³ Some authors have developed a model to differentiate between four overlapping phases within a disaster management cycle: "1) Emergency responses, 2) Restoration of the restorable, 3) Reconstruction of the destroyed for functional replacement, and 4) Reconstruction for commemoration, betterment and development."⁴ Disasters can vary considerably depending on the cause, the extent of destruction, the psychological consequences, the type of reconstruction, and the governance structures before and after modernization. A comparative overview of large urban fires illustrates their significance in a historical context (table 10.1). This

chapter shows how Hamburg's burned-down city center was modernized and reorganized after the fire of 1842 in a manner that was unlikely to have occurred under other circumstances.⁵ Thus, the blaze was an important agent of change in the transformation of this peculiar urban environment.

Hamburg, the "Most English City on the Continent"

The development from crafts and manufacture to industrial and capitalist methods of production and the associated increase in trading were particularly significant in Hamburg and brought about its development from fortress town to modern city.⁶ The time around 1840 was marked by change in many fields. The arrival of factories, stock exchanges, railways, and steam shipping led to the rapid transformation of a formerly staid small town with its associated manual trades into a modern economy and industrial society.⁷ In a republican merchant-dominated city like Hamburg, surrounded by monarchies like Hannover and Prussia and hidden behind an imposing facade of affluence and contentment, the outdated municipal system gave rise to political conflict. The local political situation had its roots in traditional institutions. Hamburg's constitution, dating back to 1532, was in force until 1860. It was based on a two-chamber system consisting of the council, now called the senate, and the state parliament, which was recruited from citizens' representatives of the five parishes. Legislation was passed by both the senate and parliament. Members of parliament were elected by the few national subjects who had citizenship and voting rights. Obtaining these rights was predicated on a number of conditions.⁸

Around 1840, the urban fabric of Hamburg was characterized by half-timbered buildings, whose proverbially "cramped nooks, courtyards and alleyways" made for unhealthy housing conditions in the seaport city.⁹ Tenement houses several stories tall had started to increase in number in the mid-eighteenth century, ultimately becoming the predominant type of housing. The demolition of the ramparts and the modernization of transport routes had brought about local improvements and "opened up" the city. However, these innovations left the overcrowded and narrow alleys in the city center largely unchanged. Here, the risk of fire had risen with increasing population densities and buildings constructed of cheap, flammable materials as well as warehouses storing highly combustible goods.

Hamburg's fire alarm system relied mostly on acoustic signals like shouting and the ringing of fire bells. Yet the manner in which the city organized its fire brigade was considered exemplary.¹⁰ In 1842, Hamburg was relatively well



Figure 10.1. Equipment and portable pumps of the fire brigade. (Reproduced from Kulturbehörde Hamburg, Denkmalschutzamt, Museumspädagogischer Dienst, *Wasser für Hamburg: Zur Geschichte der Hamburger Wasserversorgung und -entsorgung* [Hamburg: Dölling & Galitz, 1992], 31.)

equipped, with thirty-four water pumps and pump ships as well as 1,150 fire-fighters. Teams comprised commanders, pipe captains, and men on the pumps in addition to men held in reserve.¹¹ However, water for firefighting could be pumped only from ground level since the hoses were made of leather and would not slide on the ladders (fig. 10.1). The pump teams had to work extremely hard when fighting a fire.¹² Water was taken from emergency posts situated alongside natural waterways or from the canals (fig. 10.2).¹³ The physician Johann Jacob Rambach explained the benefits of this system in 1801, when he wrote, “[The canals] enable our fire brigade to quickly put out all conflagrations, a distinct advantage in such a densely built up city.”¹⁴ At low tide, however, it was difficult to find sufficient amounts of water to fight a fire, and in winter the canals and the River Alster frequently froze over.

In 1789, the English visitor Spencer T. Coleridge wrote: “Hamburg could have been a rival to Venice, but it is a mess of unsightly junk and stinking puddles. . . . And the first pre-condition for any kind of architectural beauty in



Figure 10.2. Fire brigade fighting from the canals. (Reproduced from Kulturbehörde Hamburg, Denkmalschutzamt, Museumspädagogischer Dienst, *Wasser für Hamburg: Zur Geschichte der Hamburger Wasserversorgung und -entsorgung* [Hamburg: Dölling and Galitz, 1992], 28.)

Hamburg would be a large fire.”¹⁵ Forty-four years later, at one o’clock on the night of May 4 and 5, the cry of “fire on Deichstrasse” was heard.

Emergency Response

Course and Expansion of the Fire

The fire started for reasons unknown on the lower part of Deichstrasse, close to the city’s harbor, where highly flammable goods were stored. From there, the flames spread rapidly in a northeasterly direction and jumped to adjacent buildings containing flammable goods such as ethyl alcohol, rum, camphor, and shellac. Thus, it was not long before the blaze crossed the seven-meter-wide canal to the east of Deichstrasse (fig. 10.3). In spite of the many firefighting pumps, the blaze could not be controlled. Plans to demolish rows of houses with cannons and to blast open a fire break to stop the flames from spreading were initially dismissed. The senate also rejected calls to level neighboring



Figure 10.3. Burned-down area and city center of Hamburg, 1842. (Map by Otto Meissner, 1892. Reproduced from Julius Faulwasser, *Der große Brand und der Wiederaufbau von Hamburg* [Hamburg, 1892], 65.)

buildings as a measure to contain the fire for fear of compensation claims. It was not until the next day that the senate permitted blasting, but nonetheless, the fire jumped the gap. Dry weather conditions and persistent southwesterly winds accelerated the spread of the flames. During the night of May 5 and 6, the senate even contemplated blowing up the town hall.¹⁶ Two English engineers, Francis Giles and William Lindley, who had been called to Hamburg in 1840 to build a railway from Hamburg to Bergedorf, declared that doing so was a necessary measure to stop the fire from spreading further.¹⁷

To confirm this difficult decision, other experts were “questioned.” Then, files, mortgage books, and cash reserves were salvaged before the town hall was finally blown up at 2:15 a.m. On May 5—Ascension Day—Saint Nicolai Church was consumed by the flames. On May 6, Saint Petri caught fire, and only the artwork could be salvaged from the church. On the same day, the one thousand inmates of the prison and the poorhouse were evacuated. On May 7, the fire spread to the Saint Gertrude Chapel.¹⁸

Even with many able helpers called in from neighboring towns, it was impossible to extinguish the fire. The fire-boats could no longer pass through the canals, which were blocked by collapsed buildings. Military personnel from nearby garrisons assisted with the construction of barricades and in the prevention of looting. All the same, warehouses and well-stocked wine cellars were ransacked by looters who could not resist the lure of expensive goods and abandoned themselves to the pleasures of wine and cigars. Hordes of thieves gained access

to houses using axes, and drank, ate, and stole whatever they found. Fire buckets filled with champagne are reputed to have been passed around.

For several reasons, firefighting turned out to be extremely difficult. The parish fire brigades had no central authority to coordinate operations, and could not be deployed efficiently. Also, there was insufficient water because the canals were inaccessible. The fire raged for four days, and it was not until May 8, seventy-nine hours later, that it was finally extinguished. The direction of the wind had changed, which helped win the battle. Firefighting went on for several more days to stifle smoldering embers but the commercial center of the city had already been razed to the ground (fig. 10.4): the bank, the medieval town hall (which had been reconstructed and enlarged over the centuries), the tall treadmill-driven wooden crane for handling heavy cargo, the scales for controlling weights, and the old stock exchange all went up in flames. What had initially been considered a large fire had turned into a catastrophe within a few hours.

The citizens of Hamburg were panic-stricken and abandoned their homes in terror, often without even trying to put out the flames. The chaos in the streets was unprecedented. Those who had just been made homeless were robbed of the few belongings they had salvaged. The civic guard had to fight looters at gunpoint. Unsure about which way the flames would spread and without guidance in the face of the chaotic circumstances, seventy thousand people, almost half of the city's population, fled the fire in panic. Some were able to return immediately to their undamaged houses; others preferred to wait until the situation had been brought under control. The overwhelmed authorities began to lose their sense of security. What is more, their seeming helplessness in the wake of the catastrophe added to the disorder and devastation.¹⁹ The new railway line to Bergedorf that was due to be inaugurated on May 7 was now used to bring in help and to evacuate people.

Nearly two thousand residential buildings, containing more than four thousand apartments and many public buildings, burned down; ultimately more than twenty thousand people were made homeless. In the core of the city, only the new stock exchange built of stone with a tin roof survived the flames.²⁰ In contrast, many of the warehouses were unharmed, two hundred ships called at Hamburg during the days of the fire, and not a single merchant had to file for bankruptcy. However, the damages were immense and the loss to the fire insurance fund and companies amounted to 42 million marks, equivalent to nearly 25 percent of the value of all insured properties. Damaged home furnishings amounted to 30 million marks and merchandise to 28 million marks.



Figure 10.4. Streets and plots before (*top*) and after (*bottom*) the Great Fire, 1842. (Reproduced from Hans Speckter, *Der Wiederaufbau Hamburgs nach dem großen Brande von 1842: Vorbild und Mahnung für die heutige Zeit* [Hamburg: Boysen & Maasch, 1952], 31, 33.)

Immediate Measures after the Fire

Many people who had left their homes in fear found their houses and belongings untouched and were able to return. Others had to spend the night outdoors or were taken in by friends or relatives. Public buildings, churches, and synagogues were used as temporary shelters. The provision of supplies, however, proved to be difficult. Numerous bakeries had been destroyed in the fire. Warm soup was brought to Hamburg from the neighboring town of Altona. Berlin sent bread and warm blankets.

Many of the destroyed buildings were the “poor flats of laborers.” Immediately after the fire, tents were put up, and later relief houses were constructed. By the end of May, 2,800 families had been supplied with clothing and beds. Entire shantytowns appeared in the Steinthor and Hammerbrook neighborhoods. The relief housing was made available at cheap, fixed rates and helped to curb the sometimes exorbitant rents, but the fire notably affected rents in general.²¹ Access to the scene of the fire was restricted because of the danger of collapsing buildings and looting, and owners had to obtain permission to retrieve their belongings. Not only did the streets have to be cleared but debris and rubble made some canals and waterways impassable. As the city began its efforts to recover, the old entrepreneurial spirit awoke and craftspeople, merchants, and lawyers advertised their new businesses in the newspapers.

The trade in illustrations of the fire was soon booming. “Unsurpassable works” in “vivid colors” were advertised. Often the pictures of the “fire memorial” were adorned with verse and set in ornamental frames. Scenes of people fleeing with their belongings, burning houses, firefighters in action, and uniformed civic guards were printed and sold en masse (fig. 10.5). Pictures of ruins, in the style of romantic landscape painting, were also popular.²² A spate of texts appeared. The first included detailed descriptions of the fire, followed by discussions of the causes and, finally, literary interpretations. The sale of profitable memorabilia started straightaway and gave rise to creative new markets. The trade in curiosities from the fire was a flourishing one, and melted metal objects, medals, china, watches, and similar items were much in demand.

Hamburg’s misfortune was met with worldwide sympathy. Soon a huge wave of financial aid reached Hamburg. Donations came from many states, emperors, kings, sovereigns, and private individuals, and totaled almost 7 million marks.²³ After a Prussian sapper lost his life in a blasting operation in the ruins of Saint Petri, Hamburg held a funeral rich in patriotic pomp as a gesture of gratitude toward Prussia. Prussia had also offered to send troops, which Hamburg had declined. The dramatic gesture of the grand funeral thus reflected a fine



Figure 10.5. Images of the fire. (Peter Suhr, *Der Jungfernstieg in Hamburg am 6. Mai 1842*. Reproduced from Museum für Hamburgische Geschichte, *Es brannte an allen Ecken zugleich: Hamburg 1842*, ed. Claudia Horbas and Ortwin Pelc [Heide: Boyens, 2002], 12.)

balancing act between symbolic politics and Hamburg’s strategy to preserve its independence.

Restoration and Reconstruction

The fire had uncovered fundamental flaws in the organization and responsibilities of the city government. The outdated organizational structures of firefighting, the lack of efficient control of fire brigades, insufficient expertise at the decision-making level, and poor coordination coupled with widespread hooliganism and theft revealed the inadequacies of the town’s emergency response capabilities. The need for fundamental change was soon voiced; however, the immediate measures imposed by the senate were modest and helped to detract attention from more radical demands.

A commission was immediately formed, and was granted comprehensive powers. Clearance orders, fundraising through donations, loans from taxes, and restoration plans including the reorganization of land and expropriation laws as well as new building regulations were set in motion within a short time.²⁴ The alternatives were either to fundamentally reorganize plots or to retain the pre-fire division of land. The commission report stated: “Either keep all the

former parceling of building land and the alignment of roads, which gives everyone his former land undiminished, or treat the entire burned part as a blank slate and create completely new streets, squares, etc., which cannot be executed without the general expropriation and abolishing of all individual land ownership.”²⁵

The Association of Property Owners articulated the criticisms of the approximately 130 citizens whose land had already been expropriated or was scheduled to be expropriated. “In no other place on earth” has an expropriation law been enforced in such a “harsh and uncivil manner” as here in Hamburg, its spokesperson complained. “The middle classes of our town seem chosen to quench the disaster’s flames.”²⁶ Expropriation would cause a shift in land ownership since the new building plots were larger, and consequently, there would be significantly fewer owners. For the moment, however, rebuilding was prohibited in the area affected by the fire.

Building works were only possible by permission of the commission. There was a call for stricter building and fire regulations. The fire set on course the restoration and modernization of parts of the town, the implementation of which would otherwise have been much more unwieldy and time consuming. It allowed the planning of a large, continuous area and forced consideration of the challenges facing modern urban design. Simultaneously, the tools for this undertaking had to be invented as events unfolded, their main features anticipating the later German redevelopment law.²⁷

The first step in the reorganization of the city was to determine a new concept for the alignment and width of streets. Immediately after the fire, the thirty-four-year-old Englishman William Lindley (1808–1900) was commissioned to draft a local development plan.²⁸ A technical commission was set up for the design. It consisted of private architects (Alexis de Chateauneuf, Jakob Heinrich Ludloff, Klees Wülbern, and, temporarily, Carl Friedrich Reichardt) and the three highest-ranking civil servants (Karl Ludwig Wimmel, Heinrich Hübbe, and Paridom Gottlob Heinrich).²⁹ Their task was to oversee the reconstruction proposals and to approve the new local development plan. The director of construction, Wimmel, was sixty-six years old at the time and Heinrich sixty-five: both were overwhelmed by the complexity of the task. Lindley on the other hand—young, dynamic, and worldly wise—submitted a plan five days after his appointment that proposed significant interventions in the remaining medieval urban fabric.³⁰

That the senate and merchants were still essentially premodern in their conceptions and way of thinking is further illustrated by the fact that there was no accurate survey of the city to serve as a basis for the new proposals, and one

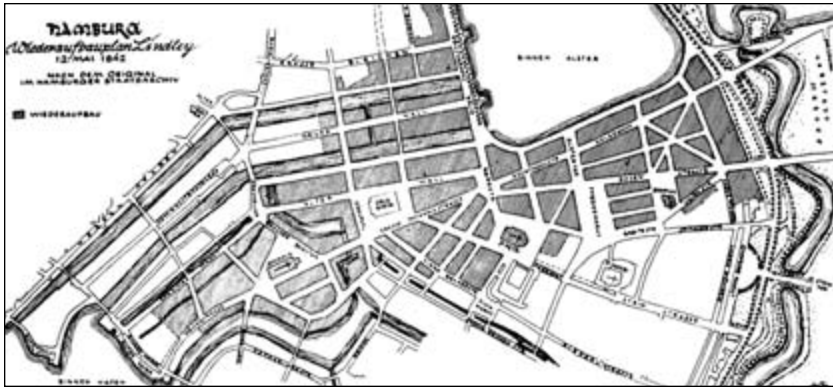


Figure 10.6. William Lindley’s reconstruction plan. (Reproduced from Evi Jung-Köhler, *Verlust und Chance, Hamburg 1842: Stadtmodernisierung beim Wiederaufbau nach dem Großen Brand* [Hamburg: Verein für Hamburgische Geschichte, 1991], 81.)

had to be hurriedly drawn up over three months by the surveyor Nagel.³¹ Lindley’s first plan did not show road cross-sections but only delineated the rough parceling out of building plots. The urban planning objectives included sanitation, fire protection, transport, and security.

Lindley’s plan had straight roads and was revised by the technical commission to make the land parceling more property-owner friendly. Discussions of the plans of another Englishman, the engineer W. D. Holmes, fed the not entirely unjustified accusation of widespread Anglomania. Holmes’s plan extended far beyond mere reconstruction in the area of the fire and incorporated almost the entire city within the ramparts.³² On September 1, 1842, the senate and the parliament adopted five policies to organize reconstruction: a plan for the reconstruction of the city, an expropriation law, proposals on how to obtain necessary financing, improvements to Alstermühlen, and Lindley’s scheme for draining and developing Hammerbrook.

The lengthy process of legislation in the two-chamber system was greatly accelerated owing to the generally felt urgency. Lindley’s plan was adopted as the basis for the parceling out of plots in the destroyed part of the city, for infrastructure measures, and for rebuilding according to “modern” ideas. Lindley took the stock exchange, which remained undamaged amid the ruins, as a free-standing starting point for redevelopment. This symbol of strength, which also signified the importance of Hamburg’s merchants, became the urban center. It would later incorporate the town hall, its square, the Alster basin, Kleine Alster, and Adolphsplatz.

Following the expropriation law, the redistribution of properties was effected in the entire destroyed area.³³ More than 750 properties were reposessed and, after redistribution, resold at higher land prices. Before the fire, building plots had been only five to six meters in width, but the new plots were often eight to ten meters wide. Expropriation and resale were not done by the courts but by an arbitration tribunal composed of sixteen citizens. Land prices in the redevelopment area had risen by around 10 percent after the fire. The increase in value was most apparent in the central areas affected by the blaze and in the devaluation of properties in all other parts of the city.³⁴ Land distribution was highly controversial: in 1842, the architect Reichardt demanded the “protection of also the smallest individual interests, wherever they coalesce with the general best interest.”³⁵ After four years, all land had been sold and reconstruction had been completed on nearly all the plots. The true advantage of the new parceling, apart from improved transport routes, was better utilization of the plots, resulting in longer street frontages and shallower depths.

Hamburg’s merchants drew up a detailed balance sheet for the costs of this “cleanup.” Expenditure on firefighting, clearance, fees, compulsory purchase, and new government buildings came to 24,850 million marks. This was set against the sum of 19,700 million marks collected from sales and profits from building ruins and the like. Thus, for a contribution of only 5 million marks, Julius Faulwasser noted in 1892, the entire city was to be redeveloped. “At no other time and under no other circumstances,” Faulwasser concluded, “would it have been possible to accomplish such a comprehensive redesign of a large city with such moderate funds.”³⁶

The rapid reconstruction of the city was also accelerated by the uncharacteristic rapidity with which the fire insurance companies settled claims. For some of them, however, the Great Fire became a financial disaster. The Hamburger Feuerkasse, for example, founded in 1676, had introduced replacement value insurance in 1833, and consequently buildings had to be reconstructed after the fire at the going rate. The damage amounted to 38 million Courant marks (approximately 520 million US dollars). This was equivalent to approximately 20 percent of the total value of all insured buildings. Refinancing relied on a state loan, and for eighteen years all policyholders had to pay higher fees, while the local rates for citizens went up in the twenty years that followed. The government loan was not fully repaid until 1888. Damage to furnishings was covered by other insurance policies, if these items were insured at all. Three insurance companies went bankrupt. After the blaze, firefighting and fire insurance, both of which had previously been carried out by the Hamburger Feuerkasse, were decoupled, with the latter no longer responsible for the organization of firefighting.

The achievements of the English engineer Lindley were not entirely without controversy. He was an internationally acclaimed engineer who had mastered all facets of his profession, from engineering sciences, railway construction, and harbor building to infrastructure, sewage system planning, and town planning. His success inevitably attracted critics. Carl Friedrich Reichardt, an architect from Hamburg who had worked with Karl Friedrich Schinkel, now turned against Lindley's "dictatorial position."³⁷ Reichardt protested against the "one-sided overrating of everything English" and the prevalent "foolish Anglo-mania," criticized the appointment of Lindley rather than the employment of one of the "proper building officers of the state," and scorned Hamburg's reconstruction as an English plan (as claimed by some).³⁸ Later, he retracted his harsher criticisms of Lindley and blamed instead the development on the "Anglomaniac enthusiasm of his adulators."³⁹

Reconstruction on the fire site began just a week after the much-discussed local development plan had been approved, and work progressed rapidly. Soon, a fleet of barges on the River Elbe was busy transporting bricks via the Oste, the Elbe, and the Stör to Hamburg, and bringing Swedish timber via Lübeck. The seventy narrow streets and squares destroyed by the fire were replaced with forty-two wider streets. The long-term and irreversible consequences of the fire cannot be overstated. In its wake, a process of social change also occurred in the residential sector of the newly rebuilt town center. As there was now an insufficient number of small apartments, former inner-city residents had to move to the periphery or "move closer together" in other districts. After the fire, many people settled in Hammerbrook (later also called "Jammerbrook" because of its great density; *jammern* is German for "moan, lament"), using the rubble to raise the level of Steinwerder on the opposite bank of the River Elbe.⁴⁰ This urban expansion paved the way for the further development of the city. Shipping between the Alster and the Elbe, previously hindered by a mill on Alsterdamm, now became possible, and the suburbs Harvestehude and Winterhude, formerly prone to flooding, were turned into valuable building land.

Functional Reconstruction

The architect Reichardt had high hopes that the fire of 1842 would "continue to gradually improve those quarters spared by the fire in order to provide the residents with light and air, to push out the narrow, dirty alleyways, damp cellars, and lethal shared accommodation."⁴¹ However, it took nearly sixty years for his hopes to be realized, and even then, they were met with criticism. The sub-heading of an 1871 publication on sanitation and water supply warned about a

too close adoption of “the English state of things”: the author considered “the introduction of English water canals a foolish waste of money and betrayal of arable farming, notwithstanding the inevitable contamination of the soil by suspected leakages in such canals.”⁴² However, the Great Fire did provide the opportunity to fundamentally modernize the technical infrastructure of Hamburg according to Lindley’s plans.

Until the first third of the nineteenth century, drinking water was taken directly from the river Elbe, the Alster, and the canals.⁴³ People living on a canal, however, were permitted to dump their chamber pots and household waste into the same waterways. In places where discharge into the canals was not possible and where there was no sewer access, the *Kummerwagen* (misery cart) took care of waste disposal.⁴⁴ According to the physician Johann Jacob Rambach, any measures taken for cleaning the canals prior to the fire were aimed at ensuring the navigability of canals rather than maintaining a healthy population. Postfire, however, steps were put in place to reorganize Hamburg’s supply and waste disposal infrastructure in a systematic and scientific manner.⁴⁵ Referring to his negative experiences in London, Lindley demanded that the supply of potable water should be organized not under civil law but as public infrastructure for the good of the community and as a service to the public.⁴⁶ Lindley’s plan also considered social issues in determining the cost of water. He could draw on the newest experience from England in the field of hygiene and sanitation as well as transportation of waste, which was partly still in the trial phase.⁴⁷

The introduction of a sewage system gave a social problem a technical solution; it was the beginning of the city’s radical technical modernization.⁴⁸ The introduction of gas lighting in 1843 brought another technical innovation driven by the German-English consortium. Furthermore, the first public bathhouse on the continent was built in 1854–55 on Lindley’s initiative in Klosterwall in Hamburg. Following the English example, men and women had separate entrances, and soap and towels were provided free of charge. Lindley thought that personal hygiene would positively influence the moral conduct of the lower classes in addition to relieving the public purse.⁴⁹ The standard argument in favor of reform was based on the assumption that investment in public health would bring long-term savings. However, the new sanitation infrastructure, though based on firm scientific principles, was also linked to coercive and disciplinarian notions of public order.⁵⁰

Despite all his endeavors, however, the state parliament rejected the proposal of the senate in 1860 to make Lindley chief engineer and thus give him a permanent position. Until then, Lindley had been working as a “free”

consultant. Critics in Hamburg questioned Lindley's preference for English machinery and workers, the bypassing of the existing public and private water companies, and the repeated failure to stay within cost estimates. Undeterred, though, by Hamburg's lukewarm gratitude, Lindley went on to make significant contributions to the sewerage and water supply systems of other German cities.⁵¹

Bettering the City

The fire in Hamburg led to the development of more-effective utilitarian structures in all parts of public life. In a worldwide survey on fire brigades published in 1866, the improvements were duly noted: "The city of Hamburg has had its fire extinguishing arrangements greatly improved of late years, and since the disastrous conflagration of 1842, established an efficient system. The city is divided into two districts and the water supply is high pressure: fire hydrants (nearly 2,000 in number) being placed all over the city."⁵²

An event that, at first, seemed to be a huge disaster turns out on closer examination to have been the source of great achievement and future prosperity for many people, as the fire provided a unique chance to restructure the densely populated city center and replace it with wider streets. To some extent, destruction was inevitable. Fritz Schumacher, for example, pointed out in 1969 that "[t]here was no other option than to destroy the old Hamburg; transport's imperative demand, in the slow process of redevelopment, would have engulfed the charms of the city bit by bit."⁵³ The modernization of the spatial structure of the city also accelerated the renewal of traditional social and political structures in a Germany still dominated by *laissez faire* and preindustrial opinion.⁵⁴ "Hence, the great ideas for the reconstruction of the incinerated districts gained a firm foothold," Julius Faulwasser observed, "and I am convinced that its outcome for my dear Hamburg will be of the most positive kind, for trade and commerce as well as for fire prevention and the health and joviality of business life."⁵⁵ In 1848, an English observer described the impact of the fire as follows: "The great fire of 1842 (that destroyer and decorator of towns) swept away a vast mass of rubbish, and see what splendid edifices have sprung from its ash."⁵⁶ In terms of urban planning, transport, and sanitation, the town center became one of the most modern urban centers in the world within a short period of time.

New construction projects in the burned-down areas were subject to special fire codes, such as a complete ban on half-timbered buildings. "Fireproofing" became an important paradigm over the ensuing decades. Initially, the new building regulations applied only to the site of the fire, where they prohibited

the use of timber building components and masonry walls and required that buildings be placed with their gables facing the street.⁵⁷ Other innovations followed: a system of house numbering was introduced in 1843, still in use today, in which the left and right sides of the street received even and odd numbers, respectively; and street lighting was modernized by converting to gas.

The fire also gave rise to much greater state intervention in the construction and housing sector, although building regulations in subsequent decades were chiefly concerned with aspects of fire safety.⁵⁸ Change, however, was slow to come as the senate and the state parliament were frequently at odds with one another over questions of building laws: the senate represented a more progressive element in pressing for science-based regulation, whereas the state parliament adopted a more conservative stance. In the end, it took the technical commission twenty-three years of “consultations” to draft the building regulation laws and they were only finally implemented in 1865.

The fire became a catalyst for change in Hamburg. Not only did Hamburg see the fire as an opportunity to transform old, obsolete buildings, but it also presented the city with a chance to redevelop and modernize congested districts by increasing the distance between buildings, decreasing demographic densities, and realigning, widening, and paving the roads.⁵⁹ But there were also social changes. In the years following the fire, the housing shortage in Hamburg worsened and rents rose. The closing of the town gates, combined with inadequate and expensive transportation, meant that most workers preferred to live near their place of work, that is, close to the harbor.⁶⁰ As a result, they were forced to rent perhaps more commodious but certainly more expensive flats than those that had existed previously mainly in back courtyards and alleyways.⁶¹ On the other hand, the spatial specialization of the city according to function accelerated as commerce and industry moved to the periphery of the city and public buildings and attractive housing were erected in new areas.

The pace of rebuilding was impressive. By the autumn of 1842, no fewer than 100 houses were under construction. At the end of 1843, there were 190 newly occupied homes, another 204 permissions to build had been issued, and construction of an additional 44 properties had commenced. Some of this rebuilding, however, was of questionable quality. Hamburg’s most senior building officer, Franz Andreas Meyer, wrote:

What was lost in lateral extension was gained in height. While before the fire . . . often several families lived together, but subdivided floors were only for the poorer classes in so-called *Sahlwohnungen* (shared accommodation), one now built generally higher blocks of flats. . . . The restoration of flats destroyed in the



Figure 10.7. New buildings at Alter Jungfernstieg. (Lithograph by Charles Fuchs, 1846/47. Reproduced from Evi Jung-Köhler, *Verlust und Chance, Hamburg 1842: Stadtmodernisierung beim Wiederaufbau nach dem Großen Brand* [Hamburg: Verein für Hamburgische Geschichte, 1991], 142.)

fire was conducted in great haste, often leaving insufficient time for technical considerations. The architects did not always know how to lay out the floor plans in a way that not only satisfied the owners' wishes to accommodate the greatest number of rentable rooms but also provided the necessary amounts of air and light. The artistic design of the building received even less attention.⁶²

Much of the “new” architecture reflected more materialistic values. Construction methods were designed “to fetch much rent with little means”; these new structures were “ordinary speculation frenzy houses,” as one contemporary observed.⁶³ More recently, Gerhard Ahrens explained that “in place of the well-built houses laid out for single families, [there were] straight roads with barrack-like boxes of story upon story in which, instead of families, groups of people lived as strangers, piled up on top of one another.”⁶⁴

Despite this sacrifice of certain social and aesthetic considerations, large fires in cities like Hamburg decreased during the nineteenth century as bricks, concrete, and steel were used as construction materials, and the minimum distance between buildings was increased. The “brickification” of urban areas was also underway in other western European cities. Along with improvements to building design and materials, firefighting was made more effective through the reorganization and professionalization of fire brigades.⁶⁵

As for the 1842 fire in Hamburg, its course and the psychological experience of the catastrophe were reflected in memoirs, narratives, poems, songs, leaflets,

and picture prints. Photography had been recently invented and daguerreotypes provided new images depicting a landscape of ruins. Heinrich Heine wrote two weeks after the fire: "Through moral renaissance, perhaps abundant benefit will be acquired from the disaster itself."⁶⁶ Indeed the mix of melancholy, sorrow, and loss expressed in the *Brandliteratur* (fire literature) was soon replaced by the hope for a better future in a new and renovated Hamburg.

While the responsible institutions in Hamburg had reacted hesitantly and inappropriately to the situation on occasion, the Great Fire of 1842 enabled the comprehensive reorganization of the burned-down areas of the city. These improvements to fire-protection regulations and sanitation and water supply, however, only applied to the destroyed parts of the city. Discourses of modernization and of the triumph over backwardness may have dominated the public forum, but urgently needed improvements such as urban sanitation were not implemented in the whole of the city. This omission led to further problems in later years, such as an outbreak of cholera in the city that resulted in more than eight thousand deaths. In a sense, though, such limitations only prove how important a major fire can be as a catalyst of change. The capacity of the Hamburg senate and city parliament to act immediately in the aftermath of 1842 was clearly demonstrated: the government carried out large-scale dispossession, gave rapid consensual compensation, passed reconstruction plans, and commenced rebuilding without delay. Nonetheless, soon after the fire, the sedate, traditional structures with their cumbersome and time-consuming legislative procedures were back in place without affecting the basic balance of economic and political power. Trade interests dominated, and once again a small minority with an amateurish understanding of politics ruled Hamburg. Evidently, there is a limit to the extent of change that fire can effect.

NOTES

1. Fires related to war damage and earthquakes are not considered here. For a comparative perspective on the typology of catastrophes, see Lawrence J. Vale and Thomas J. Campanella, eds., *The Resilient City: How Modern Cities Recover from Disaster* (New York: Oxford University Press, 2005), 6.

2. Ulrich Beck, *Weltrisikogesellschaft: Auf der Suche nach der verlorenen Sicherheit* (Frankfurt am Main: Suhrkamp, 2007), 242. Translations are mine unless otherwise noted.

3. See, for example, Christine Meisner Rosen, *The Limits of Power: Great Fires and the Process of City Growth in America* (Cambridge: Cambridge University Press, 1986).

4. Vale and Campanella, *Resilient City*, 336. See also Gerrit Jasper Schenk, "Historical Disaster Research: State of Research, Concepts, Methods and Case Studies," *Historical Social Research* 32 (2007): 9; Dieter Schott, "Stadt und Katastrophe," *Informationen zur modernen*

Stadtgeschichte 1 (2003): 5; and Dieter Schott, "Forschungsbericht: Die Rolle von Katastrophen in der (Stadt-)Geschichte," *Informationen zur modernen Stadtgeschichte* 1 (2003): 39.

5. Much material can be found in the Hamburg Archive (Staatsarchiv Hamburg) under 323-1 (Rat- und Bürgerdeputation von 1842). The bibliography by Joseph Heckscher (1903) identifies the *Brandliteratur* ("fire literature") on the Great Fire of Hamburg of 1842 as a complete field. His bibliography comprises approximately 150 pages including an addendum from 1908 of 30 and another addendum of 40 pages. The bibliography is structured as follows: description of the volume, novels, novelettes, youth literature, cartoons, poetic writings, sermons and theological writing, firefighting and fire insurance, construction, benefits and assistance, Hamburg's gratitude, commemoration days, places of interest, newspapers and magazines. Joseph Heckscher, "Die Literatur des großen Brandes in Hamburg vom 5. bis 8. Mai 1842," *Zeitschrift des Vereins für Hamburgische Geschichte* 11 (1903): 25–179. See also Joseph Heckscher, "Nachtrag und Ergänzungen: Die Literatur des großen Brandes in Hamburg vom 5. bis 8. Mai 1842; Ein bibliographischer Versuch," *Zeitschrift des Vereins für Hamburgische Geschichte* 12 (1908): 65–497.

6. Franz Heinrich Neddermeyer, *Topographie der Freien und Hansestadt Hamburg* (Hamburg: Hoffmann & Campe, 1832).

7. Dirk Schubert, *Stadterneuerung in London und Hamburg: Eine Stadtbaugeschichte zwischen Modernisierung und Disziplinierung* (Braunschweig: Vieweg, 1997), 66.

8. Jürgen Bolland, *Senat und Bürgerschaft: Über das Verhältnis zwischen Bürger und Stadtregiment in alten Hamburg* (Hamburg: Hans Christian, 1977), 65.

9. Heinrich Laufenberg, *Geschichte der Arbeiterbewegung in Hamburg, Altona und Umgebung*, vol. 1 (Hamburg: Auer, 1911), 82.

10. See also Susan Donahue Kuretsky's article "Jan van der Heyden and the Origins of Modern Firefighting: Art and Technology in Seventeenth-Century Amsterdam," in this volume. Van der Heyden's invention of mobile syringes with pumps was known and used in Hamburg.

11. Julius Faulwasser, *Der große Brand und der Wiederaufbau von Hamburg* (Hamburg: O. Meissner, 1892), 4.

12. Dirk Siebers, "Der 'Große Hamburger Brand von 1842' und seine Auswirkungen aus technikgeschichtlicher Sicht," in *Hamburgs Geschichte einmal anders: Entwicklung der Naturwissenschaften, Medizin und Technik*, ed. Gudrun Wolfschmidt, Nuncius Hamburgensis: Beiträge zur Geschichte der Naturwissenschaften 2 (Hamburg: Books on Demand, 2007), 340.

13. The "Wasserkünste" (water arts) were private companies that pumped water from the Alster or from wells into depots at higher levels to then distribute it through pipes to their customers. Alfred Meng, *Geschichte der Hamburger Wasserversorgung* (Norderstedt bei Hamburg: Books on Demand, 1993), 24.

14. *Ibid.*, 16.

15. Quoted in Evi Jung-Köhler, *Verlust und Chance, Hamburg 1842: Stadtmodernisierung beim Wiederaufbau nach dem Großen Brand* (Hamburg: Verein für Hamburgische Geschichte, 1991), 7.

16. Tradition held that the city councilors should not adjourn until the fire was under control. See Kulturbehörde Hamburg, Denkmalschutzamt, Museumspädagogischer Dienst, *Wasser für Hamburg: Zur Geschichte der Hamburger Wasserversorgung und -entsorgung* (Hamburg: Dölling & Galitz, 1992).

17. Later defamations (also of W. Lindley) that the fire had been laid by Englishmen may be connected to this.

18. Kulturbehörde Hamburg, Denkmalschutzamt, Museumspädagogischer Dienst, *Wasser für Hamburg*, 30.

19. Gerhard Ahrens, "May 1842 Hamburg an der Schwelle zur Moderne," *Zeitschrift des Vereins für Hamburgische Geschichte* 79 (1993): 99.

20. Faulwasser, *Der große Brand*, 22.

21. The Association of Property Owners argued against the low-rent relief housing built with public subsidies as house and landlords saw their existence endangered. Renate Hauschildt-Thiessen, *150 Jahre Grundeigentümer-Verein in Hamburg von 1832 e.V.: Ein Beitrag zur Geschichte der Freien und Hansestadt Hamburg* (Hamburg: Grundeigentümer-Verein, 1982), 50.

22. Museum für Hamburgische Geschichte, *Es brannte an allen Ecken zugleich*, ed. Claudia Horbas and Ortwin Pelc (Heide: Boyens, 2003), 21.

23. Julius Faulwasser listed in detail the (personal) donations of the rulers and gifts from three continents. Faulwasser, *Der große Brand*, 28.

24. Here the expropriation law of 1839, drawn up for the construction of the Hamburg-Bergedorf railway, served as an example. The Association of Property Owners called it a "dangerous law." The commission responsible for compensations generally made deals that did not give the former owners cause to complain.

25. Carl Friedrich Reichardt, *Einige Worte über die Wahl des Plans zum Wiederaufbau Hamburgs* (Hamburg: Nestler & Melle, 1842), 3.

26. Hauschildt-Thiessen, *150 Jahre Grundeigentümer-Verein*, 45.

27. "The Great Fire . . . forced concurrent action on all things that usually would have been done bit by bit over decades." Fritz Schumacher, *Wie das Kunstwerk Hamburg nach dem großen Brande entstand: Ein Beitrag zur Geschichte des Städtebaus* (Hamburg: Hans Christians, 1969), 1.

28. William Lindley came to Hamburg in 1839 on the recommendation of Alexis de Chateaufeuf to build the railway line from Hamburg to Bergedorf. Chateaufeuf in turn designed the station buildings. Günther Lange, *Alexis de Chateaufeuf: Ein Hamburger Baumeister (1799–1853)* (Hamburg: Weltarchiv, 1965); see also David Klemm and Hartmut Frank, eds., *Alexis de Chateaufeuf 1799–1853: Architekt in Hamburg, London und Oslo* (Hamburg: Dölling & Galitz, 2000).

29. The reasons for Reichardt's dismissal from the technical commission can no longer be ascertained. See Jung-Köhler, *Verlust und Chance*, 134.

30. Jung-Köhler, *Verlust und Chance*, 80. Lindley was not a member of the commission and did not attend any of their 121 meetings.

31. Carl Friedrich Reichardt (*Einige Worte*, 23) went as far as insinuating that the plans were drafted "with intentional inaccuracy."

32. *Ibid.*, 60.
33. Paragraph 1 of the expropriation law states: “All properties affected by or located in the area of the fire of May 5 to 8 are subject to the authority of the state in respect to partial or total expropriation. The decision on whether and to what degree expropriation is necessary remains with the council and the citizens’ commission.” Quoted in Hans Speckter, *Der Wiederaufbau Hamburgs nach dem großen Brande von 1842: Vorbild und Mahnung für die heutige Zeit* (Hamburg: Boysen & Maasch, 1952), 47.
34. *Ibid.*, 31.
35. Reichardt, *Einige Worte*, 14.
36. Faulwasser, *Der große Brand*, 77.
37. Fritz Schumacher, *Carl Friedrich Reichardt: Ein Pionier des Städtebaues* (Hamburg: Hans Christian, 1964), 39.
38. Carl Friedrich Reichardt, *Hamburg’s Staatsbauwesen in seinen gegenwärtigen Zuständen* (Hamburg: Otto Meißner, 1857), 15.
39. *Ibid.*, 25. In his writings Reichardt refers to Lindley as “Herr L.” Reichardt’s publication can also be read as an “anti-Lindley text,” where all of Lindley’s achievements are defamed and doubted.
40. Ewer (flat-bottomed sailing barges) shipped rubble from the fire to the marshes at Kehdingen, up to one hundred kilometers away, and returned with bricks. Siebers, “Der ‘Große Hamburger Brand,’” 346.
41. Reichardt, *Einige Worte*, 21.
42. Otto Ewich, *Städtereinigung und Wasserversorgung: Eine Warnung vor englischen Zuständen* (Bonn, 1871), 14.
43. Alfred Meng, *Geschichte der Hamburger Wasserversorgung* (Hamburg: Medien-Verlag Schubert, 1993), 16.
44. John von Simson, *Kanalisation und Städtehygiene im 19. Jahrhundert* (Düsseldorf: VDI, 1983), 63.
45. Schubert, *Stadterneuerung*, 98.
46. Johannes Spallek, “Alexis de Chateaufeuf und William Lindley: Ihre gemeinsam errichteten Bauwerke” (PhD diss., University of Hamburg, 1978), 120.
47. Gustav H. Leo, *William Lindley: Ein Pionier der technischen Hygiene* (Hamburg: Arbeitsausschuss der Hamburgischen Bauwirtschaft, 1969), 84. For the connections between Lindley and Edwin Chadwick, see Dirk Schubert, “William Lindley und London, das ‘riesenmäßige Stadtungeheuer an der Themse’ im 19. Jahrhundert,” in *Konstrukteur der modernen Stadt: William Lindley in Hamburg und Europa 1808–1900*, ed. Otwin Pelc and Susanne Grötz (Munich: Dölling & Galitz, 2008).
48. Volker Roscher, “Die Einführung der Kanalisation in Hamburg und der Neubau der Stadt 1842/43,” *Die alte Stadt* 3 (1993): 229.
49. Anne Petersen, *Die Engländer in Hamburg 1814 bis 1914: Ein Beitrag zur Hamburgischen Geschichte* (Hamburg: Von Bockel, 1993), 133.
50. Schubert, *Stadterneuerung*, 105.
51. Joachim Heinrich, “William Lindley—Hamburger Stadtplaner,” in *Der blaue Tod: Die Cholera in Hamburg, 1892*, ed. Antje Kelm (Hamburg: Museumspädagogischer

Dienst, 1992), 69; see also Richard J. Evans, *Tod in Hamburg: Stadt, Gesellschaft und Politik in den Cholera-Jahren 1830–1910* (Reinbek bei Hamburg: Rowohlt, 1990).

52. Charles F. T. Young, *Fires, Fire Engines and Fire Brigades* (London: Lockwood, 1866), 479. The author thanks Amy S. Greenberg, also author in this volume, for this source.

53. Schumacher, *Wie das Kunstwerk Hamburg nach dem großen Brand entstand*, 10.

54. In the context of Beck's "reflexive modernization," this refers to the "side-effect theorem." Beck, *Weltrisikogesellschaft*, 10.

55. Faulwasser, *Der große Brand*, 69.

56. George Francklin Atkinson, *Pictures from the North in Pen and Pencil: Sketched during a Summer Ramble* (London: John Ollivier, 1848), 34.

57. Wilhelm Melhop, *Alt-Hamburgische Bauweise: Kurze geschichtliche Entwicklung der Baustile in Hamburg* (Hamburg: Boysen & Maasch, 1925), 208.

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59. Thomas Spohn, "Der Stadtbrand als Chance," in *Feuer! Stadtbrand in Westfalen*, ed. Peter Höher (Münster: Westfälisches Museumsamt, 1991), 56.

60. Hans-Jürgen Nörnberg and Dirk Schubert, *Massenwohnungsbau in Hamburg: Materialien zur Entstehung und Veränderung Hamburger Arbeiterwohnungen und -siedlungen 1800–1967* (Berlin: Verlag für das Studium der Arbeiterbewegung, 1975), 61.

61. Antje Kraus, *Die Unterschichten Hamburgs in der ersten Hälfte des 19. Jahrhunderts* (Stuttgart: Gustav Fischer, 1965), 70.

62. Hamburg, *Historisch-topographische und baugeschichtliche Mittheilungen, den Mitgliedern der XV. Versammlung deutscher Architekten und Ingenieure dargebracht von dem architectonischen Vereine* (1868; repr. Hamburg: Hansa, 1979), 145–46.

63. Hauschildt-Thiessen, *150 Jahre Grundeigentümer-Verein*, 48.

64. Ahrens, "May 1842 Hamburg," 97.

65. Johan Goudsblom, *Feuer und Zivilisation* (Frankfurt am Main: Suhrkamp, 1995), 226.

66. Ahrens, "May 1842 Hamburg," 95.

Did the Fire Insurance Industry Help Reduce Urban Fires in the United States in the Nineteenth Century?

SARA E. WERMIEL

In the rebuilding of cities following disasters such as sweeping fires, the physical layout of a place, or the manner of constructing individual buildings, might change in order to avoid a recurrence. But in the United States in the nineteenth century, property owners rarely made such changes voluntarily. They were particularly reluctant to abandon traditional methods of building construction, even when a conflagration exposed the weaknesses of these methods. Owners preferred to rebuild using familiar materials and assemblies and shunned novel alternatives designed to make buildings more fire resistive, especially when—as was usually the case—the new technologies increased construction costs. Nevertheless, around the turn of the twentieth century, an increasing number of buildings erected in city centers incorporated new protective technologies. Over time, fire-resistive buildings replaced old, combustible ones. As a consequence, the frequency of urban conflagrations declined. What caused owners to adopt the fireproof materials and equipment?

It is commonly assumed that the fire insurance industry played a key role in encouraging safer construction. It seems logical that the industry whose business it was to compensate owners for losses from fires would want to prevent fires and thereby reduce these losses. But an exploration of how the stock fire insurance

industry operated in the nineteenth century reveals that it provided no incentives to owners to improve their buildings—either directly, by setting high standards and insuring only conforming properties, or incidentally, through discriminating rates. Stock fire insurance companies did not consider fire prevention their responsibility. Nevertheless, several developments in the late nineteenth and early twentieth centuries pressured the stock fire insurance industry to reform its practices. Eventually the industry did change and began to encourage fire-safe construction, which contributed to bringing an end to urban conflagrations in the United States.

Combustible Buildings and the Fire Insurance Industry

A noteworthy trend in American cities in the twentieth century was the decline in the number of sweeping fires. Large, destructive fires plagued settlements from colonial times through the nineteenth century, reaching a devastating peak in the first decade of the twentieth. But over the course of the twentieth century, and defying predictions, the number of conflagrations trended downward. Several factors contributed to this turnaround, but arguably the most consequential was that combustible, unprotected buildings were replaced with fire-resistive ones. A fire-resistive building is one that can withstand a fire from the outside and contain a fire that starts inside. Fire-resistive materials and assemblies, as well as sprinklers, were available during the nineteenth century, but owners rarely used them, mainly because they increased the cost of construction. What finally induced property owners to pay the higher cost of putting up fire-resistive buildings?

A popular explanation is that fire insurance companies pushed owners to make their buildings safer. The companies accomplished this, so the story goes, by charging more to insure hazardous buildings; and to save insurance expenses, owners improved their buildings. L. E. Frost and E. L. Jones expressed this idea in their article on trends in urban fires in Western cities in the nineteenth century. They wrote that the decline in fire damage in English and US cities resulted from the greater use of noncombustible building materials. Owners adopted these materials as their incomes rose, encouraged by “discriminatory insurance premiums, charging ‘double for timber.’”¹ In this view, the simple operation of the fire insurance industry, with rates that increased along with hazard, induced owners to opt for less combustible materials.

While “double for timber” sounds consequential, one must ask, what would the financial impact have been? Was the difference large enough to influence

an owner's decision about how to build? For example, what would have "doubled" was a *rate* charged on the insured value of a property, not the premium. (A rate is the amount charged for insuring one hundred dollars of value per year and is expressed as a percentage—a 1 percent rate is one dollar; the rate multiplied by the amount of insurance on a property is called a premium.)² Timber buildings generally were less valuable than masonry ones. So, a 2 percent rate on five hundred dollars of insurance on a timber building yielded the same premium (ten dollars) as a 1 percent rate on one thousand dollars on a brick building. In this case, the owner paid the same premium for wood or brick, so insurance cost would not affect his decision about how to build. Moreover, underwriters did not set rates so as to influence these decisions.

And this was the problem for many nineteenth-century critics of the stock fire insurance industry. They complained that the rates that insurance companies charged were arbitrary and did not accurately reflect a building's potential hazard. Rates were too high on good risks (buildings) and too low on bad ones. Not only was this pricing unjust, but it encouraged bad construction, which imperiled the community. This 1889 quote from the editors of *American Architect* is representative:

The underwriters are perfectly aware of the fact that it is only by charging immoderately high rates on the good risks that they can meet competitive prices on the bad ones; so, instead of trying to encourage substantial building by reducing premiums on safe structures . . . [they have kept] rates on good buildings so high, in proportion to those charged for bad ones, that there was no financial advantage in building solid structures. At the same time . . . they endeavored to make up for the lack of financial inducement . . . by pretending an immense moral zeal for sound construction and, every time a fire occurred, by belaboring the architects, and moaning over the recklessness of mankind, and so on, to the disgust of all persons who knew enough about building investments to understand the comedy.³

And indeed, fire insurance companies did not deny the charge that they did nothing to create safer buildings: improving buildings was not their responsibility. According to an insurance writer, "Representatives of fire insurance are on record as asserting that fire losses were not their affair. Losses advertised the need of insurance and the insurance business meant the collection of enough premiums to pay the losses."⁴ In other words, as long as the companies could collect enough in premiums to cover losses from fires as well as their operating expenses, with some left over for dividends and reserves, it did not matter what buildings were like or that they burned down.

But companies could not always collect enough premiums. The industry was very volatile. Reformers in and outside the industry, on one side, and traditional underwriters, on the other, had different views about what ailed the business and how to stabilize it.

The US Stock Fire Insurance Industry before the 1890s

There are various kinds of fire insurance companies (stock, mutual, Lloyds-type), and in the United States, the stock fire insurance companies did the bulk of the insurance business. Also, stock companies insured the commercial properties in city centers, so their business practices affected the overall fire safety of these centers. Stock fire insurance companies are owned by investors, whereas mutuals, the other main type, are in theory owned by the insureds.

Of all the factors that shaped the fire insurance industry in the United States in the nineteenth century, three stand out. First, it was highly competitive; second, most fire insurance companies insured against fire exclusively; and third, fire insurance policies were usually annual. What helped make the business so competitive was the low barrier to entry: no expensive machines, raw materials, licenses, or even special knowledge were required to set up an insurance company. Not only were there local and national firms, but foreign firms also did business in the United States.⁵ Moreover, the industry was relatively unconcentrated. While the life insurance industry was dominated by just three companies at the end of the century, the ten largest fire insurance firms in the 1890s took in only about a quarter of all income.⁶ Second, because most fire insurance companies sold only fire insurance policies and were not diversified, their fortunes rose and fell with fires.⁷ To most underwriters of the time, single building fires were good advertising because they reminded owners of the need to buy insurance. Encouraging owners to put up fireproof buildings would have been like committing business suicide. Third, because policies typically were annual or at least relatively short term, fire insurance companies did not accumulate vast income-producing assets like the large life insurance companies did. Thus, fire insurance companies were numerous, buffeted by competition, limited in their means to make money (by only insuring against fire), and they operated in most cases with thin reserves.

The key to business success was setting rates that met the competition while yielding sufficient income. This could have been accomplished with flat rates (say, 1 percent per one hundred dollars on every building), but rather than

doing this, underwriters varied rates according to their notions of how likely a property was to suffer a loss. This had been the practice since the inception of fire insurance in the English-speaking world, following the Great Fire of London in 1666. At first, although companies had no information on which to make distinctions, they classified buildings according to the exterior construction materials and charged higher rates for wooden than for masonry buildings. But how they decided what *amount* to charge for each class (should wood be 1 percent? 2 percent?) is unknown.⁸

Determining which features posed hazards, and then the proper charges for each, became a growing problem in the nineteenth century, as new kinds of occupancies, building materials, and exposures came into being. Some buildings contained new technology, like central heating, elevator shafts, and electricity, which introduced new hazards. Others had new fire-resistive features, such as noncombustible frames and floors, or sprinklers, which made them less hazardous. Moreover, the urban environment became more diverse. Unlike houses in residential districts, which tended to be similar to one another and could be grouped in a broad class for rating, mercantile buildings in city centers varied in many ways and stood in unique settings, so that each was practically its own separate class. To analyze hazard, insurance companies would have had to collect and compile detailed information on buildings' characteristics and loss histories. But the time and trouble involved in doing this made it prohibitive. As one insurance writer expressed it, "The technical difficulties of estimating fire hazard, the diversity of risks, and the almost inevitable destruction of the evidence of the cause of loss [following a fire] have combined to complicate the solution [to analyzing hazard]."⁹

Once underwriters determined which features mattered, they had to figure out what to charge for them. Again, commercial and industrial properties were so varied that even a large company was unlikely to insure enough similar ones to be able to figure a reliable average from its loss experience alone. A solution to the problem of limited information would have been for companies to pool their loss data and figure averages on this more comprehensive base. But underwriters refused to share information for fear of revealing profitable market segments to their competitors.

Rather, through most of the nineteenth century, underwriters avoided the problems: they grouped buildings into a few classes and made few distinctions among buildings within a class. As for how much to charge for classes and specific features, this was done by "judgment" and competition. Rating schemes from the mid-nineteenth century illustrate these practices. In the late 1840s, a group of East Coast insurance companies proposed to charge Type 1 buildings (brick,

without wood shingle roofs) .30/\$100 and Type 2 buildings (wood) .50/\$100. Within the classes, only a few features triggered higher rates, for example, wood roof shingles or lack of a lightning rod. In other words, rates did not vary much. In 1852, Philadelphia underwriters adopted a rate list that called for charging wood buildings about twice the rate for masonry buildings. But within the category of masonry buildings, there was little difference in rates for first-, second-, and third-class buildings: 40, 45, and 50 cents/\$100 coverage, respectively. Even features that might seem to be especially hazardous, such as great height and floor area, added only five and ten cents to the base rate.¹⁰ Given the small differences, it seems unlikely that they would have dissuaded an owner from, say, adding a fifth or sixth floor, or fully covering a large lot, if that was his inclination.

Reformers criticized the practice of making broad categories and few distinctions within categories. As one wrote in his 1866 textbook on fire insurance, “The practice of horizontalizing rates—that is, to charge the same, or about the same, rate on all buildings constructed in the same material (brick, for instance)—is as absurd as it is general.”¹¹ But this classification system, along with using judgment to set the prices of features, endured, probably because it was cheap to administer. Companies did join together on a few occasions before the 1860s to discuss rates, but even when collaborating, they based the rates they proposed on judgment or public records.¹² As long as the rates produced sufficient income, the companies stayed in business. However, these rates gave owners no incentive to improve their buildings.

While industry critics complained about rate-setting practices, fire underwriters had different ideas about what troubled their industry. To them, the problems were competition and conflagrations. Because of the low threshold to entry, fire insurance companies came and went. A few years of low losses and high profits in the industry drew in new companies, which attracted customers by charging low rates or hiking commissions to the agents and brokers that most companies used to sell policies. This would set off rate wars and raise expenses for companies, which felt obliged to match commissions.¹³ Figure 11.1 illustrates this pattern. The line shows total premium income relative to total losses for ten years at the end of the nineteenth century. When losses were high relative to premiums, as in the period 1891 to 1895, the number of stock fire insurance companies fell. In the following few years, when premium income grew relative to losses, the number of companies increased. This figure also shows that mutual companies gained ground in periods when stock fire insurance companies declined.

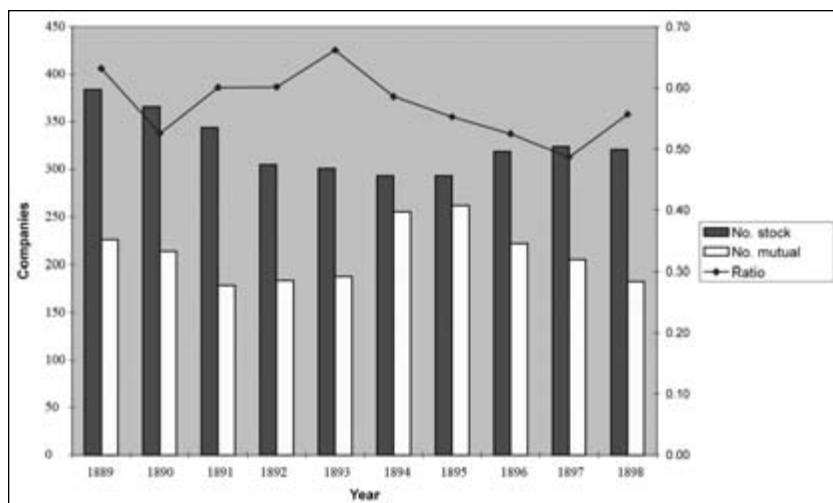


Figure 11.1. Fire insurance companies and the ratio of premiums to losses paid from 1889 to 1898. (“Fire Insurance Statistics,” in *The World Almanac* [excludes town and county mutuals], compiled from the Spectator Co., *The Insurance Year Book*.)

What usually was responsible for the high-loss years was not a large number of individual building fires but conflagrations—the industry’s other big headache. Great conflagrations usually crippled or wiped out many fire insurance companies. An 1835 conflagration in New York City left all but two of the forty insurance companies doing business there deeply in debt; twenty-eight of these eventually closed. The 1871 fire in Chicago caused the failure of every stock fire insurance company based in Illinois. While insurance companies could plan for ordinary fires, conflagrations were another matter. They were simply not predictable. Practically no one imagined that Boston’s commercial center, with its granite and brick buildings, would suffer a conflagration, but in 1872, it did. In the early twentieth century, underwriters expected a devastating fire to strike congested Lower Manhattan, but it never happened.

Companies took steps to avoid ruin from extensive fires by distributing their business geographically (not having too many customers in one place) and limiting the amount of insurance they took on any single risk, and they tried to accumulate reserves to cover losses in bad years. To dampen competition and thereby maintain stable rates over time, they attempted to enter into price-fixing agreements—a solution favored by the large companies. In 1866, after a period of heavy losses, stock companies formed a national trade association,

the National Board of Fire Underwriters (NBFU). One of its purposes was “to establish and maintain, as far as practicable, a system of uniform rates of premium nationwide.”¹⁴ And in the early 1870s, following the Chicago and Boston fires, the NBFU had some success in doing this. But by the end of that decade discipline broke down, and price competition resumed. At the same time, companies lobbied cities to invest in better water and firefighting services and also to adopt rudimentary building regulations (e.g., banning wooden buildings from the developed areas), in order to reduce the likelihood of conflagrations.

However, they did not work to improve buildings or adjust their rates to discourage bad construction. As long as notorious hazards, like wooden sidewalks, could be eliminated, and the public fire service was adequately equipped and capable of putting out fires before they got out of control, underwriters were content to insure buildings as they found them.

Pressure for Change

Several developments in the 1880s helped push the stock fire insurance industry to become involved with fire protection. One was an antitrust movement, which led states to enact what insurance companies considered adverse legislation that interfered with their operations. A second was the example of the factory mutual fire insurance companies, to which the stock companies were invidiously compared, and which some stock company underwriters warned could skim off the best customers. Another was the hazards of new technology and growing losses from conflagrations, which seemed to threaten the industry’s very existence.

This decade saw the beginnings of a populist antitrust movement that targeted certain industries. The Granger movement in Western farm states focused on railroads; Grangers sought public regulation of what they considered extortionate railroad freight rates. Many people in this region lumped insurance companies “with railroads and banks as part of an evil conspiracy for the exploitation of the western farmer.”¹⁵ A target of criticism was local underwriters’ associations, which sprouted up in this period. Called “boards,” “tariff associations,” “unions,” or “exchanges,” they were comprised of agents or other representatives of stock fire insurance companies who came together to set rates for a particular locale.¹⁶ Since it was usual for several companies to insure large and valuable buildings (a way each company reduced its risk), a board’s rates saved companies the trouble of independently determining a rate for the same building (fig. 11.2). The boards also tried to get members to use the proposed rates and thereby prevent price-cutting.

GENERAL TELEGRAPH NEWS

A MILLION-DOLLAR FIRE.

CHICAGO PUBLISHERS AND BOOKBINDERS THE SUFFERERS.

CHICAGO, May 26.—A fire occurred in a large brick and stone structure at the corner of Congress-street and Wabash-avenue early this morning. The loss will approximate fully \$1,000,000. Among the principal losers are the publishers Belford, Clarke & Co., and the large bookbinding firm of Donohue & Henneberry.

Following is a full list of the insurance on the principal losses:

Belford, Clarke & Co., publishers; loss about \$300,000; insurance: Fire Insurance Association, New-York Underwriters', Germania of New-York, Firemen's of New-York, North British, Boston Underwriters', Rhode Island, Scottish, Amazon, Fireman's of Boston, Exchange of New-York, Phoenix of Brooklyn, German-American, and Star \$2,500; Peoples' of New-Hampshire, Lancashire, Granite State, \$2,000 each; Mercantile of Boston, New-Orleans Insurance Association, Boatman's Insurance Company of North America, Rochester, German, German of Quincy, Mercantile of Cincinnati, Clinton, Royal, London and Lancashire, St. Paul, \$1,500 each; American of Boston, Sun of California, Birmingham, Glens Falls, Boylston, Washington of Cincinnati, Connecticut, German of Pittsburg, Jersey City, Neptune, London Assurance, \$1,000 each.

Donohue & Henneberry, printers and publishers; loss about \$250,000; insurance: Springfield, Commercial Union, Mobile Mutual, Reliance Mutual, Miami Valley; Globe of Cincinnati, Mutual of Philadelphia, Mount Holly, Factor, Home Mutual, Security, Home, Louisville Germania, Home of New-Orleans, Western of San Francisco, \$3,000 each; Citizens of New-York, Queen, \$2,500 each; Fire Company Association, Union of California, Commercial of California, City of London, Lion, Orient, Virginia, Niagara, Merchants and Manufacturers', Western of Cincinnati, East Tennessees, Mountain City, Capital City, Underwriters of Wheeling, Mutual of Philadelphia, \$2,000 each; California, Montauk, Detroit, Union of California, Boylston, Pennsylvania Fire, Reading, Neptune, London Assurance, Citizens of St. Louis, \$1,500 each; Western of Pittsburg, Niagara, Enterprise, Buffalo German, Prescott, Security, Fireman's Fund, State of Pennsylvania, Rollance, Fireman's, Rutgers of New-York, United Fireman's, Springfield, Lumbermen's, Enterprise, Merchants of New-York, Fireman's Fund, Fire Marine of Wheeling, \$1,000 each; Milwaukee Mechanics' Concordia, Citizens of Cincinnati, \$1,250 each; Knoxville, \$3,600; Alexandria, \$2,700; Missisipi Home, \$4,000; Patria Belgia, \$9,700; Lloyd's Fire Policy, \$10,000; Liague Fire and Marine, \$3,000; Les Assurances Belge, \$4,800; Dutch Underwriters', \$11,000.

Figure 11.2. Example of how insurance companies spread risk. Each company covered only a portion of the insurance required on valuable properties. These two Chicago properties were insured by dozens of domestic and foreign companies. It made sense for all companies that insured one building to agree on a rate for the building, and setting rates was something handled by local insurance exchanges. (*New York Times*, May 27, 1886, 2.)

But while underwriters considered the associations necessary collaboration, enabling the companies to operate efficiently and stay solvent, others viewed them as monopolies, intended to fix prices and guarantee excessive profits. Complaints about high insurance rates were rife, a common one being that rates were inequitable, meaning that one policyholder thought he was paying more for insurance than somebody else with a comparable or inferior property. The fire insurance industry came to be “the most relentlessly nagged industry in existence,” as one insurance writer lamented.¹⁷ Eastern homeowners as well as western farmers had grievances, and they got the attention of politicians.

State legislative action against the industry took the form of “anticompact” bills, which were versions of antitrust laws that dealt specifically with insurance companies. The laws forbade companies from “forming any combination or agreement for the purpose of regulating or fixing the price or premium to be paid for insuring property against loss or damage by fire.”¹⁸ Michigan lawmakers introduced the first anticomcompact bill in 1883; it failed, but bills introduced in Ohio and then New Hampshire passed in 1885. Two years later, Michigan enacted an anticomcompact law, and subsequently Kansas, Missouri, Nebraska, and Texas passed such laws. In the 1890s, many legislatures enacted anticomcompact laws or else antitrust laws that also applied to the fire insurance industry.¹⁹

Additional pressure on the industry came from a group of mutual fire insurance companies that insured factories, called the Associated Factory Mutual Fire Insurance Companies (AFM). Since mutual companies were owned by the insured rather than investors, they had incentives to minimize losses in order to reduce costs for members. The original company in the group, established in 1835, was started when one of its founders, Zachariah Allen, could not get a break in the cost of insuring his woolen mill, despite the fire protection equipment he had installed. The stock fire insurance companies of the time would not take account of his pumps and hoses when figuring a premium. The president of one fire insurance company dismissed Allen’s request with this explanation: “I can not go about to see all the mills insured by me, and attend to my business at the office, & an average must be made. The good mills must pay for the poor.”²⁰

A central feature of Allen’s company, Manufacturers Mutual Fire Insurance Company of Providence, Rhode Island, was that it *did* “go about to see all the mills” it insured. The company’s plan was to insure first-class textile mills (called preferred risks) and keep fire losses to a minimum, so as to reduce insurance costs for members. Over time, similar companies formed in New England. The AFM companies insured only mills (mainly textile mills) and associated properties (warehouses, tenements) and sold policies directly to owners rather than through agents, thereby avoiding both the cost of commissions and the potential incongruity of the interests between an independent agent and a company. They

won customers by charging lower premiums than the stock companies, and most years also returned to members some of the excess premiums.

Around the late 1870s, the factory mutuals' model changed subtly, from simply insuring preferred risks to becoming providers of loss-prevention services. The services included determining what sorts of construction, equipment, and other measures reduced fires and losses, and communicating this information to members. To this end, the companies supported an in-house research laboratory and also sponsored fire-prevention research at the Massachusetts Institute of Technology. An early example of AFM research was a study of lanterns, which were a cause of many factory fires; AFM worked with a manufacturer to create a safer lantern. In another study, less-flammable types of machine lubricants were identified.²¹ Most famously, AFM codified a less-costly form of fire-resistive construction called "slow-burning construction," to which factories insured by the AFM companies had to conform. Thus, in exchange for building and maintaining a safe manufacturing plant and complying with AFM's safety recommendations, members saved on insurance costs. But this was not the only benefit: well-built and well-maintained plants also helped owners safeguard their investments and businesses, the lives and limbs of their employees, and property in their communities.

In the 1880s, the AFM companies began to publicize their loss-prevention approach to the public. Their *business* was preventing loss by fire; they paid indemnity only for losses that could not be avoided. Edward Atkinson, the indefatigable president of the largest AFM company, became a high-profile spokesman for this business model. Through his writing and speeches, he spread the gospel of fire insurance as fire prevention, and the AFM organization gained national attention for its success in reducing fire loss. Businessmen in various industries (grain mills, lumberyards, hardware dealerships) formed mutual insurance companies based on the AFM model. In 1883, Atkinson proposed that owners of city commercial buildings, which the AFM companies did not insure, form mutual insurance companies and install protective devices like standpipes, roof hydrants, and automatic sprinklers, which would render conflagration "almost or quite impossible."²² The positive attention the AFM companies garnered alarmed the stock fire insurance companies. Stock fire insurance underwriters worried that the AFM companies might one day venture beyond the world of factories and compete with them to insure commercial buildings in cities.

A third pressure on the stock fire insurance companies was the constant change in building technology. When they were first introduced, electricity and elevators caused many fires. At the same time, fire safety equipment and features were being invented, for example, automatic sprinklers and ways to protect a

structural frame. What were the loss consequences of these technologies? Were the new skyscrapers fire hazards: would fire spread across upper stories of these buildings, far from the reach of firefighters' hose streams, and cause massive conflagrations? Or were fireproof skyscrapers, as some people asserted, the safest kinds of buildings? Underwriters were simply in the dark about the impacts.

Industry Response

Development of Schedule Rating in the 1890s

The fire insurance industry always had some reform-minded members who attempted, notably through the NBFU, to put ratemaking on a sound and defensible basis. The reformers also urged companies to work to reduce fire losses and share the resulting savings with customers. Their efforts yielded little; rather, it was external pressures that proved to be the powerful motivators for change.

Anticompetitive and antitrust agitation in the 1890s gave new urgency to the idea of devising an objective basis for rates; some sort of acceptable system was needed to convince the public that rates were neither arbitrary nor exorbitant. A satisfactory system was one in which rates were the same for comparable properties (to counter the charge of inequity and favoritism), and the process of developing them was transparent. Two ingredients were needed to achieve this: a classification scheme listing factors that affected how likely a building was to suffer a loss, and then sufficient data on losses, collected according to the scheme, so that appropriate charges could be made.

The industry first tackled the problem of developing a detailed classification scheme, called "schedule" or "specific" rating. This work was undertaken by a committee of the NBFU headed by Francis C. Moore, president of the Continental Insurance Company of New York and an underwriting genius of long experience. Between 1891 and 1893, the Universal Schedule Committee of the National Board, as it was known, met in subcommittees; corresponded with underwriters in the United States, Canada, and England; and held two conventions. Finally in 1893, it published its first schedule: the Universal Mercantile Schedule (UMS) for rating city buildings such as office buildings, stores, lofts, and warehouses.

This was the first attempt to analyze all ingredients of fire hazard for mercantile buildings and to make a schedule that could apply to any city in the United States. The approach was to define a "standard" building, which was more or less an ideal building from a safety standpoint, and then rate buildings, making additions and deductions, according to how they measured up to the standard. Effectively, it meant a property was rated more individually than it

would have been in the old, broad class system. The system required that properties be inspected, so companies had to employ inspectors and maintain records on properties. For this purpose, inspection bureaus sprang up, which worked for companies in a city or region.

The schedule was extremely detailed, with over one hundred construction features that entered into making a rate, to which were added nearly forty different features of fire appliances and more than one thousand possible occupancy hazards. Some commentators considered the level of detail excessive, but the committee believed it was necessary. Moore explained that the detail was intended to assure uniformity, since it was the variation in rates for similar properties “which so often produce[d] dissatisfaction on the part of owners and result[ed] in appeals for legislative interference with rating organizations.”²³ Many people praised the schedule for its analytical value. It was, according to an academic, after his review of contemporary fire insurance literature, “an oasis in the desert of fire insurance confusion.”²⁴ Underwriters’ groups in a number of cities quickly adopted the UMS. Before long, other schedule systems were introduced, notably the Dean Analytic Schedule and schedules for factories.

Through the schedules, insurance companies began to influence the fire safety of buildings. Although probably none of the schedules was applied exactly as published, all were effective in educating owners about the features of a building that mattered from a safety standpoint. Contemporaries praised schedule rating for its positive impacts: “The accurate measurement of the fire hazard by a system of schedule rating tends to reduce this [fire] loss, because it not only gives a credit in the charge for every improvement by the owner . . . , but it also induces him to take an interest in improving the general protection for the community.”²⁵ Many safety features were costly to incorporate, exceeding the savings in insurance premiums for installing them. Nevertheless, the prospect of a lower rate could nudge an owner to make an investment he was inclined to make anyway.

However, although the schedules provided a format that could be used to collect loss data from different companies, these data still were not collected. The rates for each item in the schedule continued to be set the old way, by judgment.

Compiling Loss Statistics

Although the stock fire insurance industry intended schedule rating to silence its critics, backers of anticompact laws were not mollified. In 1897, anticompact bills were introduced in fifteen states, and three were enacted; two years later,

bills were introduced in fourteen states, five of which became law. By 1900, sixteen states had these laws. In his 1903 textbook on fire insurance, F. C. Moore argued that efforts to prevent insurance companies from working together hampered reform: “cooperation,” he wrote, was vital in the fire insurance industry, “to ascertain cost; to ascertain and secure adequate rates for indemnity; to prevent fires and thus cheapen the cost of insurance.”²⁶ But many people continued to believe that the companies were improperly colluding to maintain high rates. Adding to the industry’s woes was the mushrooming number of investigations into industry practices by state legislatures. Beginning with Illinois in 1909 and continuing for several years, nine state legislatures held hearings on the fire insurance industry.

The most exhaustive of these was New York State’s, conducted in 1910–11 through a committee chaired by Edwin A. Merritt Jr. Its purpose was to investigate the industry’s “corruption and corrupt practices.” Surprisingly, after forty-two days of public hearings during about three months, 184 witnesses, 5,500 pages of oral evidence, and 1,500 pages of documentary evidence, the committee uncovered no corruption. On the contrary, it came to the conclusion that cooperation among insurance companies, which had produced schedule rating, was having positive effects:

The economic, even the sociological, effect of the application of schedule rating can scarcely be overstated. It is doubtless true that schedule rating is at present by far the most powerful agent in the inauguration of good building construction and in checking the appalling fire waste of the country. . . . Most new buildings of any importance . . . are planned with full consideration of the reduction in rate which various features of construction will command. It is not too much to say that to schedule rating is due, as much as any other one cause, the credit for improvements in modern construction.²⁷

If anything, the committee suggested, more cooperation was needed. The committee found that companies lacked accurate data for pricing various features, because they would not pool their loss experiences. Nevertheless, the committee urged the state to supervise the business to prevent anticonsumer collusion. It recommended, therefore, that as a condition for allowing local boards to set and maintain rates, companies be required to file schedules and rates with the state’s insurance department.

Soon after this, the NBFU set up a program to collect data for rate-setting. New York’s insurance superintendent jump-started this effort when he required every company to report its loss experience since 1900. Other states likewise

sought reports, which led the National Convention of Insurance Commissioners, representing state insurance departments, to push the NBFU to devise a uniform system for reporting these data for its members. In response, the NBFU created the Actuarial Bureau. Its task was to “collect, classify, tabulate, and *interpret* the entire experience of the fire-insurance companies upon their American business” in order “to establish the burning ratio, or fire cost, in every class of property.”²⁸ It developed a classification system for occupancies and causes of fires, approved by the Fire Marshals’ Association of North America, as well as standard forms for companies to use to report on each loss. In January 1915, the bureau went into operation. Since companies previously had all used their own data collection systems, the early days of the project involved working out the bugs and getting companies up to speed. At first, about 190 companies contributed data, including a large share of non-NBFU companies; by 1916, 236 companies were participating. In that year, the bureau received about 4,000 loss reports each day and expected to record about 1.25 million incidents for the year, once multiple reports for a single property were merged.²⁹

Compiling this vast amount of data was made practical, indeed possible, because of recently introduced tabulating machines. Punched-card tabulating machines had been introduced in 1890 and were first used in a large way for the 1890 US census. But it was not until after the turn of the century that businesses, like the Actuarial Bureau, began to adopt them. Bureau staff transferred information from the individual loss reports to cards, which were punched, filed by state, and periodically sorted, then counted on the tabulating machines. Coincidentally, two significant technological improvements were introduced around the time the bureau was established. In 1914, a method was perfected for keeping a running total of cards processed, followed the next year by the printing tabulator.³⁰ In addition to reporting loss statistics to the states, the NBFU finally was developing solid information for setting rates.

Stock Fire Insurance Industry Gets Fire-Protection Religion

The stock fire insurance industry also began to support fire prevention directly. The key programs included assisting fire prevention organizations—Underwriters’ Laboratories and the National Fire Protection Association—and drafting model building codes and standards.

Underwriters’ Laboratories began in Chicago, where William H. Merrill, a young electrician from Boston, set up a research laboratory to study the fire

hazard of electrical devices, with support from local underwriters' groups. At the time, in 1894, there were no consensus standards for products of the new electrical device manufacturing industry; various organizations issued their own rules. Merrill proposed to create standards and to test products for their conformance with them, as a way to distinguish the safe from the dangerous ones. This was similar to work done at AFM's testing laboratory, which he may have learned about during his time studying electrical engineering at the Massachusetts Institute of Technology and from a stint with the Boston Board of Fire Underwriters. Merrill incorporated his operation in Illinois in 1901 as a nonprofit called Underwriters' Laboratories Inc. (UL). The NBFU initially supported it with small grants and in 1903 increased its funding. UL grew and within a few years moved into a model fireproof building it had designed in Chicago.³¹

Underwriters' Laboratories established a unique role as a product-testing organization, serving its subscribers, private inventors and manufacturers, and the public. Its object was "to bring to the user the best obtainable opinion on the merits of appliances, devices, machines and materials in respect to life and fire hazards and accident prevention."³² UL tested products for its subscribers and also, for a fee, tested products for manufacturers. Its reports were sent to underwriters' organizations and inspection bureaus, offices of insurance companies, and some government offices. Its best known program was the Label Service, which involved placing the UL mark on products that conformed to standards and providing ongoing inspection of factory production and examination of samples bought on the market, to assure that the items continued to conform. If items did not meet the standards, UL suggested improvements. It helped reduce the number of unsafe electrical and other products in American buildings and consequently the number of fires and fire loss.

Another fire prevention activity of the industry was developing model codes and standards, for its own use and for adoption by government agencies. Some of this work was done through the National Fire Protection Association (NFPA), which was supported by the stock fire insurance industry. Like UL, the NFPA began because of a lack of standards for safety equipment—in this case, for fire sprinkler systems. In 1895, representatives of several eastern stock fire insurance companies, along with AFM and a sprinkler manufacturer, met to set common rules for installing sprinklers. Some members of this group continued to work on sprinkler issues, and in 1896, at a meeting in the offices of the NBFU, formed the NFPA. This was a nonprofit, membership organization established "to promote the science and improve the methods of fire protection and prevention." Interestingly, its membership was restricted to stock fire insurance

companies and their agents, although within a few years, it opened membership to fire protection and prevention organizations and to other businesses. The NBFU made the NFPA its code development arm and agreed to publish the standards developed by the NFPA as its own, and to refer questions about fire protection to the NFPA. The association became a principal venue for discussing and debating fire-safety matters. In the association's first ten years, NFPA committees issued standards on thirty-four topics, ranging from automatic sprinklers to gas and gasoline engines.³³ The standards and codes developed by the NFPA were adopted by many municipalities.

The New Dispensation

It is easy to imagine that fire insurers, as the parties who must pay for losses from fires, would be strong advocates of improving the fire resistance of buildings, but this was not the case in the United States through most of the nineteenth century. The way the stock fire insurance companies priced their product (charging similar rates for all buildings in broad categories) gave owners little incentive to improve the safety of their properties.

The forces that pushed the industry toward what was called "scientific underwriting" were largely external. They included ongoing legislative interference; invidious comparisons with, and the threat of competition from, the factory mutual fire insurance companies; and changing technology, which brought both new hazards and new safeguards into being and thus complicated setting rates.

Efforts to deal with these forces were spearheaded by the national trade association of the fire insurance industry, the National Board of Fire Underwriters. The NBFU established a committee to create rational rates, which produced the first detailed schedule for rating mercantile buildings—a key development in the history of the industry. In the early twentieth century, another committee of the NBFU began to collect loss reports and compile data, on the basis of which more accurate rates could be set. The NBFU also supported programs that dealt directly with fire prevention and fire protection: the testing work of Underwriters' Laboratories; codes and standards development; and public education activities of the National Fire Protection Association.

These changes did not usher in the millennium for consumers of fire insurance: for example, competition continued to be a problem, companies ignored the schedule rates when it was expedient to do so, and they overpaid agents, a cost ultimately borne by the consumer. Nevertheless, in city centers

combustible buildings gradually were replaced with more fire-resistant ones. Strong building codes, followed up by enforcement, were an important factor in this transformation. But the new support that the industry gave to improving building construction and safety equipment, through rates and fire-protection research and advocacy, were also important and lasting, and helped bring the era of conflagrations in American cities to an end.

NOTES

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Inflaming the Fears of Theatergoers

*How Fires Shaped the Public Sphere
in Buenos Aires, Argentina, 1880–1910*

KRISTEN MCCLEARY

On December 30, 2004, a concert in Buenos Aires, Argentina, by the rock group Callejeros had barely begun when pyrotechnics from its light show jumped from the stage to the walls and ceilings of the nightclub, República Cromañón. The fire quickly spread as flames spilled onto flammable materials of the club's construction, which released toxic gases. That night, Cromañón was also overcrowded and its emergency exits were blocked with other exits insufficient for allowing the rapid evacuation of audience members. As a result, this urban fire resulted in the death of 194 concertgoers, leaving a city to mourn its lost youth while devastated friends and relatives sought to understand the loss by assigning responsibility for the deaths to someone or some entity. Who should be responsible? Callejeros for using fire torches as part of its light show? The city government for inadequately inspecting and enforcing safety measures in the night club? The club's owner for neglecting to take care of fire prevention and allowing overcrowding to take place? Buenos Aires continues to wrestle with these questions as Cromañón has become a focal point for human rights and democratization issues since the tragic conflagration has been linked to political corruption and incompetence.¹

Cromañón was also particularly devastating and unexpected given Buenos

Aires's track record in avoiding such tragedies. However, the narratives that surround this twenty-first-century tragedy resonate with discourse on fire safety that consumed the city's modernizing administrators and safety-conscious public citizens from over one hundred years earlier. As Cromañón shows, the potential for entertainment venues to convert into "gas chambers," a term used to describe the horrors from that night, touches on a particularly urban fear: that citizens could partake in the benefits of urban living by assisting a cultural event, and that night could end with citizens suffering a form of death that is usually ascribed to one perpetrated by genocidal governments.²

This chapter examines the urban discourse surrounding issues of fire safety and fears of urban conflagrations in theaters in Buenos Aires between 1880 and 1910. This South American capital city closely followed European urban ideals and, as a result, was finely attuned to the aftermath of devastating theater fires that contemporaneously were occurring in Europe and the United States. Surprisingly reminiscent of the Cromañón situation, most theaters in Buenos Aires, and much of the West, contained all the elements to ignite a fire and foment tragic outcomes: They were largely made of wood, urban fire services were inefficient, and the massing of numerous people together in one building, with inefficient exits, promised that even the most innocuous of fires would result in great loss of life. During the era of pronounced attention to modernizing the city, the quest to ensure the city's theaters against the threat of fire takes on symbolic resonance, underscoring how Buenos Aires's urban officials linked their own material progress to that of Europe and sought to provide on this side of the Atlantic what had not been achieved on the other: fire prevention. Discourse around fire safety provides a unique window into the modernization process that the Argentine nation was experiencing during an era in which it was emerging, albeit temporarily, as one of the world's wealthiest nations. The desire of city administrators to transform the Argentine capital into a showcase heralding the nation's modernity, combined with an active city press and fire chief and the economic wherewithal to raze old and construct new buildings, ensured that the city enacted reforms that helped it avoid the type of tragedy that occurred one hundred years later—when these economic and social forces were no longer in alignment.

Background

Buenos Aires underwent massive demographic, economic, political, and cultural transformations between 1880 and 1910. Propelled by economic growth

that averaged about 5 percent annually, the city served as a magnet for immigrant labor to supplement a small national workforce.³ Between 1879 and 1914, almost six million people came to Argentina with a little more than half of them permanently settling. Up until about 1880, Buenos Aires had been described as a *gran aldea*, or large village, at which point the city began to adopt a new incarnation as an important urban center and took on the sobriquet the Paris of South America. The capital city brokered the newfound wealth from the countryside, largely consisting of wheat, sheep, and cattle exports, to local and international consumers. With limited opportunities to own small parcels of land in the countryside, the majority of immigrants settled in Buenos Aires, where, by 1910, three out of four members of the adult population were foreign born.⁴

Beginning in the 1880s, the urban elite, along with municipal and national politicians, sought to remodel the nation's capital after Baron von Haussmann's transformations of Paris, which stressed carving out green spaces and razing old parts of the city to accommodate wide diagonal avenues, modernizing public services such as sewer systems, and emphasizing Beaux Arts architecture. The Haussmannization of Buenos Aires was carried out most fully under the guidance of the federal capital's first mayor, Torcuato de Alvear, who held the post from 1880 until 1887.⁵ The Argentine ruling elite, like their contemporaneous Latin American counterparts, looked to propel their nation toward "progress" by following the primary philosophical legacies of the Enlightenment: positivism, social Darwinism, and economic and political liberalism. Domingo F. Sarmiento, writer and Argentine president from 1868 to 1874, distilled the general essence of these ideas into a Manichean view in which there was either civilization or barbarism: "The nineteenth century and the twelfth century coexist, the one in the cities; the other in the countryside."⁶

No other Latin American country has stressed the importance of cities for its cultural, social, and economic development to the degree that Argentina's turn-of-the-century elite did, primarily because they had the economic wherewithal to put utopian plans into action. As David Rock notes, Argentina had experienced almost twenty years of growth by 1914, "with a per capital income equaling that of German and higher than in Spain, Italy, Sweden, and Switzerland."⁷ The importance of the capital city had even greater symbolic value at the end of the nineteenth century since this coincided with the golden era of Argentina.⁸ Finally, political changes resulting in the 1880 decision to federalize the nation and establish Buenos Aires as the national capital resulted in a number of physical transformations, in an attempt to showcase the city as a hallmark of "progress" and "civilization." The issue of fire safety in theater buildings needs

to be understood within this larger context of modernization and the maintenance of public order and public safety in the city that symbolically was intended to showcase the country's development and sophistication based on western European models.

Regulating Theater Safety

The federalization of the city in 1880 was followed by a flurry of new municipal regulations as city administrators focused on preserving order in this rapidly growing capital. Theater was the predominant form of indoor urban entertainment at the time, and attendance rates increased along with the population of the capital city.⁹ In 1890, the number of people attending theaters had almost quintupled with 1,066,870 tickets being sold, resulting in a per capita attendance of 2.4 times per year.¹⁰ The number of theaters had only doubled during this four-year period, suggesting that theater space was being used more frequently, plays were shown in hourly "sections" so one theater might put on four or five in a day, and they were also being increasingly overcrowded.

Most theaters were joint stockholding companies located in the city's downtown theater district on Corrientes Avenue, the Broadway of Buenos Aires, or just adjacent to it. Buenos Aires was known then as the center of theatrical activity in Latin America.¹¹ In the 1880s and 1890s, zarzuela (Spanish light opera) troupes from Spain dominated popular theater performances.¹² Theater was always increasing in popularity, and Buenos Aires witnessed a surge in national cultural production after the passage of a 1910 copyright law that gave writers 10 percent of the theater box office receipts for each performance.¹³

No theater in Buenos Aires was exclusively popular or elite. Even the city's relatively exclusive opera house, the Teatro Colon, retained (and has retained even after its 2010 remodel) inexpensive seating so that entertainment there is accessible to all income levels.¹⁴ Theater genre also suggested patterns of social class attendance, with zarzuelas and national comedies, both performed in one-hour sections, drawing a largely working- and middle-class audience. Because the majority of the city's immigrant population were from Italy and Spain, the ability of the ethnic audiences to understand these two romance languages disallowed the flourishing of ethnic theaters (although some existed, notably Yiddish). Also, the perceived social capital of "elite" foreign-language performances fostered cross-linguistic audience attendance.¹⁵ As some of the largest indoor venues of the time, theaters were not used just for plays or movies

but also hosted a wide variety of events in the city, including carnival celebrations, political meetings, and festivities centering on the anniversaries of neighboring nations or those of immigrant homelands.¹⁶

The popularity of theaters and theatrical fare in the cultural milieu of late nineteenth- and early twentieth-century Buenos Aires cannot be overstated. Municipal officials were constantly trying to regulate and control crowds on streets overflowing with theater patrons, to limit the hours that plays ended to coincide with urban transportation and work schedules, and to end the flourishing business of reselling tickets, since this practice often resulted in chaos both inside and outside theater houses.¹⁷

One of the events that most promised to threaten *order* in late nineteenth-century capital cities was that of fire.¹⁸ Theaters in cities across the western world were sites of devastating losses of life and, subsequently, also of economic investments, during the nineteenth century.¹⁹ As *porteños* were sharply aware, European cities had experienced a number of devastating fires with great losses of life. For example, the theater of the Opéra-Comique of Paris had a fire on May 25, 1887, in which 120 people died; the Ring Theater in Vienna burned on December 9, 1881, killing over 400 people. Devastating theater fires also took place in Exeter, England, in 1887 (130 dead), at the Baquet Theater in Porto, Portugal, in 1888 (300), and at the Iroquois Theater in Chicago in 1903 (736).²⁰ This last fire was particularly tragic not only due to the high death rates but also because it occurred during a matinee performance when the audience included a large number of children. All these fires resulted in great losses of life since they occurred while performances were taking place. According to Buenos Aires fire chief José María Calaza, between 1777 and 1903, a period of 126 years, 8,000 people died in 382 theater fires.²¹

The Vienna Ring theater fire occurred at the beginning of Torcuato de Alvear's tenure and did much to spur theater inspections in Buenos Aires. But two additional and very well-publicized theater fires took place under his mayorship: Nice (1884) and Paris (1887), ensuring that theater fires would remain at the forefront of the city's collective conscience. After the destruction of the theater of the Opéra-Comique of Paris (coinciding with May 25, Argentine independence day), Calaza visited Paris to study the profile of the fire, which resulted in his first book-length study devoted to the causes and preventions of theater fires. Twenty-three years later, he published a three-volume study including the history and causes of global theater conflagrations, as well as maps and diagrams of Buenos Aires's twenty theater houses and their plans for evacuations, and instructions on how to best control fires, should they occur.²²

Fire safety had been a concern in Buenos Aires for at least thirty years, as the city began to embark on its path of modernization. Cobbled roads, limited communication networks, and unwieldy fire equipment prevented fire officials and volunteers from being able to adequately perform their duties once a blaze had begun. In the 1860s, for example, volunteer fire brigades walked the streets of Buenos Aires, toting heavy equipment with them as they moved in the general direction of the fire; the exact address of the fire could not be discerned because the city did not use a consistent numbering system. Lacking pressurized water, volunteer firefighters were quickly depleted of any energy they might have left as they passed buckets of water from hand to hand.²³ In 1871, the city organized a professional fire department in which nineteen officers oversaw two hundred paid firefighters, divided into seven fire districts.²⁴ Regulations directly relating to firefighters and theater houses went into effect only in the 1890s, when firefighters were required to be present during nightly performances. This apparently resulted in the rapid control of fires before they could cause much damage.²⁵

Theater Inspections

In late nineteenth-century Buenos Aires, almost all the public discourse about urban disorder as a result of uncontrollable conflagrations centered on theaters, due to tragic conflagrations in Europe, rather than on other prominent public spaces, such as department stores or churches, or on private residences. Clearly, theater carried great symbolic weight with the city's secular administrators. Immediately after the Ring Theater fire, Alvear ordered a series of in-depth inspections of city theaters. Seeking to elevate the profile of this undertaking and to combat past corruption related to theater inspections, he appointed high-profile figures as inspectors, including the city architect, Juan A. Buschiazzo, and Enrique Alberg, an architect from the National Department of Engineers. These inspectors presented a report to the mayor lamenting the sorry state of most of the eight theaters they had inspected: "We have already given the reports of the city architects on the Colon and Opera Theaters. To close the chapter we may say that we find the Politeama and Variedades but little better than the two more fashionable houses; the little Goldoni in Calle Rivadavia is a mere matchbox; the Alegria is simply a firecracker . . . and the Victoria still worse. In point of fact there is not a single theater in Buenos Aires that one can enter with even an average chance of coming out alive in case of the slightest panic."²⁶ The inspection reports enumerated many of the safety failures including lack of

sufficient exits and outwardly opening doors. The Colon, the city-owned theater, was found to be the one most in want of repairs.²⁷ In fact, fire safety was one of the primary reasons given for its closure in 1888.

Theater inspectors found that the safety curtain, commonly used in Europe (although clearly not to great success), did not exist in any of Buenos Aires's theaters. This curtain was seen as especially important because it could be lowered in case of emergencies to prevent flames from spreading from the stage to the audience or vice versa.²⁸ The first attempt to require that each theater in Buenos Aires install a metallic curtain took place in 1883, but it was so little heeded that the city council had to remind everyone of its existence in 1887. Indeed, there was great resistance on the part of theater managers to comply with city codes. In fact, the very nature of commercial and profit-oriented theater promoted overcrowding and the sidestepping of expensive requirements, like that of the safety screen, which had to be imported from Europe.²⁹ Inspectors frequently commented on finding that theaters would frequently add seating to accommodate more audience members. Often, this seating would block exits. After nearly a decade of inspections, the inspectors' 1889 report found that only two of the city's theaters had complied with safety regulations.³⁰

Despite the unsafe conditions posed by Buenos Aires's theaters, very few theater fires actually occurred. In his three-volume study of theaters, Calaza included a list of fires taking place in Buenos Aires, and only two were theater fires. The first claimed one victim and took place in Theater San Martín on September 3, 1891. The fire had started before the evening performance, originating near the stage when one of the workers was lighting gas lamps. The theater was sold out for the evening, and Calaza noted that if the fire had started an hour later, it would have resulted in many more casualties. Interestingly, Calaza notes that of the fifty audience members present, most were in the *paraíso* section, the inexpensive seats highest up in theaters, reserved for men. Probably, these men came to the theater directly from work, which saved both time and money. The one casualty, an actor, had gone into his dressing room to try to save some of his belongings, although Calaza did note that when his body was found, they suspected he had been inebriated. The firemen arrived to the scene at 8:40 p.m., and the fire was put out by 11:30 only because, as one news reporter put it, there was nothing left to burn.³¹

The only other fire reported occurred in December 1895 at the recently renovated Teatro Nacional, which had not yet reopened to the public. The fire started at 3:37 a.m., and the telegraph system was used to communicate with the fire department. However, by the time the fire department arrived, it was too late to save the theater. Calaza also noted that the abundant use of wood in

its construction literally added flame to the fire, and the absence of water there made it impossible to save the construction. The losses to this latter theater were calculated at 350,000 pesos, and he noted that it was not insured, which resulted in the total destruction of the venue.³²

Calaza omitted to report the destruction of the colonial Buenos Aires theater, Casa de Comedias (aka Teatro de la Ranchería), which burned down in 1792 after a flying rocket, commonly used to advertise performances, landed on the theater's straw roof.³³ He also neglected to report on the 1883 Politeama fire in Buenos Aires, which had been put out before the theater sustained serious damage. Knowingly or not, however, Calaza's report was beginning to show a certain level of national pride: Buenos Aires had reached higher levels of "civilization" than European capital cities in its ability to prevent tragic conflagrations.³⁴ In stark contrast to the two fires that occurred in Buenos Aires, Calaza enumerated twenty-two theater fires in Paris dating back from 1763.

Public Criticism of the City's Lack of Effectiveness in Fire Safety

Carl Smith in *Urban Disorder and the Shape of Belief* underscores the imaginative dimensions that accompanied late nineteenth-century urban tragedies, expressed most vociferously in contemporary newspapers and magazines.³⁵ He argues that literary expressions of fear shaped urban attitudes and actions, serving as an important and real extension of calamities into daily life, which lingered long after the tragic event itself. The narrative dimensions of urban fears of fire in Buenos Aires certainly created a large space in the public imaginary manifested in and shaped by the city press. In general, the Argentine press closely followed the events of fires in other theaters around the world and used this information to criticize ineffective efforts at implementing fire-safety regulations by the local government.³⁶ A diverse array of newspapers existed, most published in Buenos Aires, sold to the city's highly literate multilingual population. Newspapers targeted upper-class audiences (*La Nación*, *La Gaceta Musical*) as well as ethnic groups (*El Correo Español* for the Spanish immigrant community, *The Standard* for the English, *La Patria Italiana* for the Italians) and political groups (*La Protesta* for the anarchists, *La Vanguardia* for the Socialists).³⁷ Newspapers closely monitored events across the Atlantic, and it took very little time for news events to be shared. Fires were dramatic media fodder, and the burning down of full theaters seemed to touch on an essentially urban phobia.³⁸

The city press also played an important role in prompting the municipality into concerted action regarding fire safety. During the 1880s, the city's press, led by the British community newspaper, *The Standard*, and the Spanish-language broadsheet, *La Gaceta Musical*, waged a public campaign to galvanize city administrators into carrying out safety reforms in theater houses. Even Calaza, the fire chief, had to resort to the city press from time to time to campaign for the use of new construction and fire-prevention methods, attesting to the difficulties he faced getting the city government to enforce extant regulations: "We [fire departments] continued insisting [on reforms] in notes, published reports, city council minutes, and by publishing a pamphlet about fire conditions in our theaters."³⁹

These public campaigns usually occurred simultaneously with city inspections. For example, in 1882 *The Standard* reported: "When one recalls the smoking that goes on in all parts of our theatres every night, the number of gas lights and the absence of any special precautions it seems really miraculous that we have not had the Vienna horror [referring to the Ring Theater fire] enacted here years ago."⁴⁰ The following month, the newspaper once again commented unfavorably on Buenos Aires's theaters: "Everything is wood, wood, wood from top to bottom; they [Buenos Aires's theaters] are great fire hazards."⁴¹ Between 1882 and 1887, *La Gaceta Musical* published a series on the same theme. A few months after the Parisian fire of 1887, an article titled "The City Council and Theaters" attacked the city council for being too passive in regard to safety in theaters, resulting in fear and panic as part of the theatergoing experience: "The alarm experienced by theatergoers who are fully aware of the serious dangers that face them and see that nobody is worried about fixing them has reached an extreme so that the smallest movement creates great terror and many often get to their feet, and go to an exit."⁴²

In addition to criticizing the municipal authorities, the Buenos Aires press regularly reported on Europe's theater fires, always using that as an opportunity to invoke the dangerous specter that Argentine theater houses posed. The 1887 Parisian Opéra-Comique fire received first-page coverage in many of the city's newspapers, with coverage extending well past the initial tragedy itself. *El Correo Español* published "new and interesting details" of the fire a month after it had occurred, clarifying the death toll and denoting the exact locations of each of the bodies within the theater.⁴³ In an era before forensics, details to help identify the victims rested on an elaboration of personal artifacts, including the color and type of underwear worn, descriptions of jewelry, and initials found on any of these items. These personal details certainly made a powerful connection with the readership.

In addition to covering the event itself, newspapers reprinted telegrams, letters from readers, and other types of primary source documents, in effect presenting an archive of materials that covered both human interest and scientific developments emerging at the time. Telegrams sent at the moment of the crisis were often reprinted in their entirety.⁴⁴ Newspapers also included individual letters from (usually irate) theatergoers as well. The following diatribe citing the municipal theater house was published in 1883, five years before it was torn down:

The Colon is dangerous; *there is no salvation in case of fire*. The insufficient ordinances mandated by the city have yet to be fulfilled. All the stairs are of dry wood ready to burn; its frame alone is made of marble or iron, but that is hung with paper-covered wood. The aisles are narrow and are impeded by the doors of the box seats. The stage is a virtual mine: one spark and it would explode setting fire to everything in a matter of minutes. The Colon does not have adequate exits: there are always crowds of people trying to get out of the theater who are immediately crushed by carriages after eventually making it to the street.⁴⁵

In terms of scientific inquiry, after the Vienna Ring Theater fire, an article was printed in *La Prensa*, "Theater Fires," which presented a detailed technical report, including a toxin study showing how the release of carbonized gas and carbon oxide would impact different sections of the theater, depending on where the fire originated.⁴⁶

Despite the narratives of panic, disarray, danger, and devastation ascribed to theater fires in Europe and the dangerous state of theater houses in Buenos Aires, only a few theater scares seem to have taken place in Argentina. While newspapers seemed to try to outsell one another by offering graphic details about the horror that ensued within the theater during the conflagration, one thing remained clear: audience attendance rates never dropped as a result of the media's attention to fire dangers.⁴⁷

The narratives of the fire scares reported by the city press do, however, offer insight into the dominant attitudes of the era. While the press ostensibly urged the city government to be more effective in ushering in real reform, news articles inadvertently highlighted the elite's distrust of the working classes by blaming moments of panic in theater houses on the gendered seating sections, where the most inexpensive tickets could be bought. In June 1882, for example, there was a false alarm at the Teatro Nacional. Newspapers described the scene as follows: Despite the winter season, the heat rose to such a level in the *paraíso* section, the highest and cheapest in the theater, designated for men only, that some of the people wanted to open the windows. Others objected, yelling,

“*Fuera, fuera*” (get out, get out). Panic at once seized the audience, who thought the cry was “*fuego*,” fire. *The Standard* described the ensuing events: “There was a rush for the doors but a few cool heads in the house managed to stamp out the panic in a few minutes. One girl in the *cazuela* [the section of the theater reserved for unchaperoned women] attempted to throw herself out of the window. The fright in the Teatro Nacional on Thursday night induces many people to think that every theater here that has no means of escape from fire should be closed.”⁴⁸

Another fire scare occurred at the Teatro Colon, and blame was placed again on the *cazuela* section, where screams of “fire” started a stampede for the stairway, resulting in a few injuries. Argentina’s president, Julio Roca, famously appeared on the stage in an attempt to restore order. According to news reports, a cigarette butt flung from the *paraíso* section landed on dry mats in the *cazuela*, generating a wave of smoke.⁴⁹ This narrative underscored attitudes toward gender and social class quite brilliantly: the heroic president prevented a theater stampede that had been caused by women, who were, in the discourse of the era, more likely to panic and cause its spread.

It is important to note that there is evidence that these sections, which did not contain fixed seating, were indeed the least safe areas of theater houses. For example, in 1887 the city inspectors requested that exits be added to the *cazuela* boxes in the Politeama Argentino.⁵⁰ They also found that the *cazuela* section of the Colon was difficult to enter due to a row of seats that blocked easy egress.⁵¹ In 1882, theater inspectors had noted problems with exits for people who sat in the *paraíso* section.⁵² Also, these sections of theaters usually were standing-room only. The lack of fixed seats usually meant that they were extremely overcrowded.

However, criticism of the inhabitants of these sections also involved *expectations* about how people would behave in these sections. In particular, men who inhabited the *paraíso* had been frequently blamed for disorder in theaters. The *Gaceta Musical* described the inhabitants of the *paraíso* section as being prepared for battle, with men shaking in anticipation of the “combat” to come, ready to launch an arsenal of oranges, carrots, and onions at the theater’s unpopular manager.⁵³ Class tensions were often described at the Colon. In 1886, tension erupted over the fact that the city had renewed the contract of an unpopular tenor and theater manager. According to one article, “hired hands” were sent to the upper regions of the *paraíso* section to praise and applaud the tenor, while they vilified the elite members of the audience with shouts of “Death to those in tuxedos!” and “Galleries, get out!” and also threw objects on those below.⁵⁴ Social-class tensions did explode in the Colon during the lavish centennial

celebrations of 1910 when a bomb exploded during mid-performance. Police mistakenly assumed the bomb had been launched from the *paraíso* section only to discover later that it had been placed carefully beneath a box seat in the orchestra section.⁵⁵

Social-class tensions that accompanied the nation's rapid attempts to modernize pervaded commentary about fire dangers even in city publications. Somewhat surprisingly, the city government advertised deficiencies in its own fire-prevention capabilities, and was unflinchingly candid about the topic. The municipal census of 1887, for example, included a description of each of the main theaters operating in the city at the time. The *Edén Argentino* was described as always having a full house; however, "it could burn down in a total of five minutes because it [was] made entirely of wood." The census warned all those who attended the Goldoni, a working-class theater that catered to an Italian clientele, located on the outer margins of downtown, to repeat the sentence that Dante described as hanging on the doorway to hell: *Lasciate ogni speranza, voi, ch' entrate* (abandon all hope you who dare enter).⁵⁶ This same publication treated the city's official theater, the Colon, much better even though evidence from the city press argued that it also presented dangerous conditions and was indeed closed down the year after the city's report was written.

Urban discourse on fire safety is remarkable for the degree to which Argentines ignored fire tragedies nearer to them. Most notable was the fact that none of this press coverage mentioned a devastating church fire in 1863 in Santiago, Chile, which killed between two and three thousand people, nor any of the fires in Valparaíso, Chile, that Samuel Martland discusses in this volume. Nor were fires that had swept through Mendoza, Argentina, after its devastating earthquake of 1861 ever mentioned.⁵⁷ Nor was press coverage overly concerned with other large constructions of the time, notably churches and the early department stores.⁵⁸ In the late 1880s, city press coverage about urban fire prevention focused almost exclusively on theater buildings. Why? For one, Argentina might have been geographically close to Chile, but the Andes mountain range served as a formidable barrier to easy communication and transit between the two neighboring, yet often competitive and antagonistic, South American nations. Ideologically, economically, and demographically, the port city of Buenos Aires was oriented toward Europe. It is notable that Argentina's secular liberal elite preferred to focus its fire safety discourse on theaters rather than on nonsecular venues. This focus was most likely connected with the time frame of modernization attempts. Department stores emerged in Buenos Aires after the 1880s and 1890s, the era of concentrated interest in theater fires.

Implementing Electricity

The city's fascination with fire safety in theaters was also solidified as a result of its interest in the material aspects of modernization. The existence of gas lighting in the theaters had been one of the major causes of fires, both real blazes and fire scares, until the end of the nineteenth century. The 1887 fire in the Parisian Opéra-Comique theater spurred discussion in Europe and Argentina about the need for electricity in theaters as a fire-prevention measure.⁵⁹ This pressure to implement electricity resulting from the campaign for theater safety came relatively early in Buenos Aires. The first ordinance requiring Buenos Aires theaters to install electric lighting was promulgated on April 26, 1892, as part of new theater ordinances.⁶⁰ Electrification and public lighting of the city did not begin in earnest until 1902.⁶¹ Although the Paris Opéra had experimented with electric light as early as 1846, it was not installed until 1887, preceding Buenos Aires by just five years.⁶²

The implementation and regulation of electricity in Buenos Aires followed the stark demarcation of the city's cultural and social geography. In effect, the city center and the northern neighborhoods received most of the benefits of the municipality's services. The center of the city, after all, was primarily a showcase for the powerful elite who resided there until the trend to move to the northern suburb intensified between 1905 and 1912.⁶³ The 1892 ordinances allowed gas lighting only for those theaters outside the city's central radius, where electrical service currently reached.⁶⁴ Peripheral, gas-lighted theaters could not be made of wood, and all gas lights were supposed to be protected by metal screens.⁶⁵ This decision, based on pragmatic concern for cost and efficiency, also illustrates the municipal government's social class and spatial priorities.

It is notable that installing electricity in the city's theaters was almost always referred to as a safety measure. Electricity was no longer used for entertainment or show, an extension of the sophisticated lighting devices that historically accompanied political celebrations or festivals. Electricity was now a viable and practical concern of the city's late nineteenth-century growth and move toward modernization.⁶⁶

Buenos Aires did not experience any devastating urban conflagration on par with the fires in European and American cities at the end of the nineteenth century. So what was the fuss about? This essay argues that the Buenos Aires's city administrators focused on physical transformations of the capital city to showcase its progress to Europe. Preventing fires in theater buildings carried particularly symbolic weight in this context. Ensuring safety in theaters, from

the point of view of Buenos Aires's fire chief, in particular, seemed to be an important marker measuring the nation's degree of "civilization." Yet an examination of the discourse surrounding the fear of conflagrations in theaters also reveals a municipality that lacked either the resources or the political maturity to impose its will on theater managers. Therefore, the city press played an important role in ensuring that the city council stayed on course with implementing urban changes.

Why did the city avoid devastating fires for most of its history? It seems that sheer luck should not be discounted, since it is probable that Buenos Aires's theaters were as unsafe as European ones in the 1880s. By the early twentieth century, laments about the city's theaters being fire hazards had greatly diminished. The lack of any significant fires in Buenos Aires and the increasingly detailed theatrical codes, which included fire safety regulations within them, suggest that over time, Buenos Aires's theaters were most likely becoming safer. Overall, improvements in fire safety were driven by municipal regulations, the press, and very likely by the forces of modernization: as theater became an increasingly lucrative enterprise in the 1890s, a number of new theater buildings were constructed and old ones removed. City administrators were more effective at requiring that new constructions complied with safety regulations than they were at making older ones implement changes. New constructions also successfully implemented electric lighting—a technology that eradicated the cause of most theater fires simply by making gas lighting obsolete.

However, a more optimistic interpretation of urban "planning" amid rapid modernization should not be entirely dismissed. Despite the press coverage attesting to the opposite, the city council put forth a considerable amount of political will to carry out theater inspections and follow up on them during the 1880s. The absence of theater fires may signify a successful story of fire prevention, as a result of the uncoordinated yet consistent efforts of city administrators, civil society, the press, and a dedicated fire chief, who all worked toward a common goal, and whose efforts were buoyed by a robust city budget. By interpreting the discourse surrounding fire safety, however, one cannot ignore the social-class fissures of the era, revealing the city administrators' fear that the masses would be the authors of urban disorder, capable of bringing down the nation if their behaviors were not controlled, modified, and regulated. In this sense, debates over fires and their prevention became a kind of shorthand to debate larger issues related to urban change.

The tragedy that took place at República Cromañón in 2004 serves as an unfortunate bookend to the zealous attention paid to fire prevention over a hundred years before, when the city looked forward, attempting to prevent

fires by highlighting the devastation that took place on the other side of the Atlantic. The narratives following Cromañón, the tragedy that took place in Buenos Aires, not somewhere else, look backward, using the fire to construct a narrative that attempts to explain all that has gone wrong in Argentina since 2001, when the nation suffered devaluation of its monetary unit and great political turmoil, as the office of president changed hands five times in one month alone. In both cases, however, urban fires expose a particularly sensitive cultural nerve, emphasizing the subtle, inextricable, and at times volatile, link that connects fire regimes, urban space, physical materials, politics, economics, and something as ostensibly innocuous as the cultural habits of its citizenry.

NOTES

1. Sergio Ciancaglini, *Generación Cromañón: Lecciones de resistencia, solidaridad y rocanrol* (Buenos Aires: Lavaca, 2005); Diego Rozengardt, *Pensar Cromañón: Debates a la orilla de la muerte joven; Rock, política y derechos humanos* (Buenos Aires: Hernán López Echagüe, 2008).
2. Ciancaglini, *Generación Cromañón*, 17.
3. Leslie Bethell, ed., *Argentina since Independence* (Cambridge: Cambridge University Press, 1993).
4. James R. Scobie's *Buenos Aires: Plaza to Suburb, 1870–1910* (New York: Oxford University Press, 1974) remains the classic study of the city's rapid transformation. See especially chap. 2, "A Study in Contrasts: The Paris of South America and the Gran Aldea," 13–69.
5. Adrian Becar Varela, *Torcuato de Alvear* (Buenos Aires: G. Kraft, 1926).
6. Joseph M. Gilbert and Mark D. Szuchman, *I Saw a City Invincible: Urban Portraits of Latin America*, Jaguar Books on Latin America 9 (Wilmington, DE: Scholarly Resources, 1996) discuss the propensity of Latin America's elite to focus on urban displays; Domingo F. Sarmiento, *Facundo: Civilization and Barbarism*, trans. Kathleen Ross (Berkeley: University of California Press, 2003).
7. David Rock, *Argentina, 1516–1982: From Spanish Colonization to Alfonsín* (Berkeley: University of California Press, 1993).
8. The province of Tucumán did become an important exporter of sugar, but this was not until the late nineteenth century, when modernization helped foment exportation of this product.
9. The *Memoria de la municipalidad* (1882) contains an overview of the city's attempts to promulgate detailed theater codes. The first step in the process was an assessment of the current theaters in operation in the city, and that survey is included in this *Memoria*. The extant ordinances for 1882 are found in *Memoria del presidente de la comisión municipal*, March 1883.
10. Figures for 1886 were reported in the *Memoria de la intendencia municipal* (Buenos Aires: 1886). *Anuario estadístico* (Buenos Aires: Kraft, 1894) contains theater statistics for 1887 to 1894.

11. "El teatro nacional y el teatro argentino," *El Heraldo* (Mexico), February 22, 1921, was written in the wake of Argentine actress Camila Quiroga's visit to Mexico, asking why Mexico was so lacking in a national theater in light of Argentina's accomplishments. Her 1915 visit to Brazil evoked similar comparisons. See "Palcos e circus," *Estado de Sao Paulo*, August 8, 1915.
12. Kristen McCleary, "Popular, Elite and Mass Culture? The Spanish Zarzuela in Buenos Aires, 1890 to 1900," *Studies in Latin American Popular Culture* 21 (2002): 1–27.
13. See *Anuario teatral Argentino: Enciclopedia de la escena Argentina*, 1926–27 and 1927–28, for the text of law 7092, September 23, 1910.
14. John Rosselli, "The Opera Business and the Italian Immigrant Community in Latin America 1820–1930: The Example of Buenos Aires," *Past and Present*, no. 127 (May 1990): 155–82, discusses the frequency with which Italian immigrants went to the theater. I discuss common social class overlapping in McCleary, "Popular, Elite and Mass Culture?"
15. *El Correo Español*, August 20, 1891.
16. I discuss the relationship between theater space and carnival celebrations in "Ethnic Identity and Elite Idyll: A Comparison of Carnival Celebrations in Buenos Aires, Argentina and Montevideo, Uruguay, 1880–1910," *Social Identities: Journal for the Study of Race, Nation and Culture* 16, no. 4 (2010): 497–517.
17. See chap. 3, "Order and Positivism: Municipal Regulation and Theater in Buenos Aires," in Kristen McCleary, "Culture and Commerce: An Urban History of Theater in Buenos Aires, 1890–1920" (PhD diss., University of California, Los Angeles, 2002).
18. Fires, however, had been a cause of concern dating back to 1776, when the site for the Buenos Aires's theater Teatro de la Ranchería was chosen based on its proximity to the fire brigade, helping to ensure investors that their money would not be lost due to fire.
19. Buenos Aires's fire chief studied these conflagrations and published an account of the most sinister in his study: José María Calaza, *Incendios de teatros: Nuestros teatros y seguridad contra incendios* (Buenos Aires: Tip. de la Penitenciaría, 1887). See also José María Calaza, *Teatros: Su construcción, sus incendios y su seguridad (análisis histórico del asunto)*, 3 vols. (Buenos Aires: Talleres Gráficos de la Penitenciaría Nacional, 1910).
20. Nat Brandt, *Chicago Death Trap: Iroquois Theatre Fire of 1903* (Carbondale: Southern Illinois University Press, 2006).
21. Calaza, *Incendios de teatros*, 159.
22. Calaza, *Teatros*.
23. Francisco L. Romay, *Las milicias del fuego* (Buenos Aires: Ediciones Históricas Argentinas, 1955), 126.
24. *Ibid.*, 138–43. The problems associated with building an effective fire department in addition to the major causes of conflagrations are not unique to Argentina or to Latin America. Lionel Frost, "Coping in Their Own Way: Asian Cities and the Problem of Fires," *Urban History* 24, no. 1 (1997): 5–16.
25. Romay, *Las milicias del fuego*. For a complete list of fires, see 214–21.

26. The original inspection report can be found in Cultura 1882, Archivo Histórico de la Ciudad de Buenos Aires (hereafter cited as AHCBA). It was published in the *Memoria del Presidente de la Comisión Municipal*, vol. 1 (Buenos Aires: Imprenta de M. Biedma, 1882).

27. The inspection report targeted the Colon most vociferously in terms of its state of physical disrepair. This original Colon was torn down in 1888 and reopened in 1908. John E. Hodge details the new theater in “The Construction of the Teatro Colon,” *The Americas* 36, no. 2 (1979): 235–55. The second Colon embraced all safety measures. It has had three safety curtains (1908, 1931, and 2011), the latest of which was designed by Argentine artist Guillermo Kuitca and set designer Julieta Ascar, who won a public bid for the project. *La Razón*, June 24, 2011.

28. Inspector’s report, Cultura 1882, AHCBA. The report is dated January 27, 1882, and signed by Enrique Alberg and Juan A. Buschiazzo.

29. Folder 257, Cultura 1888, AHCBA. The report details the individual regulations and the degree to which they comply with the 1882 regulations.

30. Folder 176, Cultura 1889, AHCBA. This report follows up on the previous year’s inspections, detailing the individual regulations and the particular rules with which individual theaters failed to comply.

31. Accounts from the fire are taken from *El Correo Español*, September 4, 5, and 12, 1891.

32. Calaza, *Teatros*, 2:147–49. Calaza noted that the theater, in different eras, had four small conflagrations that were put out before any damage was done.

33. Marcela Aspell de Yanzi Ferreira, “‘El espejo de la vida’: La regulación del Teatro Porteño en la primera mitad del siglo XIX,” *Revista de Historia del Derecho* 21 (1993): 75–96. There is also some suspicion that the Teatro de la Ranchería was deliberately burned, with speculations made that the church had aimed the rockets at the theater. See Willis Knapp Jones, *Behind Spanish American Footlights* (Austin: University of Texas Press, 1966), 83.

34. City officials also looked to the United States for fire-safety methods. A letter dated October 14, 1887, from the Free Information Bureau of the Argentine Republic in New York directed to Buenos Aires mayor Antonio Crespo contains regulations on safety and hygienic standards in effect in New York, Boston and Philadelphia. Folder 161, Cultura 1887, AHCBA.

35. Carl Smith, *Urban Disorder and the Shape of Belief: The Great Chicago Fire, the Haymarket Bomb, and the Model Town of Pullman* (Chicago: University of Chicago Press, 1995). Smith defines imaginative dimensions as the “context of thought and expression that suffuses individual and social life” (1).

36. Municipal Census, 1895. *La Gaceta Musical* reported on other theater fires in Europe in the August 13, 1882, edition. It reprinted Barcelona’s code on fire prevention in theaters on December 11, 1887. *El Correo Español* included an article listing all the recent fires in European theaters on July 7, 1887.

37. Samuel L. Baily, “The Role of Two Newspapers in the Assimilation of Italians in Buenos Aires and Sao Paulo, 1893–1913,” *International Migration Review* 12, no. 3 (1978): 321–40.

38. Gaston Bachelard, *The Psychoanalysis of Fire*, trans. Alan C. M. Ross (Boston: Beacon Press, 1964). Smith, *Urban Disorder*, examines the daily press coverage of the three events in the book's subtitle.

39. Calaza, *Teatros*, 1:143–44.

40. *Standard*, January 21, 1882.

41. *Standard*, January 25, 1882.

42. *La Gaceta Músical*, no. 14, August 9, 1885; no. 40, September 11, 1887; the quote is from no. 41, September 18, 1887.

43. *El Correo Español*, July 1, 1887.

44. Calaza, *Incendios de teatros*.

45. *La República*, January 9, 1883.

46. A. Candelon, "Incendios y los teatros," *La Prensa*, January 30, 1882.

47. *The Standard*, *La República*, and *El Correo Español* frequently covered the Vienna Ring Theater tragedy.

48. *Standard*, June 17, 1882.

49. *La Gaceta Músical*, May 23, 1886.

50. Folder 161, Cultura 1887, AHCBA, dated August 8, 1887. On February 28, 1889, the theater finally passed an inspection and among the seven modifications made was "improvement in the *cazuela* stairway." Folder 176, Cultura 1889, AHCBA.

51. Folder 161, Cultura 1887, AHCBA, dated August 5, 1887.

52. Folder 589, Cultura 1882, AHCBA, January 27, 1882.

53. *La Gaceta Músical*, June 22, 1884.

54. *La Gaceta Músical*, July 11, 1886.

55. Original descriptions of the event are found in *La Prensa*, June 27, 1910. Analysis of the location of the bomb can be found in Horacio Salas, *El Centenario: La Argentina en su hora más gloriosa* (Buenos Aires: Planeta, 1996).

56. Francisco Latzina, *Censo general de población, edificación, comercio e industrias de la ciudad de Buenos Aires 1887* (Buenos Aires: Compañía Sud-Americana de Billetes de Banco, 1889).

57. Benjamin Vicuña Mackenna, *El incendio del templo de la Compañía de Jesús*, 2nd ed. (Buenos Aires: Editorial Francisco de Aguirre, 1971).

58. See Fernando Rocchi, "Only One Argentina: The Creation of a National Market for National Goods," chap. 4 in *Chimneys in the Desert: Industrialization in Argentina during the Export Boom Years, 1870–1930* (Stanford, CA: Stanford University Press, 2006); "Las grandes tiendas," in Ricardo Cicerchia, *Historia de la vida privada en la Argentina*, vol. 2, *Desde la Constitución de 1853 hasta la crisis de 1930* (Buenos Aires: Troquel Editorial, 2001). Harrod's, the British department store, bought out Gath and Chaves's (founded in 1883) in Buenos Aires, instituting a new phase in conspicuous consumption in 1913.

59. *El Correo Español*, July 12, 1887.

60. In 1783, the viceroy Juan José de Vértiz y Salcedo installed lighting at street corners after the city's elite said that they would boycott performances due to dark streets, thus inaugurating public lighting in the capital city. Trenti Rocamora, "Gente de teatro del Buenos Aires colonial," *Boletín*, June 17, 1947.

61. Scobie, *Buenos Aires*; Jorge F. Liernur and Graciela Silvestri, *El Umbral de la metrópolis: Transformaciones técnicas y cultura en la modernización de Buenos Aires 1870–1930* (Buenos Aires: Editorial Sudamericana, 1993). See also *El servicio público de electricidad de la ciudad de Buenos Aires: Antecedentes de las ordenanzas 8028 y 8028 que prorrogaron las concesiones* (Buenos Aires: Imp. Caporaletti Hnos, 1940).

62. Eugene Weber, *France: Fin de Siècle* (Cambridge, MA: Belknap Press of Harvard University Press, 1986), 165. Weber explicitly notes that the installation of electricity at this time likely came as a result of the fire in the theater of the Paris Opéra-Comique.

63. Scobie, *Buenos Aires*, 114.

64. *Digesto 1893*. The sanction was amended on June 10, 1893.

65. Folder 36, Cultura 1892, and folder 53, Cultura 1893, AHCB.A.

66. *El umbral de la metrópolis*, 30–33.

Points of Origin

The Social Impact of the 1906 San Francisco Earthquake and Fire

ANDREA REES DAVIES

San Francisco is best known for an event that took place over one hundred years ago when a great earthquake and conflagration stripped the ninth-largest American city bare. The 7.8 magnitude earthquake surprised city residents, many of whom were still in bed, just before dawn on a Wednesday morning. For most San Franciscans, April 18, 1906, started at 5:12 a.m. with sixty-five terrifying seconds and ended with an unknown number of dead and hundreds of thousands of people trapped in a city surrounded by water. Three days of relentless, raging fire rendered emergency responses pointless. By the following Sunday, 98 percent of the city's most populated 521 blocks was gone. The city was stripped to its foundation, from San Francisco's landmark mansions on Nob Hill to the working-class flats south of Market Street (fig. 13.1). San Franciscans barely recognized their own city. As one survivor wrote, "Think of this enormous city with not a single hotel, every factory and wholesale and retail shop destroyed, all the markets gone, every office building and business block, nine hospitals, every theatre and half or more of the homes destroyed."¹ A reporter described the earthquake this way: "It did not discriminate between tavern and tabernacle, bank and brothel."²

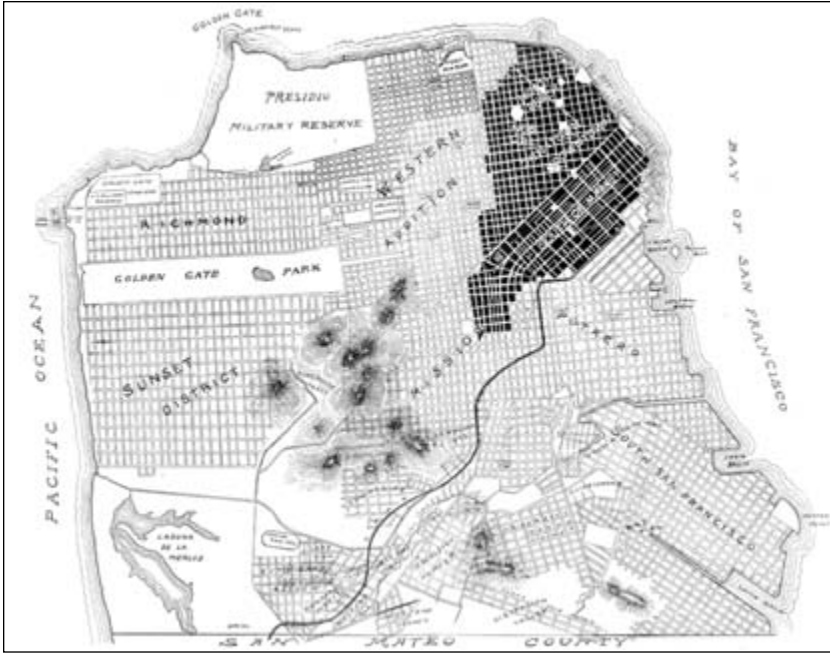


Figure 13.1. San Francisco neighborhoods and disaster zone, 1906. (Southern Pacific Railroad brochure, 1907, base map.)

The calamity appeared to be a social equalizer. Journalists, photographers, and historians (at least eighty-two disaster histories were published by 1907) agreed that the calamity unified San Franciscans because it claimed the homes of the rich and the poor, the native-born and the immigrant.³ But the disaster was not fair. Although everyone in San Francisco may have felt the earthquake, they did not all suffer the same fate.

In 1906 San Francisco was a city of foreigners. At the turn of the century, three out of four San Franciscans had parents born outside the United States, and over one-third were foreign-born themselves. Ethnic and racial groups clung together, and whether it was Ireland, Italy, or China, the country of origin was the heart and soul of a neighborhood.⁴ San Francisco's landscape, with its rocky hills and sand dunes, compressed urban development and intensified social stratification by creating physical barriers between neighborhoods. Russian and Telegraph Hills cordoned the Italians living in North Beach, while the wealthiest San Franciscans perched high above the fray on Nob Hill. Urban construction added to these divisions. Market Street cut a wide swath from the

bayside Ferry Building to the hills of distant Twin Peaks, which made an easy dividing line between the rich and the poor. New technologies meant that the city's middling classes settled north of Market Street and west of downtown because cablecars and streetcars easily brought men home from skyscraper offices and women downtown for some of the best shopping on the West Coast.⁵ Thus urban development and topography carved a sense of order in San Francisco's diverse population by creating divergent neighborhoods where everything, and everyone, had its place.

Earthquake damage intensified the differences between socially stratified neighborhoods—already separated by race, gender, ethnicity, and class—because some neighborhoods stood on solid rock and others rested on landfill for support.⁶ Then the fires ignited social discrimination when firefighters, for example, pooled water and resources to save the homes of the wealthy and left Chinatown unattended. However, the inequity cultivated by the disaster was difficult to perceive because the conflagration simultaneously destroyed evidence of social discrimination *and* validated the ever-popular “disaster as social equalizer” viewpoint. In hindsight, San Francisco's fires disclose more than they conceal because, unlike the earthquake, the inferno did not begin and end with stopwatch accuracy. Instead, the fires burned—block by block, at different rates and times—through several residential neighborhoods. In this three-day process, the fires (and the city's responses to them) revealed San Francisco's social fissures.

The 1906 disaster exposed prevailing social stereotypes, thus revealing the connections between social identity and urban space in San Francisco. Disaster relief and reconstruction continued on the course set in motion by the fires because relief reinstated social hierarchies, and then rebuilding spurred decentralization and reinforced socially stratified neighborhoods.⁷ A careful examination of the “emergency period” shows how fire management, coupled with pre-disaster urban development, set the stage for postdisaster social segregation. This process becomes vividly clear by tracing the fires as they raged through San Francisco's five densely populated residential neighborhoods. The 1906 calamity did not create a tabula rasa for radical social change. Rather the catastrophe exposed preexisting social fissures that, in turn, guided relief and reconstruction in ways that ultimately cemented social differences in the rebuilt city.

The Unprepared City

San Francisco was no stranger to fire and earthquake. A spate of fires between 1848 and 1851 made urban rebuilding an annual event. Flammable features

like elevated, wood-planked sidewalks near the waterfront made San Francisco a city built to burn. Fire was more widespread in San Francisco than in other US cities because of high winds, low summer rainfall, wood construction, and hills that defied fire engines and their sturdy horses.⁸ Early attempts to diminish fire hazards inadvertently increased vulnerability to earthquakes. Developers “made ground” out of sand, rubble, and trash to eliminate the pockets of oxygen trapped beneath sidewalk planks after the 1851 fire. “Made ground” turned the city’s sagging waterfront, small lakes, and tributaries into valuable real estate.⁹ When it liquefied during San Francisco’s 1868 earthquake, developers unabashedly scraped up the earthquake rubble and used it as landfill. Although it would take the 1906 earthquake for scientists to understand liquefaction, geologists cautioned against the “assumed indifference to the dangers of earthquake calamities” following the 1868 quake.¹⁰ But only after 1906 was the undeniable hazard of made ground common knowledge. The 1906 scientific investigative committee reported, “The most violent destruction of buildings, as everybody knows, was on the made ground. This ground seems to have behaved during the earthquake very much in the same way as jelly in a bowl, or as a semi-liquid material in a tank.”¹¹

As city buildings grew taller, politicians and builders boldly ignored the latest “fireproof” techniques used in other cities. It was widely known that reinforced concrete buildings, popular at the turn of the century, gave the best earthquake resistance for buildings over six stories.¹² But this did not alter San Francisco’s design because the International Union of Bricklayers and Allied Craftworkers voted against the use of reinforced concrete. Unfortunately, ordinary brick buildings lacked elasticity and cracked and crumbled under the earthquake’s touch. “Fire limit” building codes, or restrictions on wood-frame construction in downtown San Francisco, added to the problem as well. The codes “grandfathered” all wooden buildings, leaving them to stand like a book of matches beneath the city’s modern buildings. All these factors—landfill, brick buildings, and wood-frame construction—meant that much of the city had little hope of enduring either earthquake or fire. San Francisco’s magnificent skyscrapers, hotels, and dramatic views of the bay masked an open invitation to disaster.

San Francisco’s fire department was professional, but not perfect. Since 1866, San Francisco was one of a handful of American cities with a professional fire department. The city maintained forty-two fire engines, still pulled by horses, and staffed a dozen ladder companies. As recently as 1905, the National Board of Fire Underwriters lauded the “vigilance of the fire department” in protecting the city.¹³ But this vigilance was put to the test after the 1906

earthquake. Rumor had it that the fire chief, Dennis Sullivan, developed an emergency plan for a major catastrophe. But if Chief Sullivan had a plan in mind, he failed to share it with anyone before the disaster struck. To make matters worse, the earthquake killed the chief and wiped out the fire department's alarm system. After the quake, fire crews worked around the clock without clear direction from a central command.

The range of destruction made it seem as though each fire department crew faced a different disaster. Earthquake damage depended entirely on the neighborhood. Captain Arthur Welsh's crew did not need an alarm to tell them there was an earthquake because they were trapped inside their Mission District firehouse. Even after breaking through the firehouse doors, the crew was isolated by a "fire alarm system [that] was out of order[;] consequently [they] had to use [their] own judgment as to the best way to proceed."¹⁴ Even if the alarm system had survived, there was simply not enough water to quench the flames.¹⁵ Only after the earthquake did the city engineer admit that city water pipes were not suited for extensive firefighting: "The pressure is too low and many of the distributing pipes are too small. . . . Many of the mains pass over ground liable to serious displacement from earthquake."¹⁶ There simply were not enough firefighters (575 were on duty that day), water, hose, or strategy to stop the fires before they raged out of control.¹⁷

Low water supply and an inexperienced central command made a deadly combination. San Francisco mayor Eugene Schmitz took charge even though he had neither firefighting nor military training. Thus it was not surprising that the mayor's command suffered from inexperience and isolation. Military commanders stationed at the Presidio marched troops downtown to fight fires and protect property, while naval ships pumped water to anxious sailors fighting fires along the waterfront. Despite their best intentions, these groups (military, municipal, and private citizens) did not work in unison. "I had no instructions with regard to my position as far as preserving order," reported one naval officer, "but from rumors which had reached me I learned that the military was in control."¹⁸ In the end, decentralized firefighting made the disaster worse instead of better.

Firefighters helped "nature" take its course and were inadvertently responsible for the fires spreading from one neighborhood to another. They turned to dynamite as a last resort, often igniting black powder to create firebreaks. Dynamite had a track record of success as a fire-suppression technique. Not in San Francisco, however, where firefighters were not trained in its use. Battalion Chief J. J. Conlon was not the only officer to report this deficiency: "My experience with dynamite did not prove entirely satisfactory, due to the fact that up to

this time I had never been called upon to use high-grade explosives.”¹⁹ The combination of inexperience and zeal to stop the fire was lethal. The fire department’s chief engineer later admitted that “great harm was done during the first days of the fire by the indiscriminate use of black powder[.] it developed that when black powder was exploded it threw off a combustion that ignited all woodwork with which it came in contact, thus starting additional fires.”²⁰ While the fires burned, dynamite made San Francisco sound like a war zone. Brigadier General Frederick Funston, the Presidio’s acting commander who marched troops into the burning city, described “times when the explosions were so continuous as to resemble bombardment.”²¹ Experts knew that dynamite could have saved San Francisco, but they were not on hand to help. The editors of the *Mining and Scientific Press* later wrote: “The use of high-grade explosives by people ignorant of their strength and proper application, was instrumental in destroying a vast amount of property without the desired result, and in many cases it actually spread the conflagration.”²²

The city was unprepared for a major catastrophe as later aerial photographs of the disaster zone made abundantly clear. Hundreds of city blocks and thousands of homes were gone. Even scavengers were hard pressed to find anything of value in the ashes. But this bird’s-eye view of the disaster zone masks another important story. What one cannot see from viewing an image of urban obliteration or reading about the destructive force of earthquake and fire are stark variations in emergency response. Rather than discussing the earthquake as one mega-disaster, one can better and more productively understand the catastrophe as a series of neighborhood disasters, integrally tied to the social standing of each residential area. The following analysis traces the disaster in a chronological fashion, revealing the social construction of catastrophe by showing how the fires moved through and between each residential neighborhood.

Neighborhood Disasters

The South of Market District

At the beginning of the twentieth century, working-class San Franciscans lived on borrowed time and borrowed space. Much of this district was built on landfill. Residential hotels and boardinghouses erected over former lakes and inlets suffered a worse fate when seismic tremors turned solid ground into watery quicksand. Residents drowned in their sleep when their rooms disappeared below street level. Shoddy construction was no match for the earthquake, and everything from cramped row houses to sizable residential hotels tumbled

down in an instant. Investigators later found that “less than a third of the frame buildings in this tract remained in their vertical positions.”²³ South of Market residents had only a few seconds to find safety that Wednesday morning. “My father looked down the front stairs and found that they had fallen in. Then he went to the rear stairs and they were all raised up, almost ready to fall in,” recalled two sisters. “Well, my father got us down those stairs as fast as he could, helping each one so we wouldn’t fall. There was no time to try to save anything.”²⁴ At least three thousand people died during those few days in San Francisco, a figure that took decades to calculate.²⁵ But no one will ever know the real number of nameless San Franciscans—working-class people who could not afford to own a home and struggled to make ends meet—who disappeared. A deadly combination of history and landscape sealed their fate.

Earthquake was just the beginning of the crisis. A few innocuous fires mushroomed into a firestorm that overtook the neighborhood. Water mains and gas pipes running through landfill snapped in two, and the city water system ground to a halt. The chief engineer for Spring Valley Water Company discovered hundreds of ruptures, “especially where the streets crossed filled ground and, particularly, where such filled ground covered former deep swamps.”²⁶ San Francisco Gas and Electric Company’s chief engineer documented the “successive explosions in the feeding mains.”²⁷ Flames bursting from broken gas lines torched nearby buildings, while firefighters rushed from hydrant to hydrant searching for water. Once the collapsed row houses and hotels burned, the conflagration devoured wood from the abundant lumberyards and warehouses. Winds carried the flames to the ostensibly unlimited supply of wood nearby. A small fire from a waterfront hotel, for example, ignited the Sperry Flour Company’s block-long warehouse. After decimating the warehouse, the burning raged on to nearby lumberyards.²⁸ Before long, South of Market’s conflagration spread to more valuable property when a row house fire left Fourth Street for the Grand Opera House near the main thoroughfare of Market Street. After burning the famous building by 9:30 that morning, the fires took Market Street by storm and moved toward the landmark Call Building.

Outsiders feared both South of Market’s roaring flames and fleeing refugees. General Funston’s troops guarded federal buildings and protected upper-class homes. “San Francisco had its class of people, no doubt, who would have taken advantage of any opportunity to plunder the banks and rich jewelry and other stores of the city,” wrote Funston, “but the presence of square-jawed silent men with magazine rifles, fixed bayonets, and with belts full of cartridges restrained them.”²⁹ Soldiers worked overtime to suppress people as well as flames. Firefighters remained focused on commercial buildings as navy ships pumped

water from the bay to protect the city's valuable waterfront. While South of Market's residential space vanished, soldiers saved the property of companies like Folgers warehouses, the Mutual Electric Light Company, and Southern Pacific's freight sheds.

By lunchtime on April 18, South of Market was an inferno; by midnight, the entire district was gone. Nothing was left from Market Street to Townsend. "I clambered my way over piles of brick and rubbish with fires smouldering on either side," wrote one South of Market observer on April 20, "and not a building as far as I could [see]." ³⁰

The only path to safety was one out of the neighborhood. Residents grabbed what possessions they could and dragged trunks, carts, and bulging bedsheets away from the fires. Some fled west, walking to the city limits or stopping at the nearby Mission District. Others fought crowds on the ferry docks, taking the free rides east to Oakland or north to Marin County. Those who stayed in San Francisco were less welcome. Within the coming weeks, poor and working-class refugees found themselves living in disaster relief camps under the close supervision of military commanders. The catastrophe, disaster relief, and urban reconstruction permanently removed many residents from their once familiar neighborhood. If these refugees were to find new homes in San Francisco, it would take many years to do so.

San Francisco's Chinatown

Chinatown did not burn by natural causes. Dynamite, mixed with strategic decisions to save the city's elites, leveled the largest Chinese settlement on the West Coast. The fire department grabbed dynamite to stop the fires once the flames ate their way through downtown and began nibbling at the base of Nob Hill. One poorly set explosion sent a flaming mattress into the neighborhood from nearby Kearny Street. The flames spread with no one there to stop them because firefighters, who spent the morning battling blazes along the waterfront and downtown, had stopped to eat breakfast. Without them, Chinatown firefighting was left in the hands of a poorly trained civilian. Instead of quenching the flames, his use of explosives to create firebreaks abetted the conflagration, which consumed a vibrant fifteen-block neighborhood.

To outsiders, Chinatown was defined by its difference from the rest of San Francisco. But the truth was that Chinatown had always been an integral part of the city's identity. As early as 1851, nearly three thousand Chinese referred to San Francisco as "Dai Fow" (first city). ³¹ Almost everyone who stepped on a boat in China sailed through San Francisco's golden gate and, by 1890, nearly



Figure 13.2. Soldiers standing on Grant Avenue while Chinatown burns, 1906. (Photo courtesy of the San Francisco Virtual Museum.)

30 percent of the Chinese in California called San Francisco home. But the 1882 Chinese Exclusion Act stopped the regular flow of Chinese workers who mined for gold and laid tracks for the ever-expanding railroad. The immigration policy left Chinatown predominantly male because it prevented the migration of families by limiting admission to merchants, Chinese officials, students, and teachers. As a result, Chinatown's merchant class rose to power by forming the Chinese Consolidated Benevolent Association (CCBA) to protect the political, economic, and social needs of its community.³² Chinatown remained a double-edged sword for its residents. While many found safety in the insular neighborhood, Chinatown's distinct spatial boundaries perpetuated a negative racialized identity for the rest of San Francisco.³³

Racialized views of Chinatown made a difference during the disaster. As a few surviving records suggest, fire suppression strategy did not prioritize Chinatown (fig. 13.2). While navy crews made diligent firefighters, commanders ordered them to rest once "the waterfront was apparently safe." As the seamen left their post, their officer watched flames "sweeping through Chinatown" unattended.³⁴ Dynamite took its toll on Chinatown as well. Fire officials hoped that exploding a drugstore and a rooming house on the corner of Clay and Kearny Streets would stop the downtown fires. Instead, they blasted the innards of a lodging-house

bedroom across Kearny Street and into the neighborhood.³⁵ Things went from bad to worse when the mayor allowed a civilian to lead the Chinatown attack. The city sent both supplies and firefighters, consisting of at least one hose wagon and two firefighters, down “to the Lombard St. wharf to report to John Bermingham.”³⁶ City leaders trusted Bermingham because he was president of the California Powderworks. Unfortunately, Bermingham started more fires than he stopped and after the disaster was accused of igniting of more than sixty fires in Chinatown.³⁷

When fire threatened other neighborhoods, it was often the case that residents banded together to fight the flames. This was not true in Chinatown because civic and military authorities forced residential evacuation. As one eyewitness near Chinatown recalled, “The authorities drove them [Chinese] up the hill and out of the range of the fire.”³⁸ Police captain Stephen V. Bunner, interviewed shortly after the disaster, “was with a squad in Chinatown persuading or compelling reluctant Chinese to leave houses that were threatened by the oncoming conflagration.” He noted that “some of these people were very unwilling to leave their homes and abandon their household goods, stocks, and other treasures.”³⁹ In the end, the fires destroyed almost all of Chinatown’s landmarks, from the famous Chinese Theater on Jackson Street to the first Chinese place of worship, Kong Chow Temple. As one sightseer from Oakland wrote on April 21: “I looked around in the ashes of one of the Chinese Bazaars for something to take home for a souvenir or relic and did not find one.”⁴⁰

Chinatown’s loss created a second disaster for neighborhood residents. Not only did individuals lose their homes and businesses, but a community of thousands lost its safe haven in a city where racial discrimination prevailed. After the catastrophe, Chinese refugees stood in place of their absent neighborhood, their physical bodies symbolizing racial difference in San Francisco. Postdisaster racial fears fueled a segregated relief policy as well as a concerted effort by city leaders to excise Chinatown from San Francisco. Chinese residents relied on their preexisting social networks—local, national, and international—to recover their place in the rebuilt city.

Nob Hill and the Western Addition

When nothing was left to burn in South of Market, the fires blew into the better parts of town. High winds off the bay carried the flames up the waterfront near the ferry building, taking the fires to downtown. Westerly winds pushed the blazes toward the most prestigious neighborhood in the city, Nob Hill. The fires also crossed into the Western Addition, an up-and-coming neighborhood

just one mile west of the ferry building. Losing their homes to fire came as a shock to the residents of these neighborhoods. After all, their homes withstood earthquake. The earth did not open up and swallow buildings as it did South of Market. Elite social status protected them as well. The mayor did everything in his power—diverting water supplies, blowing up buildings, and staging safety patrols—to save their homes. Although this did not save Nob Hill, it stopped the conflagration’s headway through the Western Addition.

As far as earthquakes were concerned, Nob Hill was one of the safest places to live in San Francisco. Scientists later recorded that “on the rocky slopes and ridge tops, where, for the most part, the vibration communicated to buildings was that of the elastic underlying rocks, the destruction was at a minimum.”⁴¹ The wealthiest San Franciscans first chose Nob Hill for its view, not its seismic qualities. The hill became fashionable in the 1870s, when new cable cars hoisted the city’s elite to new heights. The railroad’s Big Four—Leland Stanford, Charles Crocker, Collis Huntington, and Mark Hopkins—bejeweled the hill with their mansions. However, Nob Hill was more an architectural statement than a neighborhood. The mansions, which one writer later described as “a mess of anachronisms,” engulfed entire city blocks and left little real estate for single-family homes.⁴² In 1906, Nob Hill claimed three valuable assets: panoramic views, high property values, and earthquake protection.

But the hill was not immune to fire. Once the blaze reached the base of Nob Hill, the winds took over. Mayor Schmitz supervised as the fire department’s chief engineer drained water reserves to protect the hill. The mayor found a cistern with forty thousand gallons of water and directed a fire engine to douse the Nob Hill wall facing Mason Street. But there was not enough water to quench the fire, and Nob Hill succumbed to the flames. “Nob Hill stands almost as bare as when it was primitive, rolling sand,” reported one journalist who lamented the loss of San Francisco’s prestigious landmarks.⁴³

Western Addition residents at first believed their neighborhood was safe from the ravages of the distant fires. Here, like Nob Hill, earthquake damage was minimal. Ernest and Bella Lilienthal watched as the “chandeliers swayed back and forth, and part of the molding of the ceilings cracked and dropped. The grandfather clock in the upper hall fell on its face.”⁴⁴ Their neighborhood, built on solid ground, claimed an expansive part of the city north of Market Street when it opened for residential construction in 1855. It stretched all the way from downtown to include the impressively broad Van Ness Avenue. The cable cars and electric streetcars made it easy for the city’s “better” classes to move away from downtown. From the stunning homes along Van Ness and on the hills of Pacific Heights to clusters of two- and three-story row houses, Western

Addition real estate was more valuable than the South of Market or Mission Districts. Life was pleasant in the Western Addition before the calamity. Economic necessity did not force families to share their homes with relatives or rent-paying strangers. Not only could many families buy their own home; they could afford servants as well. Most of the men living here were merchants or employed by merchants and left the neighborhood for work in downtown each morning. Although downtown stores were just a streetcar ride away, women did not need to go far to find good shopping. Polk Street, Western Addition's commercial center, was lined with small shops and stores. This sense of neighborhood security continued after the earthquake, when residents had plenty of time to survey property damage. They even had time to prepare for the fire. Helen Hillyer Brown lived on Van Ness Avenue, where her home "stood the blow and wrench exceedingly well." The Browns spent the remainder of the day at home, and "from time to time [they] went on the roof to watch the progress of the fire." They felt safe that day and even into the night. But Helen Brown gave up hope at 2:00 a.m. on Thursday, May 19. One last check from the roof convinced them that "everything was looking pretty bad." She recalled, "We decided to pack. . . . Everybody was pretty discouraged and blue by this time."⁴⁵

Many Western Addition homeowners were reluctant to evacuate because they were unwilling to abandon their property prematurely. Some solved this dilemma by relying on their servants. Loyal servants allowed families to depart for safer ground with the confidence that someone was watching their property. Charles Elkus and his family, for example, went to the nearby park for safety, and their "Chinese cook remained home to take care of the house."⁴⁶ Homeowners could also count on the military. Under consultation with Mayor Schmitz and police chief Jeremiah Dinan, General Funston sent troops to the Western Addition every evening to "patrol the wealthy residence district west of Van Ness Avenue, in order to prevent robbery or disorder by the vast throngs being driven thither by the progress of the fire."⁴⁷

The Western Addition was well poised for full recovery. First, much of the neighborhood was spared from the fires. Second, home owners had the resources to rebuild. Further, Western Addition's undamaged Polk Street briefly enjoyed commercial prominence as the "new Market Street" after the disaster, a temporary center for business and retail during the rebuilding period. Nearby in the Mission District, social class created a different encounter with calamity. In this area, residents stayed and fought the flames, knowing it was their best chance at preserving their way of life.

The Mission District

The Mission District, like South of Market, had pockets of made ground. The unfortunate Valencia Street Hotel was staged over filled-in swampland on Valencia and Eighteenth Streets. After the first seismic tremors, the hotel sank three stories into the earth leaving only the fourth floor above ground. The few survivors who escaped onto the roof said that at least two hundred others were trapped below ground.⁴⁸ But there was nothing that could be done for anyone on the first few floors. Fortunately, most of the Mission District was built on solid ground. And like the Western Addition, residents could see the fires approaching.

The encroaching inferno posed a serious threat to the Mission District, and firefighters tried dynamite, but to no avail. "I saw the fire at Mission and 15th Streets," recalled James Phelan, former San Francisco mayor. "Dynamite was being used to blow up buildings in the path of the flames, on the south east side of Mission Street, but the dynamiting was done too close to the actual fire, and the wreckage, caused by the dynamite, soon ignited, and the fire went on."⁴⁹ Local residents did a better job. Thousands of volunteers used water and wet sacks to stop the fire from crossing Dolores Street, passing milk cans filled with water and breaking down small houses along Twentieth Street to create a fire-break.⁵⁰ Their ability to work in unison to stop the fire had everything to do with the neighborhood in which they lived.

The Mission District was a few blocks west of South of Market and a step-up for Irish and German working-class families. By 1902, streetcars running up Mission Street allowed families to venture further from work to buy or rent single- and two-family homes. As working-class families moved out of South of Market and into the Mission, they blended in with the lower middle classes. By crossing just a few blocks, the Mission gave a new life to former South of Market dwellers.

Unlike the Western Addition, active social networks in the Mission District checked the spread of fire. Neighbors met in the street to share personal experiences and decide how to protect their neighborhood from further damage. Mission District resident F. Ernest Edwards led the search for working fire hydrants in the area. "I made my way quickly along 19th to Dolores, opening every hydrant I came to," read Edwards's statement. As he walked up Twentieth Street, he told everyone he met that he was looking for water to fight the fires. This is when Edwards learned that "people had been getting water on the side of the hill."⁵¹ When Edwards found the Mission District's most important working hydrant, he notified the fire department by sending a note to a fire

chief with “a man on a big black horse” and urging a friend on a bicycle to “tell any fireman he saw with a white helmet where the water was.”⁵² Residents worked side by side with firefighters to pump water from that single hydrant at Church and Twentieth Streets as well as draft water from a cistern at Nineteenth and Shotwell Streets.⁵³ As a result, the conflagration made little headway into the Mission District. After burning a four-block path from Dolores to Folsom Streets, the fire was extinguished in the Mission District at 7:00 p.m. on April 20.⁵⁴

Social status gave Mission District residents a different kind of advantage. Unlike the Western Addition, most Mission District residents could not rely on servants to watch their property or flee to their summer homes. They had little choice but to stay and fight. Their success saved their neighborhood and created a place of safety for South of Market refugees. The neighborhood park bordering Dolores Street, much like other parks in the city, sheltered the homeless. But neighborhood residents welcomed refugees into their homes as well. Peter Maloney, who owned a horse-shoeing business, opened his home on Twenty-Fourth Street to disaster survivors. Minnie Coleman heard about the Maloneys after spending the night of April 18 sleeping “out on the street.” Coleman knocked on their door and was invited to stay even though the women and children had to sleep sideways across the mattresses in order to fit four or five to each bed.⁵⁵ Thus strong neighborhood ties bolstered fire suppression and disaster relief, both of which helped this neighborhood thrive after the disaster. A close-knit neighborhood, however, did not guarantee protection from disaster. The last neighborhood to fight the fires, North Beach’s Italian enclave, was overwhelmed by a conflagration that had, at first, passed it by.

North Beach

North Beach’s rocky terrain protected it from earthquake but not fire. The loss of Nob Hill created a panic, and fire-suppression leaders called for more dynamite to stop the inferno in its tracks. Soldiers ran west to dynamite buildings well ahead of the conflagration. But they paid a steep price for stopping the flames on Van Ness Avenue. Dynamite and winds pushed the blaze east, and the fires left the Western Addition for the previously unscathed North Beach.⁵⁶ Hidden safely behind Telegraph and Russian Hills, most of North Beach’s residents remained in or near their homes during the disaster. Few Italians anticipated the fact that the fires would reverse course and race toward their neighborhood on the night of April 20. Unfortunately, North Beach’s poorly constructed wood-frame housing, which had offered the lowest rents in San Francisco since the 1860s, provided ample fuel for the blaze.⁵⁷ More than thirty thousand

Italians awaited their fate on the waterfront as exhausted firefighters turned their attention to this neighborhood.⁵⁸ Regrettably, hundreds of Italians lost their lives as flames devoured property from Mason to Battery Streets.

North Beach was undoubtedly Italian by 1906. The neighborhood was originally called the “Latin Quarter” because it attracted immigrants from Italy, Mexico, Peru, and Chile. But skyrocketing Italian immigration at the end of the century changed the neighborhood. Men, not families, came to San Francisco, and women tallied only one in every ten Italian immigrants during the nineteenth century.⁵⁹ North Beach had a distinct regional spirit, *campanilismo*, because immigrants from the same region, and even the same village, lived and worked together in San Francisco.⁶⁰ *Campanilismo* shielded them from the negative stereotypes of Italians popular in America at the time. This was true in San Francisco, where strong unions pushed them out while urban elites gave them the cold shoulder. Thus the tight-knit neighborhood was capable of banding together to face the disaster.

While the North Beach populace struggled to fight the fires, they initially found little assistance from city firefighters. By April 20, fire department firefighters were exhausted. One eyewitness reported seeing a fire hose with “its nozzle pointed up by means of a box and two bricks, playing uselessly into the middle of the street.” The firefighters stopped to rest and “looted a grocery store, and with cheese and olives and canned goods, and plenty of alcoholics to drink.”⁶¹ Navy crews, meanwhile, saved a few waterfront warehouses and piers by pumping water from the bay. The navy and the bay water supply tipped firefighting in the city’s favor and quenched the fires in North Beach. This brought an end to the fires not only in North Beach but in the rest of the city as well. On Saturday, April 21, after three days of fire, San Francisco’s greatest catastrophe was finally over.

The calamity exposed yet another isolated ethnic enclave in San Francisco. At least twenty thousand people lost their North Beach lodgings.⁶² Anyone who owned a fishing boat used it, often heading north to the shores of Marin County. But most Italians remained in the city, the elderly and the poor in particular, and sought refuge in the relief camps, where they faced a whole new array of hardships. More fortunate Italians turned to relatives and North Beach business leaders for help. The speed with which Amadeo Peter Giannini opened his Bank of Italy for business after the disaster and made loans to locals helped many, especially the Italians in North Beach, rebuild their businesses and homes. The well-known success story of Giannini’s Bank of Italy reveals how *campanilismo*, not disaster-relief policy, brought the vibrant North Beach back to life.

A close examination of earthquake damage and burn patterns reveals that the catastrophe was not one size fits all. In fact, the 1906 earthquake was as socially stratified as the city of San Francisco itself. Nature, urban construction, and social attitudes conspired to make it so, and emergency response added yet another layer of loss. This helps to explain why the catastrophe played out so differently in each residential neighborhood. Chinatown refugees undoubtedly faced the greatest difficulties as they lost the invaluable physical protection of their neighborhood to fire. Without their familiar neighborhood boundaries in place, Chinese refugees became walking symbols of racial difference in a city already uncomfortable with their presence. The disaster heightened social-class fears as well. The working class and the poor who dragged their few possessions out of South of Market, as well as poor Italians who lost their homes in North Beach, raised a general alarm of social disorder. Indeed, social discrimination accompanied emergency response efforts despite the primary objective of protecting lives and property.

The San Franciscans who witnessed the failed attempts at fire suppression by trained professionals must have wondered if disaster relief would come to their aid after the city stopped burning. As disaster relief replaced the emergency period, it introduced yet another threat to refugee independence and social identity. In many ways, new relief policy reinforced predisaster social hierarchies by privileging property owners over nonproperty owners, failing to support Chinese survivors, and evaluating poor and working-class refugees by middle-class standards. Reconstruction shared, and ultimately realized, many of the goals of relief because rebuilding solidified the boundaries between San Francisco's socially segregated neighborhoods. As historians William Issel and Robert Cherny explain, "patterns of residence, work, ethnicity, and family not only continued but also in some instances intensified" in postdisaster San Francisco.⁶³ Indeed, many disaster survivors faced another sequence of social dislocation in their encounter with disaster relief and urban reconstruction.

Yet after the smoke cleared, reporters and observers alike were quick to put a positive spin on the catastrophe. Most agreed that the disaster was a social equalizer that destroyed class and racial barriers along with San Francisco's buildings. Emma Burke, writing for *Overlook Magazine*, painted a portrait of urban disaster survivors with Christian ideals: "All artificial restraints of our civilization fell away with the earthquake's shocks. Every man was his brother's keeper. Every one spoke to everyone else with a smile."⁶⁴ Another San Francisco reporter's vivid anecdote suggested that the disaster bridged the gap between ethnic differences. The *San Francisco Examiner* story described an Italian mother desperate to soothe her crying infant. She explained in broken English,

“No milk here since the earthquake scare me so hard.” Aid soon arrived, the story went on, in the form of a “fat, motherly young Irishwoman with a bouncing boy on her arm [who] stopped on her weary journey to the ferry. ‘I’ve got enough for two,’ she laughed. ‘Give me the kid. There darlint [*sic*], take your dinner.’ And Italy drained the milk of human kindness at Erin’s fount.”⁶⁵ The journalist played gender and ethnic stereotypes to the hilt to show how women’s maternal roles bridged social differences. The outlandish story reassured readers that their city, like the hungry infant, would be nursed back to health. But in 1906 San Francisco, the “social equalizer” narrative masked the persistence of social segregation that existed before and after the calamity. If anything, the catastrophe accentuated predisaster social differences while emergency response reified them.

Historical accounts of San Francisco’s infamous disaster, whether written in 1906 or during the hundred years that followed, portray the earthquake and fires as a single cataclysmic event. The mega-disaster conceptualization masks the disparate impact of the 1906 calamity on the people of San Francisco. A closer look at the fires and the emergency responses paints a different portrait of catastrophe. The majority of the populace experienced this disaster in stages because, for the most part, their lives and property were not immediately threatened by earthquake. For most San Franciscans, conflagration was the real tragedy as fires traveled neighborhood by neighborhood, following the whim of unpredictable winds while devouring the city’s abundant source of flammable materials. The catastrophe initiated a chain of events—from fire management to urban rebuilding—that threatened the physical and social place of nonelite residents. Recovery from the disaster created a paradox for many San Franciscans, who ultimately found security within their new neighborhoods coupled with greater difficulty bridging the gaps among the city’s diverse social groups.

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PART 3

THE POLITICS OF FIRE

The Politics of Singapore's Fire Narrative

NANCY H. KWAK

The Bukit Ho Swee fire of May 25, 1961, holds a special place in the lore of modern Singapore. Although small fires broke out all too frequently in urban communities overcrowded with self-made wooden structures, this conflagration was epic in scale: it leveled an entire community of sixteen thousand people, forcing a newly ascendant government to account for their needs. Typical histories paint this devastating fire as an important ordeal for the newly installed People's Action Party (PAP), a "major undertaking" that "tested the full machinery of the government."¹ If PAP leaders failed to care for the homeless, if they took a long-term approach to Bukit Ho Swee residents' needs, they would appear little better than the British colonial officers who had preceded them; likewise competing political factions would undoubtedly hold the PAP accountable for poor crisis management. Fortunately, PAP leaders passed the unexpected test with flying colors; party leaders proved themselves both extraordinarily effective and compassionate in this literal trial by fire. "Believe it or not," one Ministry of Culture film crowed, the PAP successfully transformed charred ruins into rows of orderly, modern public-housing flats in nine months.² What further proof did the people need that the PAP could capably lead the city through politically and economically uncertain times?

Yet this simple story unravels in the details. First, urban fires were hardly unusual in this Southeast Asian island town. Much like other entrepôt cities that required large numbers of unskilled laborers to live in concentrated centers, Singapore had cheap, roughly constructed shelter clustered around the Singapore River near the quays. Not surprisingly given the limited resources of unskilled laborers and the inconsistent access to water and cooking fuel, self-made homes burned quickly and often.³ Bukit Ho Swee itself burned repeatedly, most notably again in 1968.

If large fires raged before *and* after 1961, did that year truly mark a watershed in Singaporean history, a pivotal moment when the PAP earned the trust of most residents and began building what would become an unquestionably well-managed city (and after 1965, nation)? Or—more likely—did the fire belong in a longer historical trajectory of housing reform and regulation beginning with the preventative measures instituted by the colonial agency, the Singapore Improvement Trust (SIT)? A second sticking point arises in the PAP's decidedly unwelcome stance vis-à-vis any public debate about housing form and finance. PAP leaders like Lee Kuan Yew reduced a rich variety of housing options to the simplistic binary of old “traditional” urban “slums” versus modern public-housing units designed by the Housing and Development Board (HDB).⁴ The HDB repressed those who disagreed, eventually putting architects like Tay Kheng Soon to flight and forcibly removing reluctant families.⁵ These less savory incidents clash with the image of a grateful public rehoused by a generous, well-established ruling party. Third, the history of the fire brigade remains nearly totally absent from a story at base about flammable buildings, devastating fires, and rescues. If the PAP intended to end vulnerability to fire, why did it focus so single-mindedly on rehousing, leaving, for instance, the modernization of the Singapore Fire Brigade, sprinkler installation, and emergency traffic management on the back burner until the early 1970s? Why have the heroic actions of fire-fighters been nearly erased from historical recollections of 1961? Although fire-fighters fought impossible odds carrying malfunctioning hoses attached to erratic hydrants, although they wrestled with unruly looters, burned themselves trying to squelch jumping flames, and worked with police to cordon off the area amid total mayhem, they did not sit in the limelight afterward. Instead, the stark image of the Yang-di-Pertuan Negara and Prime Minister Lee, both dressed from head to toe in white, remain vivid in the national imagination and in nearly every history of the time period. Fireman Jaafar bin Sidek's hand blisters and burn marks mean nothing to most.⁶

The Bukit Ho Swee fire narrative offered by the PAP cannot be swallowed whole, then, but rather should be scrutinized as a political event birthed amid

intense anxieties over regime change. The PAP became particularly adept at using fire narratives—stories explaining the origins and resolution of fire disasters—to cement political authority. When the PAP assumed power in 1959, one of its top priorities was to develop a ten-year building program, launched in 1960 by the new Housing and Development Board (HDB) and subsequently divided into two five-year building programs (1961–65 and 1966–70). In reality, 1960, not 1961, “marked the beginning of . . . large-scale and integrated development” for the PAP, a history that itself fits neatly into the growing eminence of plans beginning in the early twentieth century.⁷ The PAP faced serious political challenges, however, with some of its own members splintering off to form the Barisan Socialis, and with that communist organization having its strongest supporters in the very kampongs that the PAP then targeted for early clearance. According to Linda Lim, “compulsory resettlement provided the PAP with the opportunity of breaking up established and potential opposition electoral communities.”⁸ The PAP could not assume all would be well with its building or housing programs, and such coercive resettlement techniques could have backfired but for Bukit Ho Swee. The fire imbued the PAP’s resettlement program with a critical sense of inevitability. If the state did not remove kampong dwellers and clear the sites, nature would. Once these areas were leveled, only the central government could help those rendered homeless. In putting forward this version of history, the PAP found it more expedient to emphasize 1961 over 1960 as the birthplace of the modern Singaporean housing program.

Lee Kuan Yew thus used the fire to take credit for a housing modernization program that had been decades in the making, and he effectively manipulated shared anguish over Singapore’s largest kampong fire to squelch any dissent over the form of that modernization. The emphasis on housing *provision* pushed issues of housing *form* to the background: the PAP’s modern-housing program looked remarkably similar to the colonial SIT’s in its emphasis on eradication of “dangerous” kampongs, strengthened land acquisition and renewal powers, and use of shelter policy as a way to control labor, but the PAP transformed a historically controversial rehousing program into a vivid illustration of the party’s good intentions by focusing attention repeatedly and loudly on the timing and scale of rehousing rather than the new housing itself. Taken for granted were these “facts”: The kampong simply could not be saved or fixed with mere fireproofing measures. Urban kampongs represented defunct traditions that physically threatened families and material wealth. Eradication was absolutely necessary, and under the PAP, imminent. By emphasizing the inevitability of change, the PAP’s fire narrative smoothed over a deeply contested, rocky, and unpredictable modernization process. It was a story that could capture the popular imagination.

The party thus built on the foundations of centralized state authority and colonial-era modernization efforts. The PAP leadership also added a critical twist to preexisting housing reforms: Lee Kuan Yew, housing minister Lim Kim San, and others thought of shelter as a quickly expiring commodity, to be replaced frequently and on a scale seen only once before in Hong Kong's 1953 Shek Kip Mei fire. Instead of investing in fewer, high-quality units, the PAP decided to move its entire population up the housing ladder together, step by step. New housing was *meant* to expire quickly, as laborers' savings grew and domestic production of housing materials like steel progressed; Singaporeans would earn their keep building and rebuilding homes, and each step would bring better amenities and ever more modern units. The emotional pull of a large-scale fire, the immediate desperation, and the catastrophe at hand all helped the PAP override dissenters, streamline government action, and disregard democratic decision making. It also helped the PAP take the first critical steps toward more democratic provision of modern housing; ironically, a more democratic distribution of modern housing meant, in this case, a less democratic process of housing design, site selection, and management. A compelling fire narrative thus smoothed the path toward modernization and played a critical part in a profoundly political process.

The Day of the Fire

At first, the fire seemed unremarkable. Whether an act of nature, arson, or accident, mysterious sparks began rising from hillside houses near Tiong Bahru around 3:30 p.m. on May 25, 1961. Within moments, sparks became huge flames, sweeping across the road to a bordering shantytown and engulfing the rough *attap* (natural fiber) or corrugated zinc roofs and wood-plank walls that constituted the overcrowded slums there. The fire moved rapidly across sixty acres of highly flammable squatter structures, oil mills, and timber yards, eating up homes and workplaces without discrimination.

Many Singaporeans remember the moment when they looked up to witness the plume of black smoke signaling yet another kampong fire—alas, an ordinary sight in a city increasingly crowded with highly combustible structures—but this smoke was thicker, faster growing, and accompanied by the boom of periodic explosions. What should have been a day celebrating Hari Raya Haji (a Muslim holiday) soon turned into a horrific shared memory, with young and old rushing into the melee to try and save cherished photos and mementos, to pull out anything of value—pots, pans, chopsticks, large furniture, bundles of soft goods

wrapped in large sheets of cloth—while twenty-two fire engines and the military joined forces to contain the conflagration.

Bukit Ho Swee had been a relatively comfortable settlement with some residents growing vegetables and fruit trees and keeping animals. Extended families whiled away most of their hours outdoors in a “lively and amicable” social life that imparted camaraderie and a “strong sense of belonging and community”; the “village institution *par excellence* was undoubtedly the village coffee shop” found at the intersection of Bukit Ho Swee and Beo Lane.⁹ Alas, all these comforts disappeared totally under a thick cloud of ash as men and women dashed about trying to rescue themselves, their relatives, their friends and neighbors.

Scavengers desperately attempted to save anything of personal or market value, and the panicked search only subsided as the last embers died out. The Social Welfare Department and an army of volunteers rushed newly homeless, exhausted, and beleaguered families out to emergency camps set up in nearby schools.¹⁰ In the morning, some sixteen thousand former residents faced the bleak landscape with a stoicism best captured in an iconic image of three grandmothers standing silently in front of a wasteland. Not much remained: some building frames still stood oddly upright, and everything wore the same dark coating of charcoal ash. The tropical humidity and lush vegetation of Singapore stood in stark contrast to the black-and-white scene of the urban ruins. Surprisingly, the death toll was low: only four people died, although at least eighty-five were injured.

Causes of Flammability in the Urban Core

Urban kampongs tended to be highly combustible in the twentieth century. The term “kampong” did not designate a specific dwelling type but simply indicated a community or cluster of low-rise houses, an informal (extralegal) system of often self-built settlements lacking centralized modern amenities like water and with few single-use spaces and increasingly high densities depending on proximity to the central city. Kampongs often served as transitional spaces from rural to urban living in Southeast Asian cities like Batavia/Jakarta, Penang, Melaka, and Singapore, and the kampongs themselves underwent dramatic changes when the population increased or when the neighboring city incorporated them. While the architectural decisions of residents intensified the flammability of their living quarters—the sloping roofs were made mostly of natural fibers and the walls of wood planks—it was really the lack of organized municipal

services and the relative inaccessibility to firefighters that made these units much more vulnerable than, for instance, the widely spaced, single-family homes along Singapore's Orchard Avenue.¹¹ The unregulated use of firewood and kerosene for cooking essentially guaranteed periodic fires in the city center, and when those fires broke out, inadequate waterworks enabled a small house fire to turn into a neighborhood calamity. Probably the single greatest source of health and fire risk in the region could be attributed to inadequate waterworks: water supply rarely ran to each door, even in the less impoverished districts. Instead, women and men would have to queue up in the morning and evening to collect buckets of water for cooking and bathing from a common tap. In Singapore before the late 1950s, rolling businesses brought pails of water to people's homes, and individuals lined up at a community tap in places like Tiong Bahru, Bukit Merah, or Outram Road.¹² It was not primarily architecture or design that made these houses flammable but rather the absence of services.

Density aggravated vulnerability to fire. Even modern materials like corrugated iron—theoretically more weather- and fireproof—when combined with highly flammable paper and wood, hardly stood a chance of actually resisting flames.¹³ In Indonesia, *kampong* Kebun Kacang, located close to the middle-class neighborhood of Menteng, tripped along happily enough as a “sparsely populated . . . simple peasant village brought into the urban orbit” well into the 1940s, but the massive population explosion of the 1960s and 1970s soon made roomy *kampongs* anomalous.¹⁴ Instead, inner-city *kampongs* grew at an alarming rate both in preexisting and new locations, with construction materials ranging from concrete to bamboo.¹⁵ As late as 1995, the World Bank worried that despite the Indonesian government's massive *kampong* improvement programs including much-needed road widening and water services, the greater use of modern flammable materials and the persistence of overcrowding left many *kampongs* still without adequate services and therefore vulnerable to fire.¹⁶ In short, urban amenities needed to keep up with the rate of increase; modern materials and design did not have intrinsic fireproofing properties.

In Singapore, as in Batavia/Jakarta or other increasingly congested Southeast Asian core cities, *kampong* fires were as much a fact of life as dense lot coverage. There had been *kampong* fires from as far back as the 1830s, three decades before the first volunteer fire brigade formed in 1869, and fires happened so regularly that some older residents in 1961 also experienced firsthand the devastating 1934 Bukit Ho Swee fire. In fact, the colonial authority originally established the SIT in 1927 primarily to plan and lay out roads, and in particular, to establish back lanes as a way of harnessing large-scale fires.¹⁷ Low-rise homemade shelters and capricious site development had emerged over the nineteenth century and

resulted in winding streets with back-to-back houses: like the Dutch in Batavia, the British reviled both as excessively vulnerable to conflagration and contagious diseases. According to British inspectors surveying the city center between 1906 and 1917, housing densities ranged from 635 to 1,304 persons per acre with 18.7 to 44.5 persons per house. Even more alarmingly, the inspectors found that densities had increased at a rate of 15 to 30 percent in that decade. This rate of overcrowding meant that the city center would consistently rise above the Municipal Ordinance of 1896's standard of 350 cubic feet per person.¹⁸ The colonial government finally decided that without rear egress and access routes to the densely populated sections of the downtown region clustered along the Singapore River, fires could not be quickly extinguished.

Still, the limited authority and spare budget of the SIT prevented any quick resolution of overcrowding issues, and the ad hoc construction of flammable structures actually accelerated during the trust's tenure. This was not so shocking given that the cheek-by-jowl living quarters constituted an essential element of the colonial economy. Overcrowding was not merely symptomatic of a push for labor, but rather "became the mechanism by which the urban economy sustained a market for menial and more or less casual labour." According to scholar Brenda Yeoh, "Subdivided tenements, makeshift cubicles, and back-to-back houses were a crucial part of the urban infrastructure by which the coolie population could be absorbed."¹⁹

Even given the daunting challenges of limited budgets and staff, the trust could have made a better impression on the general public and gotten further if it had more adroitly managed its public relations after large, highly visible disasters like the fire of 1934, when six hundred men and two hundred women and children lost their houses at Tiong Bahru and Kampong Ho Swee. Instead of visiting residents and publicizing their prompt relocation, SIT administrators first moved them to the notoriously overcrowded Henderson Road homes that same spring and then one month later, declared the Henderson homes unfit for habitation and tried to move them again. The relocation attempts predictably soured the lodgers' opinion of the trust. The twice-evicted families, having no other recourse, refused to move out and stopped paying rent (since the SIT disallowed payment, having officially evicted them). In November, after six months of lost rent and liability for housing squatters in unsafe homes, the SIT cut off all services including water in a desperate and apparently successful last effort to remove them.²⁰

Not surprisingly, when George Pepler, the much-respected British planner and president of the International Federation of Housing and Town Planning (1947–52), came to Singapore in 1950 to survey the island as town planning

adviser, he targeted overcrowding as the root cause of the island's housing woes. His recommendations predictably followed the patterns already established by his own anti-ribbon development and new town efforts in the UK. Much like his former student Patrick Abercrombie suggested in his 1948 preliminary planning report to Hong Kong, Pepler also recommended decentralization through a tightly circumscribed city center, decentralized urban populations in new towns, and a regional master plan to manage it all.²¹ Pepler imagined the rapid resettlement of urban slum dwellers along with the clearance of their evacuated sites to be at the heart of any real remedy for Singapore's housing woes, and his emphasis on total clearance and his general high-handed attitude toward actual kampong dwellers mirrored that of Abercrombie in Hong Kong: "The rebuilding of the obsolete types of tenements and structures in a condition of decay will require new powers in order to avoid the dangers . . . of piecemeal reconstruction. It should be possible to declare whole areas obsolescent and ripe for rebuilding on a new layout, as is provided for under the English 1944 Act. . . . The only satisfactory way in which this can be done is by acquisition of the designated area."²²

In Hong Kong, Abercrombie asserted that planners would need greater legal powers in order to deal with the "extreme difficulty of reducing and moving" the population, "which [clung] obstinately to familiar localities." Obstinate populations existed in Singapore, too. At least one SIT planning adviser warily predicted resistance to a slum-clearance program in "one of the worst squatter areas on the [Singaporean] Island," the Bukit Ho Swee-Beo Lane-Carey Road squatter area between Havelock and Tiong Bahru Roads. The master plan proposed a "complete redevelopment" of the area, but the planning adviser warned against such simple paper solutions, arguing, "It must be borne in mind that at present more than 10,000 people live there. The problem is therefore of similar proportions to that of the redevelopment of a large Central Area block. Although housing has not been considered in relation to the redevelopment of attap areas, this proposal should, in my view, be tackled within the next five years as it proves a problem of similar urgency to that of central redevelopment."²³

This statement was inadvertently illuminating. Not all overcrowding was the same: although other areas suffered from an equal shortage of services, centralized urban spaces merited greater attention. This pattern could be seen in infant urban renewal programs around the world. Singaporeans participated in an Anglo-American "expert" discussion that increasingly urged the more liberal exercise of eminent domain and that targeted key overcrowded sections of the city in order to lure investors to a "cleaned-up" urban core. Singapore

was not alone in this, nor was it simply part of a “developing world city” phenomenon; rather, both SIT and HDB proponents of resettlement and renewal shared the problems of modernizing cities around the world, including but not limited to New York, Hong Kong, and London. Yes, fires created swaths of impoverished victims, and yes, fires broke out frequently, but the real reason fires like Bukit Ho Swee or Shek Kip Mei “birthed” modern housing in Singapore and Hong Kong, respectively, was because they allowed state leaders to “do” slum clearance “profitably, without losing the . . . votes of the slum dwellers.”²⁴

Political Tinderboxes

Kampongs periodically burst into literal flame, but they also served as political tinderboxes. In many Southeast Asian cities, they created functioning communities with relatively autonomous power structures; they had their own enforcement mechanisms (usually gangs), and they created obligations and networks separate from the central colonial or postcolonial state. As such, kampongs could threaten central authority. Resulting anxieties often manifest themselves in typical upper- and middle-class horror at the conditions suffered in these “teeming” quarters. Not unlike muckrakers or Progressives in the United States and United Kingdom, upper- and middle-class visitors to the neighborhoods clustered beneath the Singapore River expressed outrage and dismay at the conditions people suffered there. Minister of Commerce and Industry J. M. Jumabhoy, after visiting his constituency in Tanjong Pagar in the 1950s, wrote a typical description: “I saw the type of cubicles people were staying in, you know. Oh, in Tanjong Pagar you should see . . . such small cubicles. They have a platform, and twelve, fifteen people sleeping side by side on a platform raised. And then inside with one w.c. . . . in that whole house. . . . [On the] ground floor you will find about twenty people, twenty-five. First floor [was the] same—small, small cubicles. And I said, ‘My God! Something has to be done.’”²⁵ Less emotional but equally attentive, one trust worker described the prevalence of plank and *attap* houses thus: “These houses are deservedly popular in rural areas as they are cheap to erect, and comfortable to live in, particular when they are raised from the ground and situated in adequate compounds. Unfortunately many sites within the Municipal area have been developed with wood and *attap* shacks huddled together in conditions which are not fit for pigs to live in, and they form the worst type of slum.”²⁶ The question was, who was to blame?

British authorities worried constantly that they would be held responsible for such misery throughout their colonies in Singapore, the Federation of Malaya, and Hong Kong. After World War II, Hong Kong settlements grew, in the words of three geographers, “rapidly but insidiously,” and from 1949 to 1956, Hong Kong squatter numbers rose from thirty thousand to three hundred thousand. Population densities rose to five thousand people per hectare. British colonial administrators worried that “dense new squatter colonies [were] now astride or uncomfortably close to all the main approaches to Kowloon. An official observed, “It is of course, dangerous to think that squatter colonies in Hong Kong are virtually the same as . . . the scattered and inaccessible hotbeds in Malaya. Nevertheless, even in the unlikely event . . . that 90 percent of Hong Kong’s squatters proved not only to be peaceable but also to be co-operative with the authorities, the remaining 30,000 could constitute a very real potential threat.”²⁷ Squatter fires could serve as a tipping point, especially since they occurred regularly “with every dry season.”²⁸ In Hong Kong, it was only a matter of time before a large fire erupted: on Christmas day in 1953, the largest squatter settlement, Shek Kip Mei, burned to the ground, leaving homeless nearly one hundred thousand people and eventually triggering a huge renewal, resettlement, and massive public-housing program that embodied the very principle of state-led economic development seen in Singapore a half decade later. Unlike PAP with its public-housing program, however, British colonial leaders dragged their feet in Hong Kong, penny-pinching and resisting an outright provision of public housing until fear of political destabilization pushed them to change.²⁹

Dutch colonists took a different tack, choosing to impose culturally alien regulations that irritated the Indonesian population. Colonists tried to regulate fire risk and hygiene simultaneously in Javanese kampongs by promoting rat-unfriendly stone walls, tile roofs, and other foreign materials (as opposed to wood and bamboo construction), but because European planning standards and building regulations interfered with both the function and the construction of traditional homes, they only contributed to urban kampong dwellers’ displeasure with the Dutch presence.³⁰

In the end, then, the British and the Dutch failed to prove their mettle as true guardians of the people in treacherously flammable urban spaces because that flammability was symptomatic of the colonial economy, because they imposed ill-fitting regulatory frameworks, and because the ultimate goal of the colony was, after all, to make money. According to Paul B. Rich, British last-ditch efforts to improve housing conditions came “at precisely the point when its rule began to be undermined” and were most likely conceived to continue “imperialism by other means.”³¹

The end of the colonial era did not signal the end of kampongs' tinderbox-like qualities. After independence for Malaysia in 1957 and for Singapore in 1965, fire risk became a political hot potato tossed between squatters and states. In Kuala Lumpur, Ipoh, and Johor Bahru, fears of fire continued to permeate planning.³² Malaysian planners played up negative images of squalor and fire hazard in the 1980s in order to portray squatters as "hindrances to 'development' and 'progress,' particularly so when they occup[ied] commercially lucrative land space in a rapidly shrinking urban land bank."³³

Long-Lasting Structural Changes

Fires had the potential to trigger and justify deeper structural changes because of their highly destabilizing character and literal erasure of constraints. The Chicago Fire of 1871 and the firebombing of London during World War II leveled nonviable infrastructure that had physically blocked radical reordering of urban space.³⁴ In Singapore, it was exactly these deeper structural changes that Lee dwelled on when explaining the significance of the Bukit Ho Swee fire in his 2000 autobiography, *From Third World to First: The Singapore Story, 1965–2000*. Writing in startlingly technical language, Lee ignored the raw emotion of the actual moment in favor of an explication of land policy, and specifically, the legal exercise of eminent domain. A strong state had to carefully manage the real estate market in order to adequately address the fallout of a major fire like the one at Bukit Ho Swee, and large conflagrations had more to do with managing land profits and acquiring sites than anything else. The primary importance of the Bukit Ho Swee fire was no longer its ability to inculcate an ethos of shared troubles, its definition of the PAP distinct from its colonial predecessor, or its legitimization of the new government. Lee explained his postfire actions as follows:

I . . . amended the law to allow the government, after a fire, to acquire the fire site at the price without vacant possession, as if the land still had squatters on it. This meant, at that time, about one-third of its market value with vacant possession. In moving the bill, I argued, "It is heinous in the extreme to allow any profit to be made out of this fire. In fact, if any profit is allowed to be made, then it will only be an inducement, a temptation to arson by those who possess land with squatters on it."

Later, I further amended the law to give the government power to acquire land for public purposes at its value on a date then fixed at 30 November 1973. I saw no reason why private landowners should profit from an increase in land

value brought about by economic development and the infrastructure paid for with public funds.³⁵

This was not all. Although not mentioned in Lee's autobiography, the Planning Department soon bent the Fire Department to its will through a careful exercise of the language of emergency.³⁶ According to law, the Fire Department was required to screen all public and private plans and approve all fire exits, but the HDB did not want to be delayed, since speed allegedly lowered prices and allowed for faster rehousing. HDB/Urban Redevelopment Authority architect and town planner Alan Choe explained that the Fire Department and HDB soon developed a "happy understanding." In fact, he remarked, "to this day, I don't think the Fire Department screens HDB plans . . . but all other [private] plans go through the Fire Department."³⁷

The most important changes launched by the PAP and justified by the fire emergency consequently remained hidden from view. When Lee, Goh Keng Swee, S. Rajaratnam, and others met with fire victims to hear their stories, nobody mentioned eminent domain. When the national media distributed gripping images of frantic firefighters and weeping women, not a word was breathed about the importance of government-controlled real estate values. Still, as one National Development Ministry worker hesitantly put forward, "Of course the HDB was a powerful housing machinery. It was more than just a housing machinery. It was almost a political machinery."³⁸ Indeed, the state invoked the paternalistic trope that Singaporeans would do best if they trusted the PAP to know and act with their best interests in mind. To be fair, the PAP leadership was thoroughly sincere in their aims; all acts pointed to a generous, just state, "a fair, not welfare society."³⁹ Meanwhile, leaders carefully concurrently managed public relations. The PAP set up food lines, called emergency meetings, provided army trucks to help families move their remaining goods, and toured fire sites, actions all carefully documented in snapshots (now preserved in the National Archives). With characteristic savvy, Lee also moved quickly to demonstrate transparency in the contentious process of housing allocation. Before the fire, the Allocation Committee of the HDB used a points system that accounted for family size, time of waiting, floor area of existing premises, and other related factors.⁴⁰ Afterward, the board moved to a public balloting system where high-level board officers usually participated in selecting names from a bingo-esque rotating ball. Underneath the flood of information and transparent government action, then, ran a deeper current of the more important structural changes to emerge from the Bukit Ho Swee fire.

Problems still impeded the execution of a picture-perfect fire relocation program, however, despite official optimism and undeniably rapid construction

rates. First, some squatters did not want to be relocated to Queenstown or Saint Michael, both of which were situated northward and farther away from the city center. Second, HDB chairman Lim Kim San simply could not keep up with demand, even though he oversaw the completion of an incredible 15,669 units from February 1960 to October 1962 (as compared with the SIT's 20,917 total units from 1927 to 1959).⁴¹ In 1962, 5,200 applicants registered for flats in the Bukit Ho Swee/Tiong Bahru areas and were relegated to wait lists. By September 1964, that number had grown: 7,141 families waited ever more restively for one-room units at Bukit Ho Swee.⁴² In the meantime, a new squatter community sprouted resolutely on the charred land, a tenacity rewarded with a third major fire that again leveled the settlement in 1968, leaving another 3,000 homeless.

Problems with rapid relocation stemmed, not from a pure shortage of raw housing, but from difficulties coordinating supply, demand, and location. Singaporean residents had geographical preferences, financial limitations, and family size to consider when choosing a new home. Goh, speaking as the assemblyman for Kreta Ayer (a downtown neighborhood near Chinatown), urged Lim to build more one-room units for constituents; although Goh could "understand the reluctance of the Board to build one room units which will cater for the poorest of the poor and accordingly, the upkeep of the homes will not compare as well as those who are better off," he added, "Nevertheless it is a fact that one room units have fulfilled an urgent social need and is one of the most popular steps undertaken by our Government."⁴³ Working-class families could not afford two-room rental costs of \$50 per month when the average worker with a small family only earned from \$150 to 180 per month.

Lim, on his end, tried to convey his commitment to finding a viable solution, noting, "To cope with these applicants who prefer the Bukit Ho Swee area is the primary responsibility of the Board."⁴⁴ Interestingly, despite these troubles, by the spring of 1962 it had become standard to take visiting dignitaries on a tour of the Bukit Ho Swee fire site.⁴⁵ International visitors admired the remarkably rapid housing progress achieved by the board since its inception in 1959, and an Australian MP, Murray Byrne, raved that Singapore's "record in housing not only appear[ed] to have surpassed any country in Asia, but the amount of money [Singapore was] spending on housing projects . . . [was] greater than most European countries who have more money to spend in this important field."⁴⁶ According to Choe, Lim and fellow HDB workers had successfully rehoused everyone in a short eighteen months, and the board could be proud that it had completed 904 units of one-room flats at Bukit Ho Swee, the largest number of such units in all of Singapore, to be occupied almost entirely by former fire victims.⁴⁷

Not all were as enthusiastic as Choe or Byrne, though. Lim wrote to Goh that “sections of the public including some Assemblymen and a number of overseas visitors ha[d] observed that one-room units [were] socially undesirable for families and [were] potential slums.”⁴⁸ Jamming five plus people into one-room units, no matter how affordable, might become its own nightmare, and the board encouraged larger families to migrate upward and outward to slightly less convenient but roomier locations. Demand for one-room dwellings was high among fire victims, over 80 percent of whom wanted to resettle in Bukit Ho Swee, but other Singaporeans preferred larger dwellings. At the same time that there was a shortage of one-room units downtown, then, there were excess units in Alexandra Hill, a neighborhood to the far west of Chinatown and south of Queenstown.⁴⁹ In July 1962, the board allowed families with only three members to apply for one-room units for the first time.

What all this juggling meant for former residents of Bukit Ho Swee was that given the high demand for central city locations, the poverty of former kampong dwellers, and the board’s need to standardize rental fees by dwelling type (\$20, \$40, and \$60 per month for one, two, and three-room units, respectively, in the new estates at Queenstown, Alexandra Hill, MacPherson, Bukit Ho Swee, Kallang, and Saint Michael’s Estates), fire victims typically ended up moving their large families into two- and three-bedroom flats in the outer regions, one-bedroom flats in the Chinatown area, or back to reconstructed squatter settlements in the central city.

The pegging of rental prices below market prices also meant that the HDB needed to subsidize housing. Although the HDB differentiated itself from the SIT in publishing subsidies and making finances relatively transparent, it could afford to go forward with a giant low-cost public housing program only if these subsidies were kept under control. Lee feared “heinous profit” would be made from resettlement fees. According to one newspaper account, compensation “rates [could not] be revised without serious effect upon Singapore’s ability to finance public housing.”⁵⁰ Data from a 1973 survey demonstrated that “an overwhelming majority of the resettled households were former residents of attap or zinc roof houses (69 percent) and shop or row houses (25 percent).” Only a piddling 6 percent came from other types of housing units.⁵¹

By the early 1970s, compensation was seen by some as a sign of a kindly paternalistic government for which to be grateful. Lim Guan Hoo, the representative from Bukit Merah, spoke in parliament of the graciousness of government, despite the fact that he represented one of the poorest areas in Singapore in terms of household income, comparable to Bukit Ho Swee and Kallang Basin: “The Government has already decided to increase the rate of compensation

and *ex gratia* payments to those people affected by the resettlement scheme so that their difficulties can be alleviated. This is another indication of the present Government's pragmatism and its sincerity in looking after the interests of the people."⁵²

In this way, retrospective histories of Singapore's early days glossed over many difficulties and reincorporated the resettlement "miracle" into a national, nation-building story. Fires "proved" that older shop house- and kampong-style buildings could not provide long-term, healthy accommodations to families. Fires demonstrated the vulnerability of tradition, the weakness and frailty of the homemade compared to the industrial and prefabricated. The Bukit Ho Swee disaster in particular was instrumental in convincing Lee, his colleagues, and Singaporeans more broadly that "industrial modernity" constituted the best "metanarrative that would frame Singapore's national identity and . . . create a Global City that, because of its trading links, could escape the constraints placed on it by history and geography."⁵³ Historian Eric Hobsbawm asserted that "nations without a past are contradictory in terms"; Singaporeans faced the challenging task of eradicating tradition deliberately and openly in order to build a new nation.

In 1964, the same year the government began the homeownership scheme that would launch a unique program of anti-inflation (a concern ever since the British Military Administration brought skyrocketing inflation rates), forced savings, and a social security system based on ownership of public-housing units, the HDB printed its annual report with a majestic aerial photo of the new Bukit Ho Swee estate. No other image more perfectly captured the accomplishments of the PAP's first five years: kampongs had been utterly revamped, the old squatter settlements cleared away by unavoidable disaster, and the residents sheltered by a new government that truly cared. This was the new, modern Singapore, a city that had literally walked through fire. The fire narrative proved singularly important in cementing the image of a highly competent, caretaker government in the eyes of the populace, and it allowed the PAP to launch one of the most devastating, thorough, and remarkable urban renewal programs to be seen in the world. When Malaysia would suddenly evict Singapore from their short-lived union in the following year (1965), it would only be logical that a tale of PAP competence should be transformed into an important origins story, part of the lore of a new nation. The Bukit Ho Swee fire had devastating effects as a single historical event, but the potency and longevity of the fire narrative reflected, and continues to reflect, the ongoing utility of a story showcasing heroic protonational leaders and celebrating modern, less flammable homes.

NOTES

1. Oral History of Alan Choe, reel 7, Oral History Collection, National Archives of Singapore (hereafter cited as NAS).
2. Ministry of Culture, Broadcasting Division, *Bukit Ho Swee Fire* filmstrip, NAS.
3. See Greg Bankoff, Georg Frerks, and Dorothea Hillhorst, *Mapping Vulnerability: Disasters, Development, and People* (London: Earthscan Publications, 2004) for discussion of how “natural” disasters relied on socially constructed vulnerabilities.
4. Loh Keng Swee rightly notes that the HDB persistently labeled all urban kampongs “slums” as a way to homogenize and discredit the value of the kampongs themselves. Loh Keng Swee, “Black Areas: Urban Kampongs and Power Relations in Post-War Singapore Historiography,” *Sojourn: Journal of Social Issues in Southeast Asia* 22, no. 1 (2007): 1–29.
5. Examples of such resistance abound. For instance, the Urban Renewal Authority noted that families in Kampong Jagoh and Chinatown refused to relocate in early 1971 because of various reasons, including resistance to higher rents and a desire to stay in their old communities. *Straits Times*, February 20, 1971. For details about Tay Kheng Soon, see Philip Bay interview with Tay Kheng Soon, 1999, Sheltercom, <http://www.geocities.com/newsintercom/sp/interviews/taykhengsoon.html>, accessed November 1, 2008. See also Robert Powell, *Tay Kheng Soon and Akitek Tenggara: Line, Edge, and Shade: The Search for a Design Language in Tropical Asia* (Singapore: Page One, 1997).
6. Joan Hon, *100 Years of the Singapore Fire Service* (Singapore: Singapore Fire Service, 1988), 78–79.
7. D. W. Drakakis-Smith and Yue-man Yeung, “Occasional Paper No. 8: Public Housing in the City-States of Hong Kong and Singapore” (Australian National University, Canberra Development Studies Centre, 1977), 5.
8. Linda Lim, “Social Welfare,” in *Management of Success: The Moulding of Modern Singapore*, ed. Kernial Singh Sandhu and Paul Wheatley (Singapore: Institute of Southeast Asian Studies, 1989), as cited in Greg Clancey, “Toward a Spatial History of Emergency: Notes from Singapore” (Asia Research Institute Working Paper, no. 8, August 2003, http://www.ari.nus.edu.sg/docs/wps/wps03_008.pdf), 10n34.
9. Chua Beng-huat, *Communitarian Ideology and Democracy in Singapore* (London: Routledge, 1995), 81–86.
10. Description drawn from images of Bukit Ho Swee fire (no accession numbers available) and “Our Singapore: Housing,” Radio and Television Singapore News and Current Affairs Series, accession no. 1997019842, January 1, 1963, NAS. See also Goh Sin Tub’s personal narrative at Yong Shu Hoong, “The Great Fire,” October 7, 1988, <http://ourstory.asiat.com.sg/days/fire.html>.
11. For description of typical building materials, see Urban Redevelopment Authority, *Kampong Glam: A Historic District* (Singapore: Urban Redevelopment Authority, 1995), 68–74.
12. Interview with Gnana Sunderam Thevathasan, October 17, 1983, Oral History Center, NAS.

13. The Anglo-French Trading Company sold corrugated iron sheets to the SIT with the promise that modern material was more fire resistant and weatherproof. Letter to the SIT from the AFTC, July 1, 1947, HDB box 1086, NAS.

14. See Lea Jellinek's study, *The Wheel of Fortune: The History of a Poor Community in Jakarta* (Honolulu: University of Hawaii Press, 1991), as discussed in Christopher Silver, *Planning the Megacity: Jakarta in the Twentieth Century* (London: Routledge, 2007), 132–34.

15. By 1969, 24 percent of shelter in Jakarta's roughly five hundred kampongs consisted of solid walls, floors, and roofs, 44 percent had bamboo and thatched temporary structures, and the remaining 32 percent some combination of permanent and semi-permanent construction. Silver, *Planning the Megacity*, 136.

16. World Bank, *Impact Evaluation Report: Enhancing the Quality of Life in Urban Indonesia; The Legacy of the Kampung Improvement Program*, report no. 14747-IND, June 1995.

17. When the SIT began its operations in 1927, it possessed only the power to lay out roads, back lanes, open spaces, and drainage, as well as prepare and implement improvement schemes. It did not have the power to zone, a severe impediment to the enactment of a master plan for the entire island. J. M. Fraser, "The Work of the Singapore Improvement Trust, 1948," Singapore and Malaysia Collection, National University of Singapore (hereafter cited as NUS).

18. Brenda S. Yeoh compiled these statistics from W. J. Simpson, *Report on the Sanitary Condition of Singapore* (London: Waterlow, 1907) as well as municipal health officer reports and memoranda from *Proceedings and Report of the Commission Appointed to Inquire into the Cause of the Present Housing Difficulties in Singapore and the Steps Which Should Be Taken to Remedy Such Difficulties*, 2 vols. (Singapore: Government Printing Office, 1918), in Brenda Yeoh, *Contesting Space: Power Relations and the Urban Built Environment in Colonial Singapore* (Kuala Lumpur: Oxford University Press, 1996), 138.

19. Yeoh, *Contesting Space*, 137.

20. SIT internal memos, 1934, HDB box 1040, NAS.

21. Patrick Abercrombie correspondence, November 28, 1946–December 5, 1947, CO 129/614/2, Public Records Office, London; George Pepler, "A Master Plan for Singapore," Singapore Improvement Trust, 1955, NAS.

22. Pepler, "A Master Plan for Singapore."

23. Memo from Planning Adviser, SIT, to Estates Manager, SIT, January 28, 1955, HDB box 1203, NAS.

24. I chose to use this quote from the correspondence of the UN Expert Mission because it perfectly captured what would become a long-standing HDB interest in slum clearance. The expert mission eventually recommended self-contained settlements (or new towns), a public transport program, systematic urban renewal without "bulldozer addiction," and a "programme of publicity and promotion." The UN-based plan replaced Pepler's. Personal letter from Otto Koenigsberger and Susume Kobe to Charles Abrams, June 17, 1963, reel 24, Charles Abrams Papers, Cornell University, Ithaca, NY.

25. Interview with J. M. Jumabhoy, November 14, 1981, Oral History Center, NAS.

26. Unsigned memo of a member of the SIT, ca. 1947, HDB box 1278, NAS.

27. Quote from *The McDouall-Heenan Report, 1965* (Hong Kong: J. R. Lee, 1967), in Alan Smart, *The Shek Kip Mei Myth: Squatters, Fires and Colonial Rule in Hong Kong, 1950–1963* (Hong Kong: Hong Kong University Press, 2006), 81.

28. T. D. Vaughan and D. J. Dwyer, “Some Aspects of Postwar Population Growth in Hong Kong,” *Economic Geography* 42, no. 1 (1966): 43–44. Although Manuel Castells, L. Goh, and Reginald Yin-Wang Kwok do not focus on fires as an instrument of development, however fortuitous, their book is still useful in explaining the developmental state with concomitant land and housing policies. Castells, Goh, and Kwok, *The Shek Kip Mei Syndrome: Economic Development and Public Housing in Hong Kong and Singapore* (London: Pion, 1990).

29. It is highly probable that SIT workers knew the details of British colonial housing policy before and after Shek Kip Mei, and the highly influential SIT manager J. M. Fraser actually went to work in Hong Kong shortly after the disbandment of the SIT in 1959, thus indicating at the very least a professional connection. I could not find any further evidence of Hong Kong–Singapore exchange either in Colonial Office records in the PRO or in the National Archives of Singapore, however.

30. James L. Cobban, “Exporting Planning: The Work of Thomas Karsten in Colonial Indonesia,” in *The Asian City: Processes of Development, Characteristics and Planning*, ed. Ashok K. Dutt, Frank J. Costa, Surinder Aggarwal, and Allen G. Noble (Dordrecht: Kluwer Academic, 1994), 259.

31. Paul B. Rich, *Race and Empire in British Politics* (Cambridge: Cambridge University Press, 1986), 145.

32. Mohammed Razali Agus, “Malaysia,” in *Housing Policy Systems in South and East Asia*, ed. Mohammed Razali Agus, John Doling, and Dong-Sung Lee (Basingstoke, UK: Palgrave Macmillan, 2002), 131.

33. Brenda Yeoh and Yong-sook Lee, eds., *Globalisation and the Politics of Forgetting* (London: Routledge, 2005), 160.

34. Lawrence Vale and Thomas J. Campanella have recently compiled a fascinating comparative volume on this topic. See Vale and Campanella, *The Resilient City: How Modern Cities Recover from Disaster* (New York: Oxford University Press, 2005). See also the classic study on fires in Chicago, Boston, and Baltimore by Christine Meisner Rosen, *The Limits of Power: Great Fires and the Process of City Growth in America* (Cambridge: Cambridge University Press, 1986).

35. Lee Kuan Yew, *From Third World to First: the Singapore Story, 1965–2000* (New York: HarperCollins, 2000), 97.

36. Clancey, “Toward a Spatial History of Emergency.”

37. Oral History of Alan Choe, NAS.

38. Interview with Tan Chok Kian, February 19, 1993, Oral History Center, NAS.

39. This was the title of the seventh chapter in Lee’s autobiography.

40. Speech by Tan Kia Gan, December 10, 1960, microfilm 1244, NAS.

41. Letter to Chairman by David Wong, Secretary, November 20, 1962, HDB box 1263, NAS.

42. Memo from Lim Kim San, 1963, HDB box 1254; Memo from Tan Tian Boon to Goh Keng Swee, October 12, 1964, HDB box 1263, NAS.
43. Letter from Goh Keng Swee to Chairman of HDB, April 29, 1963, HDB box 1263, NAS.
44. Memo from Lim Kim San, May 13, 1966, HDB box 1254, NAS.
45. Visitor logs, HDB box 1238, NAS.
46. Draft press release, April 6, 1962, from S. Thiruchelvam to Permanent Secretary of Culture, HDB box 1227, NAS.
47. Fire concessions did not end until 1973. Memo from Teh Cheang Wan, February 16, 1973, HDB box 1226, NAS; Press statement, n.d., but most likely March 20, 1962, HDB box 1227, NAS.
48. Letter from Lim Kim San to Goh Keng Swee, May 4, 1963, HDB box 1263, NAS.
49. Memo from Tan Tian Boon to Goh Keng Swee, October 12, 1964, HDB box 1263, NAS.
50. "Fair Terms," no newspaper name, n.d., most likely October or November 1961, HDB box 1223, NAS.
51. Stephen H. K. Yeh, *Public Housing in Singapore: A Multi-Disciplinary Study* (Singapore: Singapore University Press for Housing and Development Board, 1975), 346.
52. Lim Guan Hoo, August 2, 1971, Parliamentary Debates Collection: Legislative Assembly Sittings, Official Report First Session of the Third Parliament, columns 1 to 1408, July 21, 1971, to June 2, 1972, vol. 31, pp. 125–26, NUS.
53. C. J. W.-L. Wee, "Our Island Story: Economic Development and the National Narrative in Singapore," in *New Terrains in Southeast Asian History*, ed. Abu Talib Ahmad and Tan Liok Ee (Athens: Ohio University Press, 2003), 147.

The Beirut Central District on Fire

Firefighting in a Divided City with Shifting Front Lines, 1975–1976

SOFIA TOUFIG SHWAYRI

“They Tried to Burn Beirut” read the main headline on the front page of the Arabic daily *An-Nahar*, a progovernment newspaper, on September 19, 1975. Martyrs’ Square and the surrounding streets in downtown Beirut were the scenes of fierce fighting and ferocious fires. Bullets, explosives, and incendiaries set in flames the buildings surrounding the square and the nearby traditional markets. Firefighters battled the flames for over fifteen hours despite being fired on by militants, but all was in vain. The injured and the dead littered the devastated areas.

An-Nahar talked about an extremist faction that was prepared to burn the capital by destroying its commercial and industrial institutions. *As-Safir*, a local leftist Arabic daily newspaper and a strong supporter of Palestinian refugees, countered by blaming the right-wing Christian militias, al-Kataeb, for intentionally burning property belonging to the Muslim *waqf*.¹ What happened in Martyrs’ Square and its vicinity on the night of September 18, 1975, marked the beginning of a process of destruction that was to extend over several months and would cover the entire Central District. Who tried to burn Beirut? Aren’t fires a natural occurrence of war? What part of the city burned? What spaces were set on fire? What role did professional firefighters play in extinguishing

the fires, and how in turn did the war affect the nature of this profession and its services? If fire is an accelerant that brings about quick change to urban form and consequently causes modification to existing laws, what is the nature of this change? These questions form the main impetus of this chapter as it examines the relationship of war to fires, firefighting, and urban change by analyzing the fires that erupted during the 1975–76 war in the Beirut Central District. Although the Lebanese war lasted fifteen years, from 1975 to 1990, it was formed of multiple conflicts of several rounds and miniwars spanning weeks, sometimes months, occasionally years, all interrupted by periods of perceived peace. It was, however, the first two years that saw the worst fires with the burning of the capital city's economic, political, and social infrastructure paralleling a continuous process of restructuring of the spatiality of the city. This was the precursor to the emergence of the infamous Green Line, which split the city into two parts, with each controlled by a coalition of warring forces.

Burning cities to the ground in times of war has a long history; many have been chronicled in the books of the Old Testament. According to the sociologist Johan Goudsblom, fire has served many purposes in classical wars: two of which stand out: first, to weaken and force the enemy to retreat and abandon his defenses (by setting the fortifications of a walled city alight), and second, after capture, to turn the city into ashes as a way to deprive the enemy of his resources and undermine his morale.² The Lebanese war was an internal war fought among two local warring factions, formed of private militias and not trained armies; these were the National Movement and the Lebanese Front.³ Some saw the war as a challenge to the makeup of the state and the political system, others as its guardians. Classical methods of war were used to further their goals. In 1975 and 1976, destruction by fire of the heart of the capital ensued, for the Central District—the premier political, economic, and social node of Beirut—was the stage for these conflicts. The warring factions first looted its resources and used fires to cover their actions. They then again used flames to deny others the remaining assets, then to weaken and force the enemy to retreat. The Lebanese Front abandoned the area as did the Christian merchants of the souks. Weaponry was primarily individual and light weight, namely, pistols, hand grenades, assault rifles, and rocket-propelled grenades. In those two years, these Lebanese militias were still trying to organize and depended on arms they received from their allies. The National Front was supplied by the Soviet Union, while the Western powers supplied the Lebanese Front. None of these weapons was capable of destroying concrete structures, the predominant building material, but they were sufficient to cause fire when used against shop and hotel interiors. The subsequent destruction of the Central District by fire resulting from the

street warfare exposed the failure of Beirut's fire brigade to recognize urban growth or to develop its antiquated institutional framework inherited mostly from the French Mandate period (1918–43).

The destruction inflicted by the fires of 1975–76 on the port of Beirut, the souks, and the hotels was, however, another fiery chapter in the capital's history. Half a century earlier, fires in the city were almost a daily occurrence. Some of these incidents captured the headlines for months, while others barely made the inside pages. Although their perpetrators remained unknown, some blamed the fires on the growth in insurance and the greed for quick profit. Others attributed the fires to poor, almost nonexistent services, types of building material used, and the compact urban layout. Before the end of the 1920s, firefighters had acquired professional status, were led by an army general, and occupied a purpose-built establishment. This military structure survived long after Lebanon acquired its independence from France in 1943, when the leadership of the fire brigade was handed over to a Lebanese army commander. The inherited structure became central to much of the conflict between the government and members of Beirut's fire brigade from the late 1970s and throughout the 1980s. Furthermore, the failure of the municipality of Beirut, the mother institution for the brigade, to parallel urban growth of fifty years with the expansion of fire services came starkly to the fore in the early weeks of the war. This war experience has shaped the brigade's areas of operations since then.

The 1975–76 fires in Beirut were significant stories in the domestic and international newspapers, and pictures of the capital's fire-ravaged landmark hotels were beamed around the world. The fires and ensuing destruction marked the end of a golden age in the history of Beirut, a time when it was well known as the Paris of the Middle East. This new narrative was focused on the burned-out spaces as the firefighters attempted to extinguish the fires and as they in turn became targets of the combatants. Although the fires in question were caused by street warfare, the narrow, inward, and congested spaces of the souks flanked by often flammable merchandise made the possibility of a conflagration a real threat long before war erupted. Such fires had been occurring since the 1920s, long before the fire brigade was formed. The first part of this chapter will revisit those earlier incidents as it traces the historical roots of the development of fire services in relation to urban form in Beirut.

The second part of the discussion is a narrative of the burning of the souks, analyzing the nature of space and the challenges firefighters faced in carrying out their duties. The chapter ends with an examination of the relation of fire-fighting to the urban environment during the war as both underwent transformation. Furthermore, the end of the two years of fighting was marked by a cease-fire

in 1976 that was secured by the arrival of a coalition of Arab armies to oversee its implementation and paved the way for a decade-long struggle for firefighters as they attempted to confront issues exposed by the war, including their dual military-civilian status. From the late 1970s and throughout the 1980s, firefighters were in conflict with the state, performing their duties while simultaneously protesting, sometimes aggressively.

The Making of a Fire Brigade

Not World War I but the fires of the decade that followed saw the regulation of the built environment and the institutionalization of fire services. The construction material and layout of Beirut's urban environment of the 1920s was in many ways what Stephen Pyne has considered a "rebuilt wildland," having the effect of an artificial fire.⁴ Its built fabric, especially its traditional, historically Muslim commercial core, encouraged the outbreak of fires, very much like colonial Boston, antebellum Pittsburgh, and much of post-Civil War Chicago.

In fact, the contained spaces of a traditional Muslim city often act as hotbeds of fires. The souk, a single covered market street, forms its heart, and a network of these streets forms the market. The early souk was temporary, located in the square facing the mosque where street vendors displayed their goods during the day.⁵ As the market became more consolidated, it acquired a permanent structure that took the form of a "maze of alleyways, dead-end streets, and courtyards," mostly covered with vaults and domes.⁶ The streets were often topped by arcades dimly lit by small, high windows, in a somewhat linear path. The souk, covered or not, gave the feeling of a tunnel because of its narrow width and substantial wall mass (fig. 15.1). Often at the intersection of several streets, one found a higher dome or sometimes no roof at all. In some cases, single streets had gates that were closed during the night. In the souks, one often found baths, caravanserais, schools, and fountains. In some cases, there was an open public space. All these structures were clustered around the congregational mosque.⁷ A wall surrounded the market.

Up to 1840, Beirut was a medieval fortified port measuring a quarter of a square mile in area. Its historic fortified core was a small center of craft production that sheltered many souks, typical of the traditional Muslim city; each souk was dedicated to a specific trade that occupied it permanently and gave it its name. During the nineteenth century, Beirut was transformed into a major seaport and became the most important city of greater Syria.⁸ It was during that same



Figure 15.1. This cartoon likens the streets of Beirut in the 1920s to the Thermopylae pass. (Reproduced from *L'Orient*, January 7, 1925, 1.)

period that the city began to spill out beyond the walls of the old town and started to develop fairly distinct neighborhoods in concentric patterns around the old historic center.

Domestic newspapers from that time reported an increase in the number of fires in Beirut, especially during the 1920s. Despite the importance of the built material of the urban fabric and its fire-prone layout, these reports suggested that most of the fires in the city were driven by the business of insurance and the greed for quick profit. Insurance companies, mainly European, increasingly offered competitive rates for fire insurance policies. However, the escalation in the incidents of fires, especially in the city's commercial districts, did not go unnoticed by the insurers, who responded by tripling their rates as early as 1924.⁹ Almost immediately, the governor of Lebanon, General Vandenberg, introduced a set of measures regulating various aspects of the built environment, some becoming the responsibility of the individual and others those of the municipality. As for the former, Vandenberg's measures included a decree forcing the installation of fire extinguishers in movie theaters, parking garages, and shops selling flammable liquids, and in facilities whose surface areas exceeded fifty square meters.¹⁰ This decree also specified the quantity of flammable materials shops and garages could store.¹¹ Meanwhile, government made it mandatory for shop owners to cover all exposed electrical wires with metal tubes.¹² These measures were all meant to reduce the incident of fires, but other actions designed to limit the spread of fires, such as installing water hydrants in key locations around the city, were not addressed because the cost of such projects exceeded the budget of the municipality. Thus the government was forced to limit the hydrant installation to one place in the Central District, the intersection of Allenby Street and Marseillaise Street, a major thoroughfare forming a boundary of the souks.¹³ To add to the haphazard approach, the government extended the period allowing individuals to install fire extinguishers by fourteen months from its initial deadline.¹⁴ Despite these measures, the fires that erupted in the city were generally the result of lax adherence to, and policing of, regulations: individuals did not adhere to regulations governing the quantity of stored flammable material and ignored the fire extinguisher law; the government failed to inspect. Newspaper reports indicated that police inspection for stored flammable material and subsequent confiscation of excesses started long after the fires in the souks.

The shortcomings in the regulatory framework coupled with an economic downturn and subsequent widespread bankruptcies seemingly encouraged arson with at least one major outbreak per week reported. The lack of water hydrants in the souks' area often made it difficult to contain the flames, forcing

victims to rely on the few privately owned extinguishers available. Investigations into the conflagrations often revealed that shops were insured, some for as little as five hundred English gold pounds and others as much as four thousand pounds.¹⁵

Critics of the fires in the souks were largely content to blame the merchants and their greed despite the lack of water hydrants in the city, the seemingly disorganized operations of firefighters, and the government's failure to implement its own measures. The police were often the first to arrive on the scene, followed later by a team of firefighters, with the former having to perform the duties of the firefighters in the interim. Whenever firefighters participated in actual fire-fighting, they tended to arrive before the water trucks, which often appeared some twenty minutes later, time sufficient for the flames to spread and endanger entire neighborhoods. In fact, notifying firefighters of a fire was not a straight-forward procedure: it required a visit to the police station, where a decision on assembling the appropriate firefighting team for the job was made. Meanwhile, the fire was raging.

The desire for change finally came when a fire broke out in the port of Beirut on the night of May 23, 1927. The port's warehouses were destroyed in what was a disaster not only for Lebanese merchants but for the city as a whole. Firefighters, assisted by the French army, battled the flames for three consecutive nights and performed miraculously despite the absence of water hydrants in the district; this lack was remarkable considering that Beirut was the premier location for the excise of the entire French Mandate region. The firefighters relied on water pumped from the sea.¹⁶ Although the damage caused by the conflagration was extensive, the work of firefighters was recognized and compensated by the director of the port of Beirut, who awarded a monetary gift to each member. Like all the fires that preceded this one, an investigation into its causes was launched immediately. It extended over several months, dominated the newspaper headlines, and involved European insurance companies.

This inquiry confirmed the obvious, namely, firefighters were ill equipped, governmental decrees had not been implemented, and official oversight was deplorably lacking. However, the key role played by the firefighters made the institutionalization of the service urgent. Captain Moriesse, a French army captain, took it upon himself to train twelve municipal guards as professional firemen, housed in a purpose-built firehouse on Riad al-Sulh Square in the Central District. Despite three decades of subsequent urban growth, this remained Beirut's only firehouse until 1956, when a second barrack was built in the Beirut stadium on the southern periphery of municipal Beirut. This became

the headquarters of the fire brigade, replacing the original one. It was from this date that firemen were provided with benefits such as life insurance.

The end of the French Mandate period and the independence of Lebanon meant the withdrawal of the French and subsequently, in 1945, the takeover of the command of the brigade by a triumvirate of Lebanese army officers. This change was coupled with the institutionalization of a new fire regime modeled on the military, with the firefighters viewed as an organized and trained professional unit. In six years from 1946 to 1952, the number of firemen increased from 55 to 110, divided into two main groups, which protected the city twenty-four hours a day, seven days a week.¹⁷ In an attempt to keep pace with the growth of the city, a new brigade was stationed in Bashoura in 1960, less than a kilometer from the barracks of the original fire brigade in the Central District. The period from the early 1960s to the early 1970s was Beirut fire brigade's golden era. Its officers often took part in training courses in France, Germany, and England, where they acquired the latest firefighting and rescue techniques. This was paralleled by the creation of a special fire academy to train Lebanese firefighters as well those from neighboring countries. Members of the brigade also assisted in firefighting in the neighboring Syrian capital of Damascus and the city of Baniyas-Tartous on the Syrian coast.

Despite the transformation that the fire brigade of Beirut underwent from the early days of independence to the early 1970s, it remained incongruent with the city's urban growth. This became apparent very early in the war in 1975. The war as a state of permanent emergency was also instrumental in exposing the failures of the traditional military makeup of the profession, becoming a source of conflict between members of the brigade on both sides of the urban divide and the government during the 1975–90 Lebanese civil war. Though the fire brigade was headed by army personnel and run like an army unit, it was independent of the military, and its members did not share any of the privileges or benefits accorded to members of the regular armed forces.

The Burning of Beirut: Street Warfare and Fires

In March 1976, images of the Holiday Inn in flames in downtown Beirut raced around the globe. The Lebanese capital was marking the end of year-long street warfare and fires that razed much of its Central District, home to its traditional marketplace, modern hotel district, and main port. Throughout the first eighteen months of the war, fires were almost a daily occurrence, scorching its major battlefields: the souks, the hotels, and the camps. The war for the control of the

Central District was fought along two main battlefronts—the souks and the hotels—and defined this early stage of the fifteen-year conflict, making headlines in both the domestic and the international news media. Conversely, the coverage of fires on the urban periphery, resulting largely from the outlying “Battle of the Camps,” remained mainly limited to a few lines in the local press, either because they were seen to be a normal occurrence of war or their location on the fringe made them insignificant. Indeed, most of the industrial zones on the periphery became sites of battle very early in the war. They sustained heavy losses due to fire. As expected, the focus on the image of the Central District and its significance in the national and regional life created two realities, a “displayed” and a “hidden” one. The displayed reality was the source of pride, the financial, tourist, and political node for Arabs and well-to-do Lebanese, while the hidden one concealed the “dark” realities of people living on the fringes, including migrants, displaced persons, and refugees, in informal settlements and refugee camps. These aspects of the Central District and its fringe areas were formerly treated as distinct spatial entities, but the 1975–90 war brought them into full view, in close proximity and often in collision as old linkages gave way to new ones characterized by changed geographies and contemporary experiences. Just as space was targeted, so were the men who put their lives on the line by battling the flames. Some died at the scenes of fire while others were victims of sectarian kidnapping that occurred when in the course of their fire-fighting duties they crossed to the “enemy” side, an area whose spatiality and borders shifted with the fighting.

Less than two days into the war on April 15, 1975, newspapers reported explosives, roadblocks, and fires. However, the first major fire to capture the headlines was the one that broke out on the night of April 19, 1975, at the port of Beirut, setting one of the warehouses in flames. The intensity of the fire darkened the skies above the city in the following days, while on the ground the Beirut fire service was unable to contain the fire and called for help from its colleagues of the airport fire brigade and the Lebanese army. It was estimated that more than four hundred firefighters, thirty fire engines, and three tankers of the municipality of Beirut pumping water from the sea took part in this operation.¹⁸ According to newspaper reports, as firefighters were trying to extinguish the fire, the port was being heavily shelled in an obvious attempt to stop them from doing their job, consequently guaranteeing full devastation. This forced politicians and religious leaders on both sides to urge warring factions to treat it as neutral ground, reminding them of the significance of the port for all Lebanese. Early reports estimated the damage at twelve million Lebanese liras, then equivalent to twenty-four million US dollars.¹⁹ The conflagration at

the port exposed a number of challenges that Beirut's firefighters faced during the first two years of street warfare, a period in which the city's spatiality was constantly being reworked as will be revealed in the remainder of this section.

The end of the first round of fighting a few weeks later in May 1975 heralded a calm that came to an abrupt end in late September as old conflicts resurfaced and new ones broke out. This meant that old front lines in East Beirut and the southern suburbs reemerged and remained fixed in place until end of 1976. The battle for control of the Central District, especially its traditional markets and modern hotels, was fought one street at a time, causing a shift in the front lines and consequently in the barricades separating both warring factions and neighborhoods. This continuous spatial restructuring created a complex maze that firefighters had to negotiate as they battled the flames that burned the city during those first two years. The mapping of this complex spatiality created by street warfare along with those fires that engulfed the Central District from September 1975 to March 1976 aims to reveal the challenges faced during wartime by firefighters and the brigade as an institution specifically, and those who delivered urban services more generally.

Martyrs' Square formed both the stage for and the target of the opening and closing scenes of the battle for control of the Central District and consequently for West Beirut. The opening battle lasted ten days in September 1975 and encompassed the square and its immediate environs. Buildings housing movie theaters, hotels, and souks on its western edge extending to the Ministry of Finance and Riad al-Sulh Square were torched. Meanwhile, parts of the Beirut–Damascus highway, north of Martyrs' Square, emerged as a front line between members of the National Movement and Lebanese Front, as did the highway running parallel to it. The intensity of the fires forced the governor of the city to impose a curfew in an attempt to prevent their spread further. Civilians complied but not the militias. The latter found themselves at liberty to continue battling each other and in the process caused more destruction and fire.²⁰ Firefighters trying to extinguish these fires faced tremendous difficulty reaching the scene due to barricades dividing the warring groups. When they did arrive, they were often injured or even killed in the course of performing their duties.²¹ Religious and political figures called for the Lebanese army to step in and stop the fighting and to prevent the burning of the capital as the prime minister worked hard to broker a cease-fire. The chamber of commerce and industry in Beirut and the chamber of traders pitched in with threats of civil disobedience if their institutions remained unprotected. As negotiations were under way, the intense fighting subsided. Snipers emerged, giving protection to those warring factions that now turned to looting whatever had survived the fires.

A cease-fire of under ten days was broken by a second round of fighting, this time south of Weygand, a thoroughfare northwest of Martyrs' Square. Newspaper headlines announced the second burning of Beirut, adding that this time it was more dangerous. Unlike the first round, militants now made their way to the souks in the middle of the day, vandalized the shops, and then set the whole street ablaze. Fires also erupted on Banking Street, at Maarad and Allenby, in buildings surrounding the mosques and churches in the area. The intensity and number of the fires forced the governor of Beirut to seek help from the fire brigade of Damascus in neighboring Syria. Twelve trucks with seventy-five firefighters joined the Beirut brigade in extinguishing the fires.²² As they battled the fires, the warring factions were moving the battlefield to new streets and subsequently setting more establishments on fire. Nature provided brief respite: a change in weather conditions brought pouring rain that helped quell the raging fires. However, the rain and the efforts of the firefighters afforded only small delays in their spread, and more commercial establishments burned to the west.

Following the razing of the souks, a period of calm reigned, and activities partially resumed in the commercial core. This lull lasted until early December 1975, when the final battle for the control of the center extended westward toward the hotel district, razing the modern landscape and clearing the way for the drawing of the Green Line. In its early stages, militants fought each other in the streets and neighborhoods of the residential areas of Ras Beirut, Kantari, and Spears, south of the hotel district. For weeks the shifting frontlines made identifying enemy territory a complex task until members of the National Movement took control of these areas and took command of the high-rises, until then under the control of the Lebanese Front. Their first objective was the tower atop the hill known as Burj al-Murr, a forty-story structure then dominating the capital's skyline. Its capture turned Fakhreddine Road, a road bordering the western edge of the Central District and running perpendicularly from the coast over the hill, into a demarcation line. This allowed the militants to take their battle strictly to the hotels and their immediate vicinities. Incendiary bombs were exchanged almost immediately between the two sides positioned in the hotels, setting interiors aflame, floor by floor. Even after one faction gained control of a hotel, lower floors were set on fire as part of the "cleansing" process, to totally eliminate all remaining pockets of resistance.²³ At this advanced phase of the battle, the newspapers shifted their discourse from talking about these fires as one big incident and instead reported them as a series of incidents, detailing each individual outbreak.

As the National Movement militias took control of the hotels, they pushed the Lebanese Front back toward Martyrs' Square. As the latter forces retreated, they burned everything in their way, finalizing the cleansing process. Several fires erupted in the port of Beirut, burning many warehouses and threatening the silos housing the country's food supply, which forced the prime minister to entreat both sides to stop targeting the port. He reminded them that the port was neither for the Christians nor for the Muslims, for the left wing nor right wing, but for everyone, and that destruction of the granaries could only result in the whole population starving. He also called for all parties to stop firing at firefighters, their trucks, and their equipment so that they could save Beirut and Lebanon from a looming disaster.²⁴

The battles fought in the Central District and the ensuing conflagrations that forced firefighters to put their lives in danger in 1975–76 coupled with the change in their working hours has, in the decade and a half of war that followed, laid the foundation for a new relationship between the fire brigade, the city, and the state. The state of emergency imposed by the street warfare in the first two years of the war transformed not only the working space of members of the brigade but also the working day. From April 13, 1975, to October 14, 1990, firefighters were subjected to a crisis schedule, covering 24 hours a day, and 7 days a week for 365 days a year, with no weekend or vacation breaks. The firefighters' roster sharply contrasted with the less-than-regular hours of other employees in the devastated and burned-out municipal offices of Beirut. The destruction and subsequent branching out of the municipality into sixty-five offices spread across the capital, away from the Central District, encouraged a lax schedule for its employees. In fact, some never showed up for work and were still paid.²⁵ However, the chaotic situation created by militia control, the large wave of population displacement, and the disruption in basic services made it very difficult for the municipality to continue to collect taxes, its main and probably only source of financial revenue and subsequently the main source of salaries. In fact, the budget deficit not only affected salaries but also the ability of the municipality to provide the fire brigade with basics like uniforms, hospitalization, recruitment of new firefighters, promotions, or for those hired in 1972 change in status from temporary to permanent.²⁶

The moving battleground within districts and neighborhoods of the capital in the first two years of the war greatly shaped the nature and delivery of basic services. Private providers, militias, and local governments all took part in the provision of services, leading in some areas to duplication and in others to scarcity. The division of the city with the emergence of East Beirut as a separate entity

from West Beirut at the end of 1976 resulted in all the fire stations being in West Beirut and East Beirut having none. Given the personal danger of crossing from one side to the other to fight fires, the creation of a third barrack was a necessity.

The expansion of Beirut's fire brigade into the underserved, predominantly Christian, East Beirut was an idea predating the war period. Recognizing the importance of a fire brigade in the life of a growing city in the 1960s, the head of the brigade conceived of two projects: one consisted of dividing the city of Beirut into four zones—West in Hamra, East in Ashrafieh, South in Raml, and the Central District—each to be served by four teams of firemen housed in their own department; the other project was to turn Beirut into the headquarters for all fire departments in the country. The two projects remained ink on paper. Beirut's fire brigade did not keep pace with the city's urban growth, and by mid 1975, only two fire departments served administrative Beirut, both located on its western side. In fact, only administrative Beirut and the city of Tripoli had fire departments in the whole of the country, forcing the former to fight fires not only in the capital but across Lebanon.²⁷ This situation changed in September 1983 when the Civil Defense was formed to aid, rescue, and fight fires across all Lebanese territory except in the capital, turning Beirut's fire brigade for the first time in its six-decade history into a department that served only the capital. The formation of a third barrack occurred almost a year before the Green Line materialized at the end of 1975, and long before any institution was forced to extend coverage to the other side of the line to serve individuals who had ceased making the dangerous journey to West Beirut. The formalization of the Green Line did not stop firefighters in all three barracks from coordinating their efforts in battling a conflagration or protesting the job situation. In fact, their job situation is what probably kept the firefighters a close-knit group.

There are official and unofficial counts of the number of explosions, assassinations, injuries, and deaths, of the number of displaced persons and Lebanese who emigrated. There are no such statistics for the number of fires. This is despite the fact that the word "fire" was used extensively in the newspapers, either literally to refer to actual fires, usually significant ones where the target was of economic or symbolic significance, or metaphorically when referring to the intensity of the fighting. Rarely, if ever, were small or "insignificant" fires reported, particularly ones that affected areas outside the Central District, more especially so if they were in residential areas. If they were listed, the reader had to look for them carefully in the inside pages, as they often appeared at the end of a section detailing the battles of the previous day. Fires were

common throughout the war, from the early days when the fighting consisted of street confrontation, to later periods when long-range missiles, incendiary in nature, were more common; however, some phases of the war saw the worst, especially in the first two years, in 1975–1976, and during the Israeli siege and invasion of West Beirut in 1982.

In those first two years of the war, when battles primarily took the form of street warfare in the Central District—and especially in its historic core—fires were common, burning the souks, hotels, government buildings, offices, and religious structures. The destruction accelerated a migratory process already under way since the early 1960s whereby businesses started moving out of the Central District to newly emerging centers. Businesses continued to move to alternative locations until very little commercial life remained in the center.

The contained nature of the souks aided the fire's spread. However, to treat these fires simply as an expected outcome of battle not only downplays their significance but overlooks important aspects of firefighting during street warfare as well as building and property laws and the politics of development before the war. To fight fires is a service provided by the city for the city and often is established in at least its major districts. In Beirut, however, expansion of the fire service did not follow the city's urban growth, leaving an entire section of the city without one during the battles of 1975–76. Like personnel performing any emergency service during war, firefighters are placed on high alert as both their work and its dangers are magnified. In an internal war with shadowy combatants whose makeup is constantly shifting due to changing alliances, firefighters face additional challenges posed by physical and human barriers placed on the unpredictable battlefield of street fighting (fig. 15.2). The combatants created barricades that disconnected neighborhoods from one another, which often blocked the firefighters' path, hindered their movement, and therefore helped determine the degree of devastation caused by the flames. This situation made road safety an important factor that firefighters had to consider when heading toward a fire. The circumstance of war may have actually encouraged some warring factions to set places on fire knowing that the associated difficulties would make fighting the fires almost impossible. In the absence of a fire-alert system that connected all buildings in the city of Beirut to a central fire control, firefighters had to rely on word of mouth, radio news, or telephone calls to learn about a fire. Telephone lines were almost never operational. From the early days of the war, telephone service was interrupted when the post office building in Place de l'Etoile, west of Martyrs' Square, received direct hits. The situation was exacerbated when the electrical network that provided the phone service's power was likewise impacted. In 1996, long after the war ended in 1990, a project to create a central

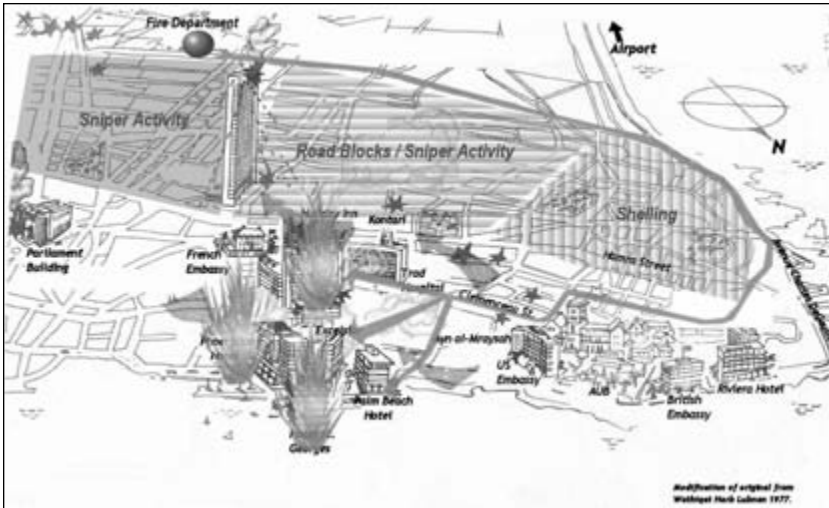


Figure 15.2. Map showing obstacles to firefighters battling fires. (*Documents of the Lebanese War*, 1977. Map courtesy of Arabian Center for Research and Documentation, Mar Elias, Beirut.)

alert system at the fire brigade headquarters connected to all buildings in Beirut was initiated. Soon afterward, however, it was shelved once more due to lack of funds.²⁸

As the war progressed, the situation worsened for the firefighters and their ability to provide services. However, the destruction and resultant disruption in their firefighting did not stop them from providing other types of services for the people; for example, during the Israeli invasion of West Beirut in 1982, firefighters distributed water to neighborhoods that had none.²⁹ People devised solutions to many problems they faced in the course of the war; such measures included the use of private generators for electrical power no longer provided by the public utilities. However, no such cover was really practical for the fire services: the Beirut fire brigade reached the end of the war with heavily damaged machines and three bullet-ridden trucks from an original thirty-five in 1975, with half of its men wounded and more than a dozen dead. From the last group to join the department in 1972, a total of 250 individuals, only 125 had survived by 1996, and few of them reached retirement age. (Firefighters are expected to retire between the age of fifty-four and fifty-eight, unlike members of the military, who could serve until age sixty-four.)³⁰

Members of the Beirut fire brigade hold military titles, wear military uniforms, and are housed in military barracks, but they are government employees and do not enjoy any of the benefits granted to members of the Lebanese army and internal security forces. Unlike army personnel and police officers, for whom one year of service in times of war is equivalent to three years in peacetime, firefighters are granted no such distinction for years of service. This situation seems especially unjust when one considers the dangers firefighters face on the job. At the time of this conflict, members of the fire brigade did not enjoy free hospitalization and could only receive medical service at a military hospital situated on the Green Line, the front line between the warring factions throughout the entire war period. For instance, if a firefighter sustained a life-threatening injury, there was no mechanism of restitution; if he was killed, his family was left with no compensation.³¹

Their military status added to firefighters' woes, especially since their military-style uniforms identified them as agents of a system playing a valuable part in developing and enforcing safety codes that the militants resisted, thus making them "legitimate" targets.

Seeing their job as that of rescue, aid, and firefighting, areas that differentiate them from the military, members of the fire brigade demanded a change to their dual military-civilian status. When all political promises failed, firefighters protested their situation by going on hunger strikes while on the job; as a result some of them became very weak and required hospitalization. When nothing changed and the firefighters realized that the general public knew little about their grievances, largely because local newspapers of all factions underreported their grievances and kept their major activities buried in the inside pages, often under inappropriate sections, they decided to march in the streets of the capital. All their complaints fell on deaf ears. The firefighters' list of demands simply continued to grow as timely items were added to their list of issues.

Changes to the building and property law have been equally slow. It was only in 1997 that legislation for public safety and protection from fires in buildings was enacted; this law has subsequently been twice modified. The building law drafted prior to the war period, dating in part to 1954, had no mention of fire, likewise the one issued half way through the war in 1983. A large part of the Central District (except for its later western expansion and Banking Street) was a product of the nineteenth century and the French Mandate period, so fire safety measures are particularly scant. In its rebuilding of downtown Beirut, Solidere, the Lebanese company for the development and reconstruction of Beirut Central District, employed new regulations and guidelines in all its

building designs and construction, all in line with international standards. It relies on private security companies, who now number more than one hundred, to provide it with security and safety, including firefighting services, a service that the public sector is still unable to perform very efficiently. Almost two decades have passed since the end of the war in the 1990s, and the fire brigade is still understaffed and underequipped.

NOTES

1. "The Kataeb Escalation Kills, Destroys and Burns," *As-Safir*, September 19, 1975. *Waqf*'s property endowment set aside for religious or charitable purposes.
2. Johan Goudsblom, *Fire and Civilization* (London: Allen Lane, 1992), 108.
3. The National Movement constituted a coalition of left-wing militias and Palestinian militant groups, and the Lebanese Front a coalition of Christian right-wing militias.
4. Stephen J. Pyne, *Fire: A Brief History* (Seattle: University of Washington Press, 2001), 106.
5. Nezar AlSayyad, *Cities and Caliphs: On the Genesis of Arab Muslim Urbanism* (New York: Greenwood Press, 1991), 58.
6. *Ibid.*, 103.
7. Eleanor Sims, "Markets and Caravanserais," in *Architecture of the Islamic World: Its History and Social Meaning*, ed. George Mitchell (London: Thames & Hudson, 1995), 100.
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Who Burned Cleveland, Ohio?

The Forgotten Fires of the 1970s

DANIEL KERR

In October 1965, Cleveland, Ohio, mayor Ralph Locher officiated a “home burning ceremony” and torched four abandoned houses with the help of the city’s fire department. The first one burned in an hour, “aided by a stiff breeze and 20 gallons of kerosene.” Basking in the warmth of the burning home, Locher reveled, “I never thought I’d stand by and watch a place burn, but this is a beautiful sight, isn’t it? It has such a cleansing effect.” Locher started a fad of sorts as countless others would conduct their own burning ceremonies in the city for the next two decades.¹

What prompts a mayor to introduce a policy of controlled burns in a densely populated city? Proponents of using fire as a tool to manage forest and grassland areas have based their case on the ecological benefits of the controlled burn. For forests, the controlled burn can, among other things, reduce fuels and prevent future high-intensity fires. Locher’s reasoning shared some parallels to this line of thinking but ultimately was rooted in a different logic. He staged his home-burning ceremony with the expectation that fire would cut city demolition costs and clear out abandoned buildings from the city’s eastside urban renewal areas. While the urban renewal program did seek to reduce the population density in the region, it had nothing to do with fire prevention.

Rather, Locher burned homes in order to restore profitability in the city's real estate market.²

The African American neighborhoods he intended to burn down had been hit especially hard by the corporate restructuring that followed the economic recession of 1958. In response to the business slump, many companies began relocating their factories beyond the city's boundaries. The outward flight of manufacturing jobs left a disproportionate number of black Clevelanders without work. High unemployment rates curtailed the post-World War II migration to the city and prompted a downturn and eventual collapse in the area's housing market. Prior to this recession, the neighborhoods' property owners had made substantial profits on their investments as they subdivided homes and apartment buildings to house the influx of black migrants who came to work in the city's burgeoning post-World War II industries. But what had been one of the city's most profitable investments quickly soured. By the early 1960s, eastside landlords found themselves unable to sell their properties and dependent on a tenant base that was increasingly unemployed. Many began pulling capital out of these structures by cutting back on repairs and, in some cases, abandoning their properties. With his fire-enhanced demolition program, Locher sought to reduce the volume of housing units in the market, create vacant lots that could be redeveloped for middle-class housing, and facilitate the expansion of the area's major institutions such as the Cleveland Clinic and the Cleveland Playhouse.³

From 1965 through the end of the twentieth century, fire played a prominent role in restructuring residential landscapes in Cleveland and other urban areas across the United States. Humans intentionally set these fires to achieve widely divergent ends. In the mid-1960s, working-class African Americans utilized fire to protest police brutality, unemployment, urban renewal, and consumer exploitation. Subsequently, faced with a collapsed housing market, landlords turned to arson as they sought to squeeze capital from their properties in the 1970s. While the public sector sought to suppress the first set of fires in order to protect private property, they conveniently ignored the second crisis as arsonists burned tens of thousands of homes. Private arsonists worked in concert with city demolition crews to destroy over twenty-four thousand housing units in the city throughout the 1970s. Together they created the hundreds of acres of vacant lots that developers would turn to in the late 1980s.

Public memories of these fires have fixated on the first set of fires set by rioters, but the vacant lots and fire-scarred landscapes that characterized inner cities across the United States in the 1980s were not, for the most part, caused by these fires. The memories have not only excluded a whole group of fire setters from the historical record; they have offered up a narrative of regeneration that

obscures the social costs of this urban transformation. The narrative assigns blame for the destructive fires on the young African American radical, while it positions the real estate developer as the architect of renewal.

Not only do the urban fires of the 1970s lack a place in public memory; they fit quite awkwardly in the historiography of fire. Historian Stephen Pyne argues that the urban built landscape “is as much a fire environment as forests and fields.” Prior to the late nineteenth century, conflagrations swept across cities’ dried fuels in a pattern similar to that in the natural and agrarian landscapes surrounding them. Periods of rapid urban growth led to greater risks of fire as fuels accumulated in densely packed areas. However, in the second half of the nineteenth century, a fire gap emerged as expanding urban populations for the first time accompanied a decreased number of fires. L. E. Frost and E. L. Jones argue that improved fire regulations, less-flammable building materials, larger lot sizes, and better street water supplies created this gap. Johan Goudsblom posits that improved firefighting techniques and technologies also played a role, and Pyne emphasizes that fire insurance companies “brought building codes under the regimen of capitalism and the discipline of the market.” While Pyne emphasizes that modern cities “remain fire-driven ecosystems,” these historians identify the San Francisco fire in 1906 as the last of the major conflagrations. So why did large sections of Cleveland burn seventy years after the entrenchment of the supposed fire gap? To answer this question, we must examine the political economy of fire. Just as several forest ecologists argued in 1974 that we needed to promote the “skillful application of fire as a management tool” in their seminal work *Fire and Ecosystems*, urban policy makers embraced “the lost art” of fire to reshape the urban landscape in a manner more conducive for capital accumulation.⁴

Fire as a Tool for Resistance

On the afternoon of July 24, 1966, a heated argument developed between the white owners and several black patrons of the Seventy-Niner’s Café at East Seventy-Ninth Street and Hough Avenue. The bar, which served a primarily black clientele, stood at the heart of the Hough neighborhood—an area that had transitioned in the 1950s from a white into a black working-class district. Tensions in the neighborhood were simmering as a result of high rates of unemployment, numerous incidents of police brutality, and deteriorating housing conditions. Shortly after the argument came to a close, the bar had been robbed, and a large jeering crowd gathered outside in the intersection.⁵

The crowd made a half-hearted effort to burn down the Seventy-Niner's Café, and it also directed its anger toward other white businesses and institutions. The crowd moved down Hough, breaking into stores, looting them, and then setting them on fire (fig. 16.1), chanting, "Burn, baby, burn." When the police tried to establish a mobile command post in the area, the post came under heavy gunfire from snipers shooting from apartment roofs and windows. A group of rioters lobbed Molotov cocktails at the police, smashed their car windows, and slashed their tires. One patrolman radioed headquarters, "This is just like Vietnam." Even the fire department faced harassment as it sought to put out fires. A hundred people commandeered a pumper and pulled the hose away from the firemen trying to put out a fire—prompting the fire chief to pull back his men from the neighborhood. The following day, fire lieutenant James Ginbotham reflected, "A lot of us were thinking of quitting—we're not hired to fight a guerilla war and that is what this is."⁶

On July 20, two battalions of the National Guard that were ready for active duty in Vietnam rolled into the city. The looting and fires continued for ten days before quieting down enough for the National Guard to leave. City leaders were convinced a cadre of communist-inspired black nationalists had organized the riots. The selection of looting and arson targets appeared to be well organized. Crowds deliberately looted and firebombed the city's urban renewal office. Others burned a segregated school where a civil rights activist had recently been killed. While the crowds mostly destroyed white-owned businesses, they also left some alone and destroyed a few black-owned stores. The police department learned that in one case, a white-owned bar was left standing because the owner's blonde-haired wife was known in the neighborhood as a "soul sister." Another white business was spared because black families lived in the apartment above the shop. A black business was firebombed because "the man charged inflated prices." Rather than acknowledge that the crowd was motivated by a shared sense of grievances, police chief Richard Wagner determined that neighborhood activists Lewis Robinson and Harlell Jones had planned everything through their "fire-bomber training school."⁷

At a grand jury investigation of the riots, Jones and Robinson laughed at the charge that they ran a bomb-making school. "We don't have to teach kids to pour something into a bottle," Jones argued. "We're a little more advanced than that." The use of fire as a tool of resistance was hardly a new tactic and not something that would require coursework. Sociologist Johan Goudsblom argues, "Fire is a popular weapon for those who have no access to the state monopoly on organized violence." Peter Linebaugh and Marcus Redicker note that as far back as the earliest slave rebellions in North America, arson "was a common



Figure 16.1. A sixteen-year-old youth stopped and frisked for carrying a can of gas during the Hough riots. Twenty years later, as the city turned vacant lots over to private developers, the young black incendiary would become an iconic figure blamed for the devastation of Cleveland's eastside neighborhoods. (Photo courtesy of *The Cleveland Press* Collection, Cleveland State University.)

element of destruction” because “fire was the most accessible of weapons among the dispossessed.”⁸

While the grand jury blamed Robinson and Jones for the riots, the nation’s newspaper reporters flocked to Hough in order to find out for themselves why everyone was angry. Julius X, the operator of the Beauty Hut, reflected, “The white man is reaping what he has sown. He is learning that you can’t push people around.” A teenager responded, “It would help if the police stopped bugging us all the time, picking people up off the streets for no reason.” “It’s the cheating by white merchants,” another rioter reasoned. “High prices for relief people. The lousy credit buying. The bad credit ratings. The garnishees on the paycheck . . . If that ain’t bad enough, it’s that juvenile police record following you around from job to job, from high school to grave.” Jamie Green, seeking to reposition the arsonists’ acts in line with Mayor Locher’s own fire-starting activities, reasoned, “We’ve done the city a favor. Look at the urban renewal we have accomplished.”⁹

The rioters, however, sought to achieve a different sort of renewal in their communities. In 1968 *The Cleveland Press* reported that a new breed of militant leaders could be found in the city: “Their slogan is self-determination—control by ghetto residents of the neighborhoods in which they live.” The city’s thriving black nationalist movement sought to capitalize on the vacuum left by the burned-out white businesses through the development of black-owned enterprises and the control of local community services and institutions. Black activists, who in the fall of 1967 played an instrumental role in electing the city’s first black mayor, Carl Stokes, had reason to be optimistic.¹⁰

Although Mayor Stokes’s administration had an uneasy relationship with the nationalist movement, he developed a city program to support many of its projects in hopes of maintaining order. For a brief moment, the strategy appeared to be working on both sides as black-owned businesses began to fill in the void left by the destruction of white-owned stores, and the city remained relatively calm after the assassination of Martin Luther King Jr. The city police, however, never embraced the mayor’s strategy as they continued to aggressively harass black nationalist groups. Their efforts to disrupt the activities of the Afroculture Shop and Bookstore led to a second major rebellion that quelled support for Mayor Stokes in the white business community.¹¹

On July 23, 1968, court bailiffs delivered a twenty-four-hour eviction notice and the police surrounded the home of several members of the Afroculture Shop and Bookstore. While both sides blamed the other for starting the shooting, no one denies that a raging gun battle between police and nationalists ended up killing or injuring at least twenty-two people. As the shooting subsided, a huge

crowd had gathered along nearby Superior Avenue. When one of the snipers' bodies was carried out toward the intersection, a police car was hit by a firebomb and exploded in flames. The crowd dragged another policeman from his car and beat him. Sensing the situation was beyond their control, the police abandoned the scene. The crowd quickly spread along Superior Avenue and looters emptied stores along the street for over fifty blocks. Close to twenty major fires were set, including an entire block of buildings at East 105th Street and Superior Avenue. When firefighters arrived at the scene of several fires, they found the hydrants were open—frustrating their effort to connect their hoses and severely reducing the water pressure. At other fires, gangs of youths threw bottles and rocks at them. The crowd ran white reporters out of the neighborhood and firebombed a newspaper radio truck. The unrest prompted Mayor Stokes to turn to the Ohio National Guard for help. That evening 15,400 Ohio National Guardsmen had been mobilized, and 2,600 troops would be on the street by daylight. By dawn the worst violence had abated.¹²

The following night, Stokes agreed to have only black police officers patrol the area with the assistance of five hundred black nationalists. The combined forces could not stop all the looting. By morning, thirty-six stores had been broken into, and three fires had been set. The mayor's decision to rely on peace patrols received heavy criticism from several city councilmen and merchants who claimed Stokes allowed the mobs to have a "field day." One owner of a clothing store claimed that a black policeman stood by and watched as his business was looted. White city councilmen insinuated that the peace patrols advised people that they could loot but not burn stores. The white reaction, however, was countered by black police officers who were on the scene. They charged that many of the merchants were playing the "insurance game." The merchants had called for police protection while they cleared their stores of the most valuable merchandise, and then the proprietors gave permission to the gathered crowds to take the rest—reporting everything as a loss.¹³

Rioters set thirteen more fires and looted four more stores by the end of the week, but the rebellion gradually lost steam. After the violence subsided, a task force of architects and contractors identified seventy-three damaged properties and assessed the property loss at \$1,087,505. The hardest hit among the sixty-three businesses were grocery, furniture, and clothing stores. Homes were left alone. As in the Hough rebellion, the targets were not randomly chosen. While watching a grocery store burn across the street, an elderly black man told a black reporter: "The goddamn white devils were selling that rotten meat. . . . But they got to that Devil and they put a barbecuing on his goddamn rotten meat." While a group of kids attempted to set fire to a white reporter's car

across the street, a disabled veteran told the same reporter: "I want to see whitey burned out of this area and black people go into business here." Many people on the streets during the crisis, according to Wayne State University researcher Paul Lowinger, expressed this sentiment. Lowinger, who rushed investigators to Cleveland as soon as the disturbances began, concluded: "Black control of the ghetto was foremost in the minds of the rioters."¹⁴

The Glenville shoot-out reverberated across the country as people presumed that this was the first major attack to be instigated and planned by black militants against white police officers. Fearing this rising militancy, local business leaders and the press pronounced that Stokes had lost "His Old Ace in the Hole" and could no longer be depended upon as "a safeguard." Nationally the electorate lurched rightward and elected Richard Nixon to the United States presidency that fall.¹⁵

While participants in the post-Glenville shootout rebellion had turned to fire once again as a means of enhancing black control of the community, black nationalists became increasingly critical of using arson as a tactic. They witnessed white storeowners use the fires set by rioters to their own advantage as they sought to pull their capital out of the community. By opening the doors of their shops to looters, these merchants conveniently secured insurance payments, and the fires destroyed the potential for future black businesses to use the storefronts.

Fire as a Tool for Capital Accumulation

In response to the Hough riots, in early 1967 the Cleveland Associated Foundation funded the establishment of the Plan of Action for Tomorrow's Housing (PATH) committee. Along with a handful of ministers and "established" community leaders, the committee consisted of developers and corporate executives from local industries and banks. PATH's committee chair, James Huston, reasoned: "It costs too much to maintain a ghetto. Riots are too expensive." He argued: "To prevent the continued decline of our City and community, there must be attracted into the City of Cleveland residents, both white and Negro, of higher income. At the same time there must be a dispersal of lower income groups, both white and Negro, out of the Central City and into the community at large."¹⁶

PATH opposed the large-scale clearance strategies and concentrated public-housing developments that stood at the core of the pre-Hough riot urban renewal proposals. PATH pressed for "Open Housing" and rent supplements

for low-income families to facilitate their dispersal to the suburbs. Within Hough, PATH sought an expansive rehabilitation program carried forward by non-profit development corporations. Furthermore, PATH advocated for selective demolitions and the establishment of a city land bank to assemble vacant lots for new construction. The proposals established many of the key components that would shape the city's policies toward Cleveland's black working-class neighborhoods. However, they did not embrace the cataclysmic policies that would mark the triage strategies of the 1970s. PATH believed in the potential for revitalizing the neighborhoods' buildings even if they hoped to disperse many of its residents.¹⁷

After winning the mayoral election, Stokes adopted PATH's strategies as his official development program. Stokes named Irving Kriegsfeld, the director of PATH, to head the Cuyahoga Metropolitan Housing Authority, and he engaged in an ambitious plan with the support of local banks and businesses to rehabilitate Hough. Marking the optimism of the era, William Adams, of the Greater Cleveland Growth Association, emphasized: "There is a strong belief in the business community that something bold, dramatic and effective must be done immediately to meet this city's housing needs. . . . A lot of valuable land is available for use in Hough and other areas of the city."¹⁸

PATH did have its critics. John Fockler, vice president of the Cleveland Development Foundation—an organization that promoted the large-scale clearance projects of the urban renewal era—warned that the rehabilitation efforts would only forestall the inevitable. While Hough had been enormously profitable for landlords in the 1950s, Fockler noted that the aftereffects of the recession of 1958 led to economic collapse: "Disaster came to the Hough housing market. Vacancies occurred, for rent signs appeared, rental costs fell by as much as 25 percent in many cases, collections became difficult, and the value of real estate became a small fraction of its former levels. Those who sought riches in owning slum property suddenly were trapped with poor investments."¹⁹

Since the early 1960s, landlords had begun disinvesting in their properties as vacancies grew and rents, for the first time anyone could remember, decreased between 5 and 10 percent. By 1965, the disinvestment began to show substantial signs of structural deterioration and abandonment. Rather than rehabbing substandard units, Fockler argued that the city needed to promote a program of massive demolition to "eliminate the surplus of housing" and "raise the average rental rate to a level which [would] sustain operating costs and support the loans to rehabilitate good units."²⁰

The Stokes reform strategy stalled as funding dried up after the Glenville shoot-out. The business community grew to embrace Fockler's pessimistic view

and call for the large-scale demolition of the eastside neighborhoods. In 1971, they threw their support behind the white Republican candidate Ralph Perk, who would initiate the triage policies of the 1970s. Following Perk's election as mayor, Cleveland's *Plain Dealer* editorialized: "[Hough] has become redundant. . . . These are not optimistic times, and the plight of the black ghetto no longer brings forth men nor solutions. It's being shrugged off by many, feared by most. . . . It is the American dream turned nightmare. Hough is your typical American ghetto and there is nothing you can do about it."²¹

The enthusiasm behind the proactive housing reforms in the late 1960s died. Hopes for structural rehabilitation gave way to Perk's policies, which promoted the complete obliteration and dispersal of Hough and Glenville's working-class African American neighborhoods. His approach mirrored changes at the federal level. In 1972, George Romney, secretary of the Department of Housing and Urban Development (HUD) in President Richard Nixon's administration, argued that "outmigration" and the "process of abandonment and neighborhood decay" would be essential to make large blocks of cleared land available for redevelopment. In 1973, President Richard Nixon froze all federal housing programs—signaling a dramatic shift away from post-World War II urban renewal policy. The Housing and Community Development Act of 1974 officially abolished urban renewal, and in its stead established the Community Development Block Grant (CDBG) and Section 8 housing voucher programs. HUD hired Anthony Downs to advise local planners how to use neighborhood "targeting criteria" to allocate CDBG funds.²²

Downs's 1973 book, *Opening Up the Suburbs*, provided the intellectual backing for the federal shift toward "triage planning." Downs encouraged the withdrawal of all public and private funds from the poorest areas of potential unrest, the "deliberate dispersion" of the urban poor to the suburbs through housing vouchers, and the establishment of land banks to accumulate property in these areas for the eventual reuse by the middle class. The goals were not new to Cleveland's city planners; however, the CDBG program provided them with the framework to put these ideas into action. The proposals had the added benefit of veiling the government's role in the deterioration and demolition of working-class black neighborhoods in a decades-long process.²³

Presenters at a 1975 land-use conference at Case Western Reserve University offered the clearest articulation of Cleveland's triage policy. In the keynote address, Anthony Downs implored the city to adopt his "modified triage" approach: "It is a far more effective use of resources than the worst-first strategy in terms of attracting private dollars into further investment. And such 'leveraging' is crucial if you are to really improve conditions in the city. . . . The

political difficulty with the modified triage strategy is that residents of the worst-condition area will oppose it—naturally. . . . But you must face up to it if you want funds spent on neighborhoods to have any positive long-run impacts.”²⁴

Cleveland city planner Norman Krumholz and community development director Ruth Miller heartily agreed with Downs. Krumholz argued that the city had to focus its rehabilitation and conservation effort on “more stable fringe neighborhoods” that were “in the initial, not the final stages of deterioration.” Ruth Miller concurred: “We have to work where we think we can do some good.” Krumholz maintained that development efforts would be wasted in poverty-stricken neighborhoods where residents could not afford “more than a small fraction of market rents for a new apartment.” The goals in these areas “should be more modest.” Instead of saving these sections, Krumholz stipulated that the city would direct any money spent on these areas toward demolition and the acquisition of vacant lots in a municipal land bank for future redevelopment. Krumholz warned that this would not be a “short-term proposition” because a “profitable re-use [was] not yet in sight.”²⁵

At the conference, county auditor (and future Cleveland mayor, Ohio governor, and US senator) George Voinovich enthusiastically threw his support behind the triage policies, arguing: “The urban wasteland of today could be the growth frontier of tomorrow.” Modeling his plan after a land-banking proposal adopted in Saint Louis, Voinovich called for easing foreclosure laws to speed up the accumulation of vacant lots. Voinovich’s optimism caught on with the local media. *Cleveland Press* real estate writer Fred McGunagle wrote: “Vacant inner-city land—Cleveland’s curse of the 1970s—could turn out to be the city’s greatest blessing in the 1980s and ’90s. . . . The weed-filled vacant lots where houses have been demolished could, by the year 2000, be the heart of the thriving, revitalized city.” McGunagle continued: “Cleveland’s centrally located vacant land could offer a tremendous opportunity—one that in the past has existed only in cities hit by disaster, by fire or earthquake or war.”²⁶

The phenomenon of housing abandonment had first become apparent in the Hough and Central neighborhoods as early as 1965. Abandonment, however, dramatically escalated between 1969 and 1972. Property owners left a total of 3,475 structures in the city to rot during this period; the hardest hit areas were in the eastside black working-class neighborhoods. An Urban League study noted that the flow of conventional mortgage lending and investment funds ceased in each of these neighborhoods between three and ten years prior to the onset of abandonment and left landlords in “an untenable market situation.” After landlords had “exploited the property of its value,” they found that the “accumulated costs of unpaid taxes, deferred maintenance, burdensome

mortgages, and if it [had] been demolished at public expense, the repayment of demolition expenses, [made] the property an economic liability.” The report concluded: “Final abandonment is assured at this point. . . . In such instances, non-payment of taxes represents the final profit-taking of the owner.”²⁷

By law, landowners still were responsible for the costs of demolishing their properties. The City Planning Commission noted that landowners protected themselves from this law through complicated partnership schemes and bogus real estate sales that shielded their liability and displaced the actual costs of demolition onto the taxpayers. Between 1966 and 1971, the city demolished 1,287 structures through its Operation Demolition program. Upon his inauguration, Perk more than doubled the rate of demolitions, destroying 1,412 structures from 1972 to 1974 and putting the city on a pace to eliminate over 4,000 housing units a year. Between 1965 and 1972, the city paid \$1,344,300 on demolitions and received only \$128,000 from the county as repayment of its demolition liens. In a city faced with declining tax revenues, demolition costs became one of the fastest-growing expenditures.²⁸

Increasingly the city viewed these housing structures as an overaccumulation of combustible debris standing in the way of future progress. To minimize removal costs, the city encouraged demolition contractors to raze these homes by burning them. The policy provoked a backlash from surrounding residents. Neighbors complained of constant smoke from a burn site on East Seventy-Fifth Street and Woodland Avenue. Helda McDonald reported to the press, “I had trouble crossing the street yesterday because the smoke was so thick.” Another burn site on East Fifty-Fifth Street and Woodland Avenue prompted a lawsuit by the Legal Aid Society, claiming, “Fires are permitted to roar out of control.” By 1972, the city had enacted new regulations that prohibited public contractors from engaging in open burning. The regulations caused demolition expenses to increase 70 percent. Perk’s administration attempted to keep demolition costs down in part by allowing contractors to smash houses and dump the debris in the basement. By 1976, the city abandoned the policy as it became clear that this practice would undermine the future ability to redevelop the property. The city discovered another cost-saving measure: allow the owners to burn their buildings themselves.²⁹

While the nation remained transfixed over the burning of the Cuyahoga River on June 22, 1969, few paid much attention to the firestorms sweeping Cleveland’s eastside in the 1970s. Between 1970 and 1971, incidents of arson in the city doubled. Arsonists set over one thousand fires in buildings within the city in the first half of 1971 alone. Even during the height of urban tensions in the late 1960s, arsons never exceeded a thousand over an entire year. With fires

raging on the city's east side, fire chief William E. Barry declared he would keep his men out of the burning buildings. "It's not worth the danger to our men," Barry asserted, to let them fight fires in "some of these places that aren't occupied or useful properties." In the early 1970s, the local press attempted to attribute the increased number of fires to disgruntled neighborhood residents, kids playing with fires, vagrants living in the buildings, pyromaniacs, and militants—pointing a finger at anyone but the building owners themselves.³⁰

Neighborhood residents and community leaders were the first to recognize that landlords were using fire for their own ends. One elderly woman outside a burned-out dry cleaning business told a reporter, "Mr. Charlie is paying a few potheads (dope addicts) to burn so that they can collect some insurance—they want to clean out the neighborhood, rebuild it so the whites can come back and reclaim it, rebuild it." Firefighters found that they no longer faced any community resistance when putting out fires. Tony Richison, president of the Hough Community Opportunity Board, stressed that militants sought community control of vacant buildings and no longer had any interest in arson: "How are you going to get the white man to straighten up by burning down your own neighborhood so he can collect insurance? There are few places here owned by blacks. A lot of whites still have insurance on their houses. Some pros out here are setting these houses on fire in two or three places. Kids don't do that."³¹

As arson continued to mount, it became less tenable to deny the motivating factors. In early 1973, the Ohio FAIR Plan Underwriting Association reported that 80 percent of the money it paid out in fire-loss claims involved arson or "suspicious circumstances." The association, established in 1968, consisted of a pool of all Ohio fire insurance companies that insured properties that would otherwise be rejected as too high risk. The Federal Riot Reinsurance Act of 1968 assured that the federal government would provide reinsurance to companies for catastrophic loss in those states that established a FAIR plan. With the federal government subsidizing the industry against losses, Gary Plosker, an insurance adjuster for the General Adjustment Bureau, highlighted the industry's general indifference to arson: "You more or less get to the point where you accept arson as a way of life, as bad as that sounds."³²

In Cleveland in the 1970s, arson had become an everyday way of life. The city identified a total of 1,593 arson incidents in 1974 and 1,976 incidents in 1975. In 1975, fire insurance underwriters dubbed Cleveland "the arson capital of Ohio" after they paid out \$2,386,457 in the city from November 1970 through September 1973. In the early stages of the firestorm, *Plain Dealer* reporter Richard Peery toured the area near Quincy Avenue and East Seventy-Fifth Street and observed: "It might as well be a village in Vietnam after a bombing run."³³

For a large number of unscrupulous landlords, arson provided the last means to squeeze capital out of their real estate holdings. In an exposé for *The Cleveland Press* on the city's profit-seeking infernos, Terry Johnson wrote: "Desperate businessmen sometime turn to the time-tested way out of an economic crunch: insure and burn." Businessmen altered books to inflate the value of their business, and property owners would frequently engage in low-cost cosmetic repairs to inflate the claimed value of their property prior to burning it down. Another technique used to boost the paper value of a building was to sell and resell it before the final two steps: "fire and death, collect insurance."³⁴

In the midst of this wave of arson, Mayor Perk cut back and withdrew fire services from the very neighborhoods hit hardest by fire—signaling the city's complicity in the crime. While the city built new fire stations to cover two newly constructed downtown developments, Perk systematically ordered the closing of fire stations on Cleveland's eastside. In February 1973, the city abandoned Engine House 35 on East Ninety-Third Street and Union Avenue, the first of several planned closings. Within weeks, a seven-year-old girl died when her home burned on East Seventieth Street, an area that had been covered by the shuttered station. The president of the Firefighters' Union, Jack Gannon, blamed the death on Perk. The death prompted the courts to stall the closing of four more stations in fire-prone areas. Gannon argued that the closings would greatly increase response times: "As professional firefighters we felt a deep sense of alarm and dismay at the attempts to open the door to disaster. . . . The Perk administration has repeatedly raised ill-advised, short-sighted and highly dangerous proposals to cut the level of manpower available to fight fires and save lives."³⁵

But in 1975, the courts refused to block the mayor as he laid off over 119 firefighters—further reducing the force from its 1973 level of 1,375 to 1,100 men. Again he ordered the closure of three eastside stations. Throughout the seventies, as the city burned down, the mayor closed five fire stations, eliminated twelve fire trucks, and laid off hundreds of firefighters. Midway through the decade, fire inspectors found themselves so understaffed that they were at least eighteen months behind schedule. With only fifty arsons in 1962, the city supported nine investigators in the arson squad. By 1975 Cleveland employed three investigators to uncover clues on close to 2,000 intentional fires. The *Press* reported in 1978 that for every one hundred cases of known or suspected arson, only two cases would result in conviction, and hardly any of these convictions would result in jail time.³⁶

Whereas the fires set during the 1960s rebellions generated intense publicity, the arson epidemic in the 1970s prompted little concern outside the neighborhoods

that were hardest hit. When newspapers reported on the fires at all, they covered them as disconnected incidents. Only a few articles addressed the phenomenon of arson at all, and these articles generated little indignation. As the *Plain Dealer* editorialized, the inner city had been “shrugged off by many.” This lack of attention to Cleveland’s inner-city fire epidemic was hardly unique. In his study of fire in Los Angeles, Mike Davis contrasts the fixation on the naturally occurring fires in Malibu with the “scandalously little attention [that had] been paid to the man-made and remedial fire crisis of the inner city.”³⁷

Cleveland faced its worst fire disaster in thirty years on the evening of May 5, 1976. An empty house was set ablaze at 8210 Dawn Avenue in the Kinsman neighborhood—a property that was part of an unsettled estate whose heirs had not paid any taxes since 1967. With heavy winds, the fire rapidly spread to twenty-seven homes. When firefighters arrived on the scene, they found that the water pressure in the hydrants was too low to effectively do anything. Within three hours, the fire continued to grow, and over sixty single-family homes completely burned to the ground (fig. 16.2). The incident proved more of the exception than the rule as most homes burned one at a time throughout the decade. The prolonged firestorm climaxed in 1979, when the city recorded 4,240 incidents of arson. With the fuel of abandoned homes significantly depleted and Cleveland’s eastside neighborhoods decimated, Senator John Glenn announced he was introducing proposals at the federal level to beef up arson protection and detection: “We have built momentum, I think, for the beginnings of an all-out war on professional ‘torches’ and absentee landlords who have had a literal ‘free ride’ until now.” By then it was too late. Arson had already destroyed tens of thousands of housing units and produced the foundation for the housing crisis of the 1980s.³⁸

Between 1970 and 1980, the Hough neighborhood alone lost 8,412 housing units—nearly 40 percent of its total stock—and its population dropped dramatically from 53,408 people in 1970 to 22,423 in 1980, a 58 percent decline. During the same period, neighboring Glenville, Fairfax, and Saint Clair–Superior lost 8,897 housing units (over a fifth of their total 1970 units) and 51,108 people (42 percent of the total 1970 population). Over 70 percent of the housing units that the city lost during the 1970s and 46 percent of the population loss came from these neighborhoods alone. The over fifteen thousand intentionally set fires that decade destroyed the large majority of these housing units. Many people displaced by the city’s triage policy moved to East Cleveland, a suburb that had a higher percentage of its population in poverty by 1980 than the city of Cleveland. Others moved to nearby inner-ring suburbs or to outer areas within the city. And a growing percentage of people were left without homes.³⁹



Figure 16.2. The smoldering remains from the Kinsman neighborhood fire on May 5, 1976, that destroyed over sixty single-family homes. The tragedy was unusual as the large majority of houses set on fire during the 1970s burned one at a time. (Photo courtesy of *The Cleveland Press* Collection, Cleveland State University.)

Fire and Public Memory

In December 1994, the *Plain Dealer* reported that Hough, “a weedy, deteriorated community[,] already [was] transforming itself. Shabby wooden houses and vacant lots, scars lingering from the infamous Hough riots of July 1966, [were] slowly being joined by the type of large brick homes more often found in the rolling hills of [the outer suburbs].” The fire-resistant single-family mansions were part of a development called Renaissance Village built on an eight-acre site in the heart of Hough (figs. 16.3a, b). They signaled the arrival of the “growth frontier” identified by Voinovich in 1975. The city heavily subsidized the new construction with tax abatements and land grants in hopes of luring prosperous families back into the city. Lauding the development of these luxury homes, community development director Terri Hamilton reasoned that construction was not “causing the displacement of people.” She argued, “Most of the housing is being built on land that was vacant pieces of property.” The city’s role in the creation of this landscape had receded into the shadows of memory.⁴⁰

The riots had been burned into people’s consciousness, and undoubtedly they were spectacular and destructive events. But this overexaggeration of the



Figures 16.3a, b. The image on the left was taken at 6318 Hough Avenue on May 19, 1967. The image on the right was taken at the same location on December 21, 2007. This house is part of the Renaissance Village development, which supposedly did not cause displacement because it was constructed on “vacant pieces of property.” The history of the destruction of the black working-class community has largely been lost to popular memory. Forgetting this history helps insulate the city from claims that it should invest more in low-income housing and from critiques of its policy to subsidize luxury, single-family homes. (*Left*: photo courtesy of *The Cleveland Press* Collection, Cleveland State University; *right*: photo by author.)

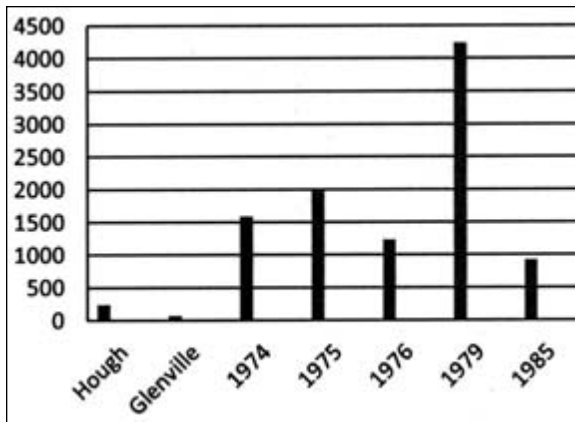


Figure 16.4. Incidents of arson in Cleveland, Ohio. The fire-induced destruction during the 1970s far surpassed the damage caused by fires during the Hough and Glenville rebellions of the 1960s. (Data from *Plain Dealer*, January 19, 1976, May 31, 1976, August 17, 1978; *The Cleveland Press*, December 21, 1979; and George V. Voinovich Mayoral Papers, accession 89-105, folder 15, container 8, and folder 5, container 5, WRHS.)

riots' power served some interests at the expense of others. The widely held memory that the riots created the devastated landscapes of the 1980s absolved the city of culpability and attributed blame for the wreckage to the black rioter. The numbers of intentionally set fires in the 1970s and even 1980s, however, dwarfed the numbers of fires set during the riots (fig. 16.4). These forgotten fires enabled property owners to squeeze the last bit of capital from their investments. Insurance companies, subsidized by the Federal Riot Reinsurance Act of 1968, were less than vigilant as the property losses mounted. And city officials themselves saw the fires as facilitating their larger goal of clearing expansive areas of land for future redevelopment. Individually, the fires of the 1970s and 1980s did not consist of one major event, but collectively they had a devastating affect—radically altering the urban landscape in a fashion similar to that of the major conflagrations of the 1800s.

Paying attention to these fires reinforces as well as challenges our understanding of the historiography of fire and the urban fire gap. To some extent, this arson scourge of the 1970s reiterates points made by fire historians. The large lot sizes in most cases hindered the rapid spread of fires from structure to structure except in a few cases, such as the disastrous East Eighty-Third Street fire (fig. 16.5). Furthermore, cutbacks in fire services, subsidies that decreased the vigilance of insurance companies, and an extremely permissive attitude adopted by the city and federal government facilitated the proliferation of fires. In addition to lot sizes, different historians have identified these groups as instrumental in establishing the fire gap in the first place. The burning of inner cities in the 1970s and 1980s required a tremendous amount of work as arsonists individually set over fifteen thousand fires in Cleveland alone. Bridging the fire gap required a systematic effort rooted in a larger drive to destroy capital in order to create the conditions deemed necessary for its future accumulation.⁴¹

In late twentieth-century urban settings, humans utilized the tool of fire and tapped into the power of the memory of fire to gain advantage at the expense of others. Rioters in the 1960s embraced fire to drive white businessmen out of their neighborhoods in hopes that black residents would control the renewal they assumed would inevitably arise from the ashes. Following the Glenville shoot-out, this use of fire gave way to another. In the 1970s, city officials hoped that property owner-set fires would drive working-class black residents out of the area and create large cleared areas that could eventually be redeveloped for the middle class. The latter strategy won out, but city officials in the 1980s conveniently hid behind and utilized to their advantage the public memory of the young black incendiary of the 1960s. Throughout this period, urban fire ecology was inextricably tied into Cleveland's political economy as different



Figure 16.5. The spacing between the houses helped hinder the spread of this intentionally set fire from structure to structure. L. E. Frost and L. E. Jones argue that large lot sizes significantly aided the emergence of a fire gap. The lot sizes, however, could not save houses like this one from the more than fifteen thousand intentionally set fires in Cleveland throughout the 1970s and 1980s. Four-year-old Stephanie Gates died in this blaze at 6109 Belvidere Avenue on April 11, 1975. The arsonist was never identified. (Photo courtesy of *The Cleveland Press* Collection, Cleveland State University.)

groups sought to tap into its power to promote their desired version of neighborhood succession.

NOTES

1. *Cleveland Press*, October 12 and 14, 1965.
2. *Cleveland Press*, May 25, 1965. For more on the history of controlled burns in wildland areas, see Stephen Pyne, *Fire in America: A Cultural History of Wildland and Rural Fire* (Princeton, NJ: Princeton University Press, 1982).

3. For more on deindustrialization and the collapse of housing markets in Cleveland, see Daniel Kerr, *Derelict Paradise: Homelessness and Urban Development in Cleveland, Ohio* (Amherst: University of Massachusetts Press, 2011).

4. Stephen Pyne, *Fire: A Brief History* (Seattle: University of Washington Press, 2001), 102, 109, 114, 115; L. E. Frost and E. L. Jones, "The Fire Gap and the Greater Durability of Nineteenth Century Cities," *Planning Perspectives* 4 (1989): 341, 344; Johan Goudsblom, *Fire and Civilization* (New York: Allen Lane, 1992), 178–80, 192–93; T. T. Kozlowski and C. E. Ahlgren, eds., *Fire and Ecosystems* (New York: Academic Press, 1974).

5. *Plain Dealer*, June 23, 1966; Louis Masotti and Jerome Corsi, *Shoot-Out in Cleveland: Black Militants and the Police; July 23, 1968* (Washington, DC: Government Printing Office, 1969), 36.

6. *Cleveland Press*, July 19, 1966.

7. *Cleveland Press*, July 27 and 28, 1966; *Plain Dealer*, July 22, 1966.

8. *Cleveland Press*, July 27 and 28, 1966; Goudsblom, *Fire and Civilization*, 208; Peter Linebaugh and Marcus Redicker, *The Many-Headed Hydra: Sailors, Slaves, Commoners, and the Hidden History of the Revolutionary Atlantic* (Boston: Beacon Press, 2000), 197.

9. *Plain Dealer*, July 20 and 22, 1966; *Cleveland Press*, July 20, 1966.

10. *Cleveland Press*, October 9, 1968.

11. *Plain Dealer*, July 25, 1968; August 12, 1969; *Cleveland Press*, April 19, July 25 and 27, 1968; April 23, July 20, 1970; *New York Times*, July 28, 1968; Masotti and Corsi, *Shoot-Out in Cleveland*, 40–41.

12. *New York Times*, September 2, 1968; *Plain Dealer*, July 24 and 25, 1968; *Cleveland Press*, August 9, 1968; Masotti and Corsi, *Shoot-Out in Cleveland*, 47–55, 61–62, 66–67.

13. *Cleveland Press*, July 25 and 26, 1968; *Plain Dealer*, July 26 and August 11, 1968; Masotti and Corsi, *Shoot-Out in Cleveland*, 71–76.

14. *Cleveland Press*, July 26, 1968; *New York Times*, July 26 and 28, 1968; Masotti and Corsi, *Shoot-Out in Cleveland*, 76–82.

15. *Plain Dealer*, July 26 and December 22, 1968; October 3, 1970; *New York Times*, July 28, 1968; *Cleveland Press*, July 26, 1968.

16. Charles Beard Papers, folder 25, container 1, Western Reserve Historical Society (hereafter cited as WRHS), Cleveland, OH.

17. *Cleveland Press*, March 14, September 5, 1965; *Plain Dealer*, March 14, April 6, 21, and 23, 1967; Charles Beard Papers, folder 25, container 1, WRHS.

18. *Cleveland Press*, March 22, 1968.

19. Federation for Community Planning Papers, folder 214, container 9, WRHS.

20. Cleveland Development Foundation Papers, folders 1, 3, 4, and 5, container 30, WRHS.

21. Hough Area Development Corporation Records, folder 38, container 20, WRHS; Urban League of Cleveland Records, series II, folder 1, container 1, WRHS; *Plain Dealer*, January 21, 1972.

22. Hough Area Development Corporation Records, folder 493, container 25, WRHS; George S. Dively Papers, folder 232, container 6, WRHS; John T. Metzger,

“Planned Abandonment: The Neighborhood Life-Cycle Theory and National Urban Policy,” *Housing Policy Debate* 11, no. 1 (2000): 7–40; *Cleveland Press*, March 12, 1973; *Plain Dealer*, April 9, 1976.

23. Anthony Downs, *Opening Up the Suburbs: An Urban Strategy for America* (New Haven, CT: Yale University Press, 1973).

24. *Cleveland Press*, January 9, 1976.

25. *Cleveland Press*, January 9, 1976; Ralph J. Perk Papers, folder 974, container 64, folder 1132, container 73, WRHS.

26. *Cleveland Press*, January 9, 1976.

27. Urban League of Cleveland Records, series II, folder 1, container 1, WRHS; Ralph J. Perk Papers, folder 641, container 44, WRHS.

28. Ralph J. Perk Papers, folders 641 and 644, container 44, WRHS.

29. *Plain Dealer*, July 4, 1969; December 11, 1972; October 21, 1976; *Cleveland Press*, December 8, 1965.

30. *Plain Dealer*, July 7, 1971.

31. *Plain Dealer*, September 5, 1971; *Cleveland Press*, July 7, 1971.

32. *Cleveland Press*, January 26, 1973; *New York Times*, November 10, 1980; Ohio FAIR Plan Underwriting Association, *About Ohio FAIR Plan*, www.ohiofairplan.com/about.html; *Plain Dealer*, April 7, 1975.

33. *Plain Dealer*, September 5, 1971; April 7 and May 8, 1975; May 31, 1976.

34. *Cleveland Press*, December 3, 1978.

35. *Cleveland Press*, February 13, March 9, and August 2, 1973; December 31, 1974.

36. *Cleveland Press*, August 28, 1979; *Plain Dealer*, January 29, May 4, and May 8, 1975; August 16, 1978; February 3, 1981.

37. *Plain Dealer*, January 21, 1972; Mike Davis, *Ecology of Fear* (New York: Metropolitan Books, 1998), 99.

38. *Cleveland Press*, May 6, 1976; December 13 and 21, 1979; *Plain Dealer*, May 11, 1976.

39. Daniel J. Marschall Papers, folder 46, container 2, WRHS; *Plain Dealer*, March 21, 1976; January 6, 1980; George V. Voinovich Mayoral Papers, accession no. 89–105, folder 22, container 9, WRHS.

40. *Plain Dealer*, March 22, 1993; December 21, 1994.

41. During the 1970s, arson plagued inner cities across the country. The Bronx borough in New York City had over 20,000 incendiary fires from 1974 through 1977. The neighborhood had been so ravaged that a German film crew chose to shoot a World War II movie about firebombed Dresden in the South Bronx. Between 1976 and 1977, the Bushwick neighborhood in Brooklyn lost one-third of its housing units to these fires. Nationally, incidents of arson jumped by over ten times from 1964 (63,750) to 1980 (670,000). *Washington Post*, January 1, 1978; March 20, 1982; *New York Times*, November 10 and 12, 1980.

“There Is More to This Fire
Than Meets the Eye”

*Anatomy of Fire Outbreaks in Lagos, Nigeria,
1980–2008*

AYODEJI OLUKOJU

Recurring conflagrations in the West African port city of Lagos in the 1860s–1880s—which earned it the reputation of a “veritable *fire-place*,” reminiscent of the “flowers of Edo” discussed in Jordan Sand and Steven Wills’s chapter in this volume—and since the 1980s have attracted popular commentary and newspaper coverage in Nigeria.¹ However, the causes, management, and aftermath of these outbreaks, which raise critical issues of governance, have barely received attention in Nigerian historiography.² Yet the fire incidents of the 1980s–2008 not only differ from those of the nineteenth century; they also epitomize the crisis of Nigeria’s post-1970s political economy, which was dominated by the export of crude oil. This is illustrated by the patterns, dynamics, management, and aftermath of major fire incidents at some critical sites of economic and socio-political contestations—shantytowns, markets, and strategic high-rise buildings—in Lagos between 1980 and 2008. These incidents are symptomatic of public sector failure, as reflected in government policies on urban planning, electricity, housing and water supplies, fire prevention, and the management of fire outbreaks.

Several key issues of governance—supply of potable water and electricity, effective firefighting services, urban housing, and town planning—are implicated in the Lagos fire disasters. The failure of the state sector to provide adequate

urban infrastructure, especially a regular supply of electricity, forced many inhabitants of Lagos to rely on gasoline-powered electrical generators, which often exploded when overused or powered by contaminated fuel.³ Firefighting was hampered by the lack of water supplies and citizens' violations of town planning laws, often with official complicity. Consequently, even when firefighters responded to distress calls, their fire engines were often hindered by insufficient access roads and neighborhood security gates. The government, too, exploited postfire reconstruction to renovate markets at no political cost and to gain political capital.

The politics of arson accompanied the sudden wealth that accrued to Nigeria, a major oil-exporting country, following the Arab–Israeli war of 1973. Massive public earnings without corresponding expenditure controls and accountability permitted high-scale theft of public funds, the evidence of which corrupt officials used arson to destroy, along with several high-rise public buildings.

The discussion in this chapter is based largely on newspaper reports and commentaries. These sources capture popular perspectives on fire outbreaks and, especially, the voices of the victims and other stakeholders. While the personal prejudice and ideological leanings of a reporter or the newspaper house could influence the slant of an editorial or a report, and sensationalism often colors political reporting, the reporting of social issues, such as fire incidents and similar communal tragedies, is generally balanced and credible. News reports from different newspapers were compared and supplemented with anecdotal evidence and the author's personal experience of living in the city since 1987.

Lagos: Nineteenth- and Twentieth-Century Antecedents

The port of Lagos was a major outlet for the transatlantic slave trade between the early eighteenth and mid-nineteenth centuries. In 1851, the British, purporting to abolish the slave trade, intervened in a dynastic dispute in Lagos and formally imposed colonial rule in 1861. By 1900, Lagos had become West Africa's leading port city and commercial center.

The population of Lagos grew steadily from 25,083 persons in 1866 to 37,452 in 1881 and 41,487 in 1901. It rose to 73,766 in 1911, 98,303 in 1921, 126,474 in 1931, 230,256 in 1950, and 655,246 in 1963.⁴ By the late 1990s, Lagos had attained the status of a megacity, with an estimated population of 12 million in 2006.⁵ The metropolitan area covered 18 square miles in 1911, 24.24 square miles in 1931, and at present, approximately 100 square miles.

A major consequence of the population explosion was the haphazard pattern of settlement on the two major axes of human occupation: Lagos Island and the Mainland. The colonial government operated a policy of residential segregation by creating exclusive residential quarters for the expatriate community at Ikoyi and Victoria Island, while leaving the indigenous community to occupy other parts of Lagos Island.⁶ By the early twentieth century, the African section of the city had become overcrowded and was the site of bubonic plague outbreaks between 1924 and 1930.⁷

Throughout the nineteenth century, most houses in the African section were constructed with bamboo and thatch, given the relative poverty of the people and the slow adoption of metal roofing sheets. These combustible building materials facilitated fire outbreaks in the city.⁸ However, most of the outbreaks were contrived by human agents, often for political reasons. Michael Echeruo, citing a Lagos newspaper (*Observer*, November 5 and 26, 1887), remarked that “Lagos was the ‘veritable *fire-place*’ of the West African Coast with an average of ‘at least’ two fires every night.”⁹

The British colonial government responded by promulgating in 1863 “An Ordinance for the Better Preservation of the Town of Lagos from Fire.” Inhabitants of the city were given five months to replace the thatch roofs of their dwellings with “material which are [*sic*] not easily inflamed.”¹⁰ However, most inhabitants of Lagos could not afford to buy metal roofing sheets. Consequently, the government sought to promote the use of metal roofing sheets by exempting the item from import duty.

The commercial boom of 1918–20 fueled heavy investment in modern buildings and a “car boom” in Lagos.¹¹ Under the pressure of modernity, corrugated metal sheets eventually displaced thatch as roofing material in the metropolis at least by the 1930s. Still, wood and other combustible material remained in use in constructing temporary shelters, especially in shantytowns, which sprouted with the phenomenal population explosion and spatial expansion of Lagos from the 1950s onward. Major fire outbreaks occurred with less frequency in the city until the 1980s.

Conflagration in Shantytowns

Shantytowns or slums dot the landscape of Lagos Island and the Mainland, notably at Ajegunle (Apapa), Badiya (also known as Badia) (Ijora), Oko Baba (Ebute Meta), Iwaya and Makoko (Yaba), Bariga (Somolu), and Olosha (Mushin). The buildings in these informal settlements are makeshift contraptions made of

corrugated metal roofing sheets and timber, which are highly combustible. At the low-lying shanty settlements of Oko Baba, Iwaya, and Makoko, the dwellings are erected on wooden platforms or stilts. Oko Baba is the major center of the timber and plank business in Lagos. Of these shantytowns, the most vulnerable has been Badiya, the scene of major conflagrations since the 1990s. Such fires are epitomized by an inferno at Ilaje Village, Sari-Iganmu, on the Lagos Mainland, on January 10, 1989, in which a total of 286 houses and goods valued at 30 million naira were lost to the conflagration.¹² A similar dawn fire in a shanty building in the Bariga area in Somolu on the Lagos Mainland in September 2005 swept through the vicinity, gutting eight other buildings. Two persons died, and several others suffered varying degrees of burns. The material cost was considerable because low-income earners in Lagos shanties tended to keep cash and other valuables in their dwellings.¹³ This was dictated by the lack of credit infrastructure common elsewhere (such as pawnshops) and the local economy's overwhelming dependence on cash transactions.

On November 16, 2005, a more serious outbreak razed two hundred houses at Ebute Metta, also on the Lagos Mainland. Property worth millions of naira was lost to the inferno, the second in the area within a year. It began in the morning after many of the residents, who are mainly fishermen, artisans, and traders, had gone to work. As had become the pattern, the fire started in one of the shanty buildings set on stilts and spread to others.¹⁴ Like the case of Badiya below, the shanty settlement in Ebute Metta had experienced regular fire outbreaks in November. A victim, alluding to a previous fire outbreak on November 17, 2003, lamented, "There is more to this fire than meets the eye."¹⁵ Though the victims recognized the vulnerability of their habitat, they had no immediate alternative to it as they could not afford the high room rentals in Lagos. Hence, they spurned official admonition to desist from erecting flammable plank houses.¹⁶

Badiya (or Badia) in Ijora has been plagued by the highest frequency of flood and fire disasters in contemporary Lagos. These incidents were either accidental or contrived. For example, on February 27, 2006, fifteen houses were razed during a clash between rival groups of unlicensed assistants at commercial transport terminals over control of rent collected from the shanties at the foot of the Ijora Bridge. The confrontation caused pandemonium, disrupted commercial activities, and destroyed valuable property.¹⁷ Again, on March 14, 2006, fifty shanty dwellings and property estimated at several millions of naira were razed at Badiya. A domestic cooking accident there snowballed into a rampaging inferno because the haphazard layout of the shanties denied fire-fighters and rescue teams access to the area.¹⁸ A more serious fire outbreak on

January 21, 2008, was caused by a deranged man who set his own apartment ablaze. The blaze subsequently destroyed twenty-five adjacent buildings. The suicide-arsonist was the only human casualty as virtually everyone else had gone to school or work.¹⁹

Elsewhere in Lagos, a fire outbreak at the Ilaje community in Ajah on the island resulted from a kerosene explosion in one of the shanty dwellings in the “densely populated ghetto.” In the ensuing stampede, street urchins looted property under the guise of helping the victims to salvage their belongings from the inferno. The fire raged for five hours till it was eventually contained by fire-fighters, police, and sympathetic citizens.²⁰

A dawn shanty fire, the third in two years, broke out at Iwaya on the Lagos Mainland on Sunday, July 9, 2006. It apparently started when an electrical generator exploded in one of the plank dwellings and subsequently razed a hundred other homes, rendering some one thousand persons homeless and destitute. One distraught victim was restrained from jumping into the flames that had consumed all his earthly possessions. Valuable documents, other material possessions, and large sums of money kept by small-scale entrepreneurs for quick business transactions were lost to the blaze. The nonavailability of fire services in the locality and the lack of accessible roads hampered rescue operations.²¹

An outbreak in the Olosha area of Mushin on the Lagos Mainland in February 2007 further illustrates the high incidence of fire outbreaks in Lagos shanties. A latenight fire in one shanty razed fifty others, killing a toddler in the process. Firemen arrived after much damage had been done while street urchins exploited the chaos to loot. The incident could have resulted from a power surge, exploded stored flammable substances, or a kitchen accident.²² Similar factors also ignited market fires.

Fire Outbreaks in Lagos Markets

Markets are ancient centers of commercial and social activities in premodern and modern African communities. In Lagos, they continue to perform economic, social, and political roles. Ordinarily, markets are wholly nonresidential, but high rental costs in Lagos have compelled many traders to convert their lockup stalls into residences. This was the background to fire outbreaks in Lagos markets, the second major category under consideration in this chapter. These urban conflagrations took place in either general-purpose or specialist markets.²³ While various commodities are sold in general-purpose markets, specialist markets

deal in particular items such as timber, textiles, or confections. Whatever their size or classification, Lagos markets have always been prone to major fire outbreaks, only a few of which can be discussed here.

On January 1, 1985, a night fire in the Tejuosho Market on the Lagos Mainland destroyed eight stores before it was brought under control. A lit candle in one of the stores might have started the conflagration, but this could not be confirmed.²⁴ The incident exhibited some of the common features of fires in Lagos: late-night outbreak, power outage, and the complicity of alternative power sources (candle or power generators). The frequency of such fires prompted a newspaper editorial that charged the government to engage fire engineers in the planning of markets and high-rise buildings, enforce the use of fire-resistant building materials, provide firefighting equipment, and install an adequate number of fire escapes in multistory buildings. Though many organizations had fire alarms and fire extinguishers on their premises, the editorial argued that everyone must be compelled to install automatic sprinklers, which could contain the spread of fire before the arrival of the fire brigade. However, the newspaper stressed that emphasis should be on “preventive rather than curative strategies.”²⁵

As will be shown below, Lagos market fires were caused by a combination of natural and human factors. We may note that though direct human agency (such as arson) was not always a factor in market fires, criminal elements often took advantage of these disasters. When the Balogun Market on Lagos Island went up in flames on September 10, 1991, allegedly because of an electrical accident in a nearby currency exchange office, thieves, touts, and crooks looted the burning market.²⁶

A major conflagration in the popular Idumota market on Lagos Island on January 1, 2001, arose from a clash between warring street gangs (popularly known as “area boys”). Six buildings and property (including building materials and machines of various types) worth several million naira were destroyed.²⁷ In July 2002, Balogun Market was in the news again as four hundred lockup stalls stocked with expensive textile materials were razed in a Friday night conflagration. A newspaper editorial on the incident is worth quoting for its apt summary of market fires in Lagos: “The Balogun market, like so many others, is at once sprawling, compact, congested, disorganised and choking, a mumbo jumbo of structures and highly flammable wares. In such a chaotic environment the evidence of protective security and safety measures is highly visible in their absence. . . . Balogun market was simply a disaster waiting to happen.”²⁸ While the Idumota fire of 2001 was a clear case of arson, the one that decimated the “Better Life” section of the Oyingbo Market on May 18, 2005, resulted from a

domestic fire ignited by an exploding can of gasoline stored in one of the wooden shelters in the market. As in the case of the sawmill fire at Oko-Baba (mentioned later), the disaster was caused by the use of an open wood fire in domestic cooking in the vicinity of stored flammable material (gasoline) or other combustible material used in house construction.

A dawn fire destroyed the Oke Afa market at Isolo on the Lagos Mainland on December 19, 2005. Its victims had taken loans to stock their stalls with wares in anticipation of increased sales during the Christmas season and, particularly, to reap profit from the “harmattan boom season in the construction industry.”²⁹ Accordingly, their shops were fully laden with cement, paints, and various chemicals, which were generally combustible. The inferno swept through the vast market in the absence of the traders, who had retired to their residences for the night, and its containment was hampered by the late arrival of the fire-fighters, who claimed that they initially went to the wrong market, Itire Market. When they finally arrived at 5:00 a.m., it took them two hours to bring the inferno under control.

The victims suspected that the incident was premeditated as no outbreak of that magnitude had occurred since the market had been founded thirty years earlier. The unprecedented outbreak was attributed to private developers who had allegedly been trying unsuccessfully to dislodge the traders to make way for a modern market primarily for their own profit. The traders’ suspicion was strengthened by the timing of the incident, which gravely hampered firefighting efforts. But the fire could have resulted from an electrical fault or a power surge in the night. Whatever its cause(s), the conflagration was helped by the dry weather of the harmattan season.³⁰

The rash of harmattan fires, especially in November and December, hit other markets in Lagos, especially timber or plank markets, during this period. On Saturday, November 12, 2005, a dawn fire razed the Ipaja Plank Market in the city suburbs.³¹ It resulted from a freak accident when a broken high-tension electric cable fell on a tin of solignum, a wood-preserving chemical, which promptly burst into flames that engulfed the entire market. Twenty timber merchants lost assets estimated at ₦100 million, practically all of which had been uninsured. The victims and their dependents faced immediate destitution, which could potentially affect the education of their children and wards.

Harmattan fires ravaged other timber markets during this period. In December 2006, the Idi-oro Plank Market in Mushin and the Iso-Pako-Dowo Market at Oshodi were gutted. A night blaze on December 5 obliterated the Idi-oro Plank Market, ruining the traders who had either just restocked or were keeping large sums of money in their shops.³² The fire also engulfed nearby

buildings, including a three-story building and an automotive repair workshop containing four vehicles. The incident was unprecedented in the market. As in the Oke Afa case, the nearest fire brigade unit at Ojuelegba did not arrive in time allegedly because they needed to bring water with which to combat the blaze and none was available. The firefighters who came from Ikeja arrived much later with half a tank of water. The victims had to raise money to procure water but even that availed little.

The Iso-Pako-Dowo Market blaze occurred only five days later, prompting the popular insinuation that “something . . . had marked timber and plank shops in Lagos for destruction this year.”³³ The fire followed a familiar pattern: it broke out on Sunday—a day when most shops were shut even in Muslim-majority sections of the city—and at night when most people were in bed. Anecdotal evidence suggests that arsonists ignited the market fire when no one would be awake or available to quickly extinguish it. As in the other markets, property and cash worth millions of naira were lost to the blaze, the suddenness and severity of which overwhelmed the victims and their sympathizers, who were too engrossed in witnessing the unfolding tragedy and salvaging what they could with bare hands to call in the fire brigade. Heavy losses in cash were sustained in this and other cases because the traders conducted their business essentially on a cash basis.

However, unlike the Ipaja fire incident that was ignited by a fallen electric cable, the Iso-Pako-Dowo Plank Market inferno was attributed to arson allegedly perpetrated by some people who were at loggerheads with the traders. A group of “hefty young men” had allegedly invaded the market at 11:00 p.m. and set it ablaze with “a liquid substance in plastic bottles”—presumably gasoline.³⁴ Although nobody was apprehended, the prime suspects were members of a particular family who had been “making efforts to violate government setback on their property and extend into the market,” a move that the market association resisted. Both the traditional authorities and the police mediated in the matter without success. A remarkable development in this case was the speedy rebuilding of the market by the victims, in spite of their huge losses, unlike in other gutted markets in Lagos. The chairman of the market association justified the unusual response as follows: “This is Lagos and Oshodi particularly. We cannot afford to leave the space open for long. Although we mourn but so far life is intact, there is hope. Past experiences have shown that it is not wise to leave open space after such an incidence [*sic*] like this.”³⁵ He was alluding to the unwritten code of “effective occupation” of any parcel of land in Lagos, without which the land would be taken over by more powerful or covetous elements—either the government or private developers.

Another major sawmill fire at the Oko-Baba Foreshore Sawmill Market at Ebute Metta on the Lagos Mainland on Sunday, February 11, 2008, gutted hundreds of industrial machines, household equipment, a mosque, and parts of a school. It had started in a kitchen in one of the shanty dwellings, but it could not be contained because most people had gone out to watch an important international football match. As the fire spread, it fed on the combustible material in its path: sawdust, plank, and fuel-powered electrical generators. The president of the market’s Wood Turners Association attributed fire outbreaks in the market to people residing within the market rather than to industrial mishaps. He lamented that there was no demarcation between the industrial and the residential sections of the market, a situation that had posed a constant threat. Another officer of the association rationalized the presence of a large number of residents in the market and the inability to demarcate separate residential and industrial sections in it. He explained that many of the sawmill owners could not afford to run diesel-powered electrical generators; faced with perennial outages, they had lodged their workers in the market so that they could work at any hour of the day when the municipal power supply was operating. In effect, the original accidental fire in the residential section, which spread to the rest of the market, was a consequence of the inability of the Nigerian government to provide a reliable power supply.³⁶

The most celebrated and most devastating market fire in the history of Lagos gutted the popular Tejuosho Market in Yaba on the night of Tuesday, December 18, 2007. This conflagration conformed to the November/December/festive season/harmattan cycle of fires in Lagos. The inferno reportedly started at about 7:30 p.m. in a section of the extensive market known as the Canteen and then spread to other areas. The scale of the ensuing destruction was attributed to the late arrival of the fire brigade.³⁷ The fire destroyed the very large market and inflicted huge losses on the traders, though some managed to salvage their assets before the inferno reached their shops. However, a firefighter and an unidentified woman died when they were trapped in the blaze, presumably under collapsed walls.³⁸ A single victim, Alhaja Agbeke, lost ₦20 million (\$143,000) worth of “high-class” lace textiles, drinks, assorted goods, and cash to the inferno. But she was only one of some two thousand traders who had invested large sums of money restocking their shops in anticipation of the December (Christmas and Muslim Sallah) business boom. Tejuosho market had the worst in a run of bad December fires.

The Tejuosho Market fire allegedly resulted from a power surge, following an outage that ended at about 8:00 p.m., long after the traders had closed for the day. Ironically, the market lacked a water supply, and the firemen from

nearby Ojuelegba fire station did not have water in their fire engines. An enraged Chief Adesina Oyegunle, the Babaloja (male leader or president) of the market traders' union, lamented that while the fire outbreak was avoidable in the first instance, its containment was hampered by the lack of a water supply to the market. The water had been cut off when a road construction firm damaged the mains around the market a year earlier. Neither the road construction firm nor the government bothered to restore supplies in spite of entreaties from the market association. Oyegunle, however, insinuated that the recurring fire incidents in the market had been caused by "thieves and some people bent on disrupting business."³⁹ He attributed the outbreak to arson, rather than a power surge, probably because of the propensity of criminals to loot burning shops even if they did not start the blaze.

Governor Babatunde Raji Fashola of Lagos State visited the ruined market the day after the incident to assess the situation and to commiserate with the victims. He promised to rebuild the market and to prevent a recurrence of fire incidents. A civil engineer opined that though the original market design was defective, alterations to it had crammed too many shops and stalls into the market.⁴⁰ The passages between the shopping stalls were too narrow, and the entire area had become congested with human and vehicular traffic. The expert recommended outright relocation of the market to decongest the area.

The Lagos State government demolished all existing structures in the ruined market and consequently advertised for bids for the remodeling and redevelopment of the market. Twelve developers submitted bids for further screening out of the thirty-two who initially expressed interest. The proposals were reviewed by a committee that made recommendations to the State Executive Council. The key consideration that informed the selection exercise was the technical competence of the proposals rather than the funds available to the bidder. The new design was expected to address the following issues: the ability of the bidder to effectively maximize space without the market constituting a nuisance to the environment and other stakeholders, convenience to the traders, the number of shops to be built, and the rates to be charged for them.⁴¹

While the Lagos State government and the community were grappling with the colossal loss that attended the decimation of Tejuosho Market, a major fire outbreak wreaked havoc on the popular Mandilas Market on Lagos Island at about 5:00 p.m. on Wednesday, February 6, 2008. This fire was again attributed to a power surge. A spark on the ground floor of a high-rise building on Imam Ligali Street, where combustible material was stored, led to an uncontrollable conflagration fueled by industrial gas, textiles, shoes, and other combustible materials. Given the congestion on Lagos Island, where high-rise buildings

containing shopping malls are constructed in close proximity, the fire spread from the initial point of combustion to the next high-rise building, which was also stocked with flammable materials.

In all, six high-rise buildings and property worth billions of naira were gutted. Officials of the Lagos State Emergency Management Agency, the National Emergency Management Agency (NEMA), the police, and the National Security and Defence Corps reportedly “watched helplessly” as the fire spread unchecked.⁴² A combined team of personnel of the fire service, the Julius Berger Construction Company, the Nigerian Ports Authority, a commercial bank, and the federal and Lagos State governments failed to contain the conflagration. Desperate traders then risked their lives by darting into the flaming buildings to salvage what they could. Although the sudden injection of high-voltage electricity into the distribution system by the national electricity provider, Power Holding Company of Nigeria, was blamed for the fire outbreak, the traders too were cited for illegal connections of electricity and storage of fuel and generators in the high-rise shopping mall.

That said, the inferno betrayed the unpreparedness of the fire service for firefighting in high-rise buildings in the high-density areas of Lagos. However, the failure of the rescue operation was attributed to extenuating circumstances. First, lack of access to the affected buildings hindered rescue efforts. Second, the large crowd of people who massed around the site and the menacing activities of hoodlums further hampered firefighting operations. A top official of NEMA blamed the lack of firefighting equipment for the poor management of fire outbreaks in such high-rise buildings.⁴³ Similar outbreaks in strategic high-rise buildings are examined in detail below.

Fire Outbreaks in Strategic High-Rise Buildings

Isolated fire incidents in high-rise buildings of strategic or economic value in Nigeria since 1980 have had far-reaching repercussions. It is widely believed, though supporting evidence is largely anecdotal, that the fire outbreaks in government buildings have always been contrived to conceal large-scale theft by public officials and their accomplices. The history of dramatic fire incidents in strategic, usually high-rise, government-owned buildings in Nigeria dates back to 1980. The military and civilian governments of the post-civil war (1967–70) era attained notoriety for profligacy and endemic corruption. Whenever allegations of theft of public funds came under investigation, a mysterious fire incident soon occurred in the accounts offices, obliterating any material

evidence of the crime and destroying the building itself. This assertion is buttressed by the number of major fire incidents in high-rise buildings of national strategic importance.

At least seven such fire incidents took place between 1980 and 1985: at the ten-story Federal Ministry of Education Building in Lagos on September 5, 1980; the eleven-story Ministry of External Affairs Republic Building, Lagos, on December 14, 1981; the thirty-seven-story Nigerian External Telecommunications Building on the Lagos Marina on January 13, 1983; the thirteenth floor of the twenty-three-story Ministry of Defence Building in Lagos on October 27, 1983; the Accounts Department of the Cabinet Office, Lagos, on March 19, 1984; the Finance and Accounts Division of the Ministry of Communications Headquarters Building on December 4, 1984; and the thirty-two-story Cocoa House in Ibadan (120 kilometers outside Lagos) on January 8, 1985.⁴⁴ This trend has been sustained since the 1980s by recurring fire incidents in the Defence Building, the Nigerian National Petroleum Corporation (NNPC) headquarters at Ikoyi, and the Federal Secretariat, also at Ikoyi. Those buildings housed the nation's greatest assets, which have been pillaged by successive governments.⁴⁵ In 2006 alone, there were at least three major fire incidents in strategic buildings in Lagos.

In July 2005, a section of the Tafawa Balewa Square, Lagos, a collection of shopping malls and offices, went up in flames leaving a branch of the African International Bank in ruins. The bank had ceased to operate for more than a year before the incident, and an outbreak of fire in its office was clearly abnormal. However, on closer examination, it was discovered that the registry of the bank, where vital documents had been kept, was the epicenter of the fire. This revelation merely deepened the suspicion that "there was foul play in the entire incident."⁴⁶ This conjecture was further strengthened by the sudden disappearance of the security men guarding the bank shortly before the incident and their reappearance after the bank's registry had been gutted. However, more damage was averted by the timely response of functionaries of the Lagos State government and of firefighters from Campos (Lagos Island) and Surulere on the Mainland.

A similar incident affected a section of the thirteen-story Stallion House on Ajose Adeogun Street, Victoria Island, owned by the government-owned oil giant, NNPC, and one of its affiliates, which housed blue-chip firms, including oil firms. Sabotage was suspected because the building was being considered for sale as one of the assets to be disposed of by the Bureau of Public Enterprises. The timing of the fire outbreak (1:00 a.m.) further buttressed such suspicions. However, it was contained after seven hours by the concerted efforts of federal and Lagos State governments and firefighters of the Julius Berger Construction

Company.⁴⁷ During the same month, an early-morning conflagration destroyed the Bank of Industry (BOI) building on Broad Street, Lagos Island. The seventh to ninth floors occupied by other firms, and the eleventh to fifteenth floors, which belonged to the BOI, were burned, and property worth billions of naira was lost to the inferno.⁴⁸

A major conflagration razed the Ministry of Defence Building on Moloney Street on Lagos Island on May 16, 2006. That was the third time, following earlier major incidents in 1979 and 1993, that the building housing that strategic government agency at its previous (Onikan) and present (Moloney) locations would be gutted.⁴⁹ The third incident expectedly elicited concern about a jinx or sabotage as the fire outbreak took place at 3:00 a.m. The inferno destroyed the fourth floor, occupied by the air force, including what an official described as “several vital documents.”⁵⁰ However, air force authorities blamed poor maintenance of the fifty-year-old building for the inferno, which they suggested might have resulted from an electrical fault. The fire destroyed the entire floor in spite of the valiant efforts of a team of army, navy, and air force firefighters. Suspicious fire outbreaks, widely attributed to arson in buildings of this nature, similarly gutted court houses, electoral commission offices, banks, insurance firms, and government agencies across the country.⁵¹

This chapter has demonstrated that government failure was directly or indirectly implicated in most of the fire incidents of this period. First, even in the face of abundant resources, the state failed to ensure regular supplies of electricity, petroleum, kerosene, and water, the lack of which necessitated the citizens’ recourse to fuel storage and dependence on fuel-powered electrical generators. Shantytown and market fires resulted largely from government failure to provide water, electricity, fuel, and public housing for the low-income residents of Lagos. Hence, government policy generated widespread poverty in the midst of affluence and recourse to self-help. Moreover, unchecked rural-urban drift—largely owing to the neglect of the countryside—lay behind the rise of shantytowns and residential sections of markets. Regardless of the role played by individual acts of carelessness, governmental negligence was the chief factor in these outbreaks.

Second, the fire services were never adequately supported with funds or personnel. Hence, firefighters always complained about lack of water or functional fire engines and invariably arrived too late, or never at all, at many of the stricken sites.⁵² Public confidence in the fire service, which was never sky high, has been eroded by the consistent failure of the firefighters to contain conflagrations in high-rise buildings.⁵³

Third, the lack of transparency in the handling of public funds and a culture of misconduct with impunity created conditions for the perennial fires in public buildings. Though no culprit has ever been convicted for arson, the linkage between fire outbreaks in strategic high-rise buildings and ongoing investigations of white-collar crimes is too strong to ignore.

Arson, an instrument of political vendetta in the nineteenth century, has been used in contemporary times to conceal evidence of white-collar crimes in public institutions. But it has also served some private interests—and even those of the government—in different, often contradictory, ways. Street gangs set markets ablaze for loot, an act of social protest laced with criminality and profit seeking. Property developers instigated arson to evict traders from markets in order to acquire prime real estate for redevelopment, and the government too has gained by seizing the opportunity of large-scale urban fires to redevelop markets. Such acquisitions would otherwise have been resisted by the traders, forcing the government to retreat to avert loss of political support.

The recurrence of fire incidents with strikingly similar characteristics suggests that municipal authorities and householders in Lagos have neglected fire prevention for far too long. However, following the spate of fire incidents since 2007, the Lagos State governor, Babatunde Fashola, ordered that fire exits and escape points must henceforth be provided in commercial and public buildings, hospitals, and entertainment facilities throughout the state.⁵⁴ He also directed that all applications for building permits must be accompanied by the fire department's certification of adequate safety exits.

Governor Fashola's postfire reconstruction of Tejuosho Market is reminiscent of the Singaporean People's Action Party management of the Bukit Ho Swee inferno and parallels the conversion of razed souks into modern shopping malls in Beirut, as studied by Nancy H. Kwak and Sofia Toufic Shwayri, respectively, in this volume. The state and local governments in Lagos also used postfire reconstruction to strengthen their hold on the markets and their unions. However, the speed of postfire reconstruction by the victims is determined by pragmatic considerations. As exemplified by the Iso-Pako-Dowo Plank Market postfire reconstruction, victims promptly reconstructed their shops to obviate displacement by property developers or acquisition by government for urban redevelopment.

In general, the efficiency of the fire brigade has declined especially since the 1970s because of underfunding; inadequate equipment; low morale among the staff, owing to low wages, and poor working conditions and employee benefits; and inadequate water supplies.⁵⁵ However, citizens are either oblivious of the

internal problems of the service or are convinced of its congenital inefficiency. Hence, there is widespread hostility to firemen even when they are making the best of their inadequate equipment and resources. The fire service has, in turn, simply blacklisted Mushin, Ijora, and Ajegunle (high-density areas of Lagos) following their inhabitants’ routine assault on firemen for late arrival or for ineffective performance on site.⁵⁶ Ironically, the government that failed to adequately fund the fire service, replace obsolete equipment, and motivate its staff often hired the services of private organizations, such as the German construction giant Julius Berger, to supplement the efforts of the fire service.⁵⁷ The (partial) outsourcing of firefighting to a foreign firm is a clear admission of state-sector failure and an abdication of its statutory social responsibility.

There is a complementary negative attitude toward fire insurance in Lagos reflected by citizens’ low patronage because they mistrust insurance companies. Conversely, businesses and government agencies insure their assets, especially buildings. Hence, while ordinary citizens suffer unmitigated losses when their uninsured assets are gutted, businesses and government agencies are compensated for the loss of their insured buildings.

An ironic contrast may be drawn from the comparison of fire incidents in high-rise public buildings and the other types examined in this chapter. On the one hand, shanty dwellers and merchants in the marketplace who were obliged to keep cash in their dwellings suffered the loss of their cash and their relatively valueless buildings. On the other hand, officials, who kept their cash in banks safe from fire, deliberately set fire to public buildings without sustaining any personal loss and even gained by keeping the rewards of their white-collar crimes. Officials were paradoxically doubly rewarded for their crime while the common people suffered a double loss for fires that they never desired or contrived.⁵⁸

In all, there was no “great fire” in Lagos, but sporadic medium fires wreaked considerable havoc over a thirty-year period. Lagos has no “fire heroes,” but it does have fire villains in government officials whose acts of omission and commission created conditions for most of the conflagrations examined in this chapter. Still, market and shantytown conflagrations, as contrasted with high-rise building fires, have had a renovative effect on the Lagos city landscape.

NOTES

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and Strategic Studies, University of Lagos (May 14, 2009), for comments on earlier versions of this paper. The quote in the title is attributed to a victim of a fire incident in Dada Aladelokun, “November, Their Enemy,” *Saturday Punch* (Lagos), November 19, 2005.

1. Michael J. C. Echeruo, *Victorian Lagos: Aspects of Nineteenth Century Lagos Life* (London and Basingstoke: Macmillan Education Limited, 1977), 19.

2. The only exception focuses essentially on the nineteenth century: Onyeka C. Nwanunobi, “Incendiarism and Other Fires in Nineteenth-Century Lagos (1863–88),” *Africa* 60, no. 1 (1990): 111–20.

3. Ayodeji Olukoju, *Infrastructure Development and Urban Facilities in Lagos, 1861–2000* (Ibadan: Institut Française de Recherche en Afrique, 2003).

4. *Ibid.*

5. Ayodeji Olukoju, “Lagos: Collapsing Infrastructure,” in *State of the World 2007*, ed. Linda Starke (New York: W.W. Norton, 2007), 46–47.

6. Ayodeji Olukoju, “The Segregation of Europeans and Africans in Colonial Nigeria,” in *Security, Crime and Segregation in West African Cities Since the 19th Century*, ed. Laurent Fourchard and Isaac Olawale Albert (Paris: Karthala, 2003), 263–86.

7. Ayodeji Olukoju, “Population Pressure, Housing and Sanitation in West Africa’s Premier Port-City: Lagos, 1900–1939,” *The Great Circle: Journal of the Australian Association for Maritime History* 15, no.2 (1993): 91–106.

8. Nwanunobi, “Incendiarism and Other Fires.”

9. Echeruo, *Victorian Lagos*, 19.

10. Nwanunobi, “Incendiarism and Other Fires,” 112.

11. Ayodeji Olukoju, *The “Liverpool” of West Africa: The Dynamics and Impact of Maritime Trade in Lagos, 1900–1950* (Trenton, NJ: Africa World Press, 2004), 133.

12. Kolawole Ojelabi, “286 Houses Destroyed in Sari-Iganmu Fire Disaster—Agency,” *National Concord* (Lagos), February 2, 1989. Central Bank of Nigeria sources reveal the steep fall of the naira against the dollar after 1984: \$1= ₦0.89 (1985); \$1= ₦21.88 (1996); \$1= ₦83.8 (1998); \$1= ₦111.7 (2001); and \$1= ₦147.5 (2010). I thank Jean Balouga for help in securing these data.

13. Evelyn Usman, Rita Obodochina, and Chukwuka Ifebuche, “Two Killed in Fire Outbreak,” *Vanguard* (Lagos), September 16, 2005.

14. Regina Akpabio, Ifeoluwa Ibirogba, and Bertram Nwannekanma, “Fire Razes 200 Homes in Lagos,” *Guardian* (Lagos), November 17, 2005.

15. Dada Aladelokun, “November, Their Enemy,” *Saturday Punch* (Lagos), November 19, 2005.

16. *Ibid.*

17. Lukkey Abawuru, “15 Houses Burnt at Ijora Badia,” *Daily Champion* (Lagos), February 28, 2006.

18. Femi Adisa, “Fire Guts 50 Shanty Houses in Badia,” *Vanguard* (Lagos), March 15, 2006.

19. Regina Akpabio and Sunday Odita, “Badiya Back in Bad News—Inferno in Ijora Badiya, Lagos, Claims Life, Property,” *Guardian* (Lagos), January 23, 2008.

20. Evelyn Usman and Femi Adisa, “Fire Guts 20 Shanty Houses at Ajah,” *Vanguard* (Lagos), April 4, 2006. Firefighters (fire brigade personnel) are popularly known in the indigenous Yoruba language as *pana-pana* (literally, “fire killers”).

21. Seye Olumide, “Fire, Again, in the Shanties—A Lagos Inncrcity Community Laments Fire Outbreak That Destroys 100 Shanties,” *Guardian* (Lagos), July 11, 2006.

22. The “power surge” refers to the high voltage injected into homes and appliances at the restoration of power after an outage. The sudden and violent infusion of high-voltage electricity often destroyed electrical or electronic equipment or triggered fires. Evelyn Usman and Idowu Olaide, “Two-Yr-Old Baby Burnt to Death in Lagos Inferno,” *Vanguard* (Lagos), February 15, 2007.

23. Cf. Laurent Fourchard and Ayodeji Olukoju, “State and Local Governments, and the Management of Markets in Lagos and Ibadan since the 1950s,” in *Gouverner Les Villes d’Afrique: État, Gouvernement Local et Acteurs Privés*, ed. Laurent Fourchard (Paris: Karthala, 2007), 107–23.

24. Wale Odeyale, “Tejuosho Market Up in Flames,” *National Concord* (Lagos), January 9, 1985. As shown later, a similar fire later destroyed the market in 2007.

25. “Averting Fire Disasters,” *Daily Times* (Lagos), July 1, 1985.

26. “Balogun Market on Fire,” *National Concord* (Lagos), September 11, 1991.

27. Bosun Oladunjoye, “Sad New Year for Idumota Traders,” *National Concord* (Lagos), January 8, 2001.

28. “Balogun Market: One Fire Too Many,” *Guardian* (Lagos), July 22, 2002.

29. Bertram Nwannekanma and Isaac Taiwo, “Christmas Turned Sour for Traders—As Fire Razes Goods and Property Estimated at over ₦20 Million at Isolo Market,” *Guardian* (Lagos), December 20, 2005.

30. There are two main seasons in Nigeria—the dry season, or harmattan, roughly from November to March, when there is little or no rainfall; and the rainy season, from April to October, when tropical rains fall in varying proportions. The dryness of the harmattan season makes flammable material more combustible, often causing wild bush fires.

31. Amaogechi Ukawuba, “Sad Day for Traders,” *Daily Champion* (Lagos), November 13, 2005.

32. Regina Akpabio, Temitope Orogun, and Tola Oyerinde, “Agony as ‘December Evil’ Razes Plank Market—Mushin Traders Lament Loss of Goods Worth Millions in a Night Inferno,” *Guardian* (Lagos), December 7, 2006.

33. Seye Olumide and Bertram Nwannekanma, “From Heaps of Timber to Heaps of Ashes—Another Timber Market Razed, Traders Weep, Suspect Foul Play,” *Guardian* (Lagos), December 12, 2006.

34. *Ibid.*, for the discussion and quotes in this paragraph.

35. *Ibid.*

36. Seye Olumide, “One Fire Disaster Too Many—More Worries for Lagosians, as the Sixth Fire Disaster Occurs in Oko-Baba Market,” *Guardian* (Lagos), February 12, 2008.

37. Kingsley Nwezeh, "Fire Razes Tejuosho Market," *This Day* (Lagos), December 19, 2007.
38. Francis Famoroti, Kunle Adeyemi, and Kemi Obasola, "Firefighter, Woman Killed in Tejuoso Market Fire," *Punch* (Lagos), December 20, 2007.
39. *Ibid.*
40. *Ibid.*
41. Tunde Alao, "12 Developers Scale New Tejuosho Market Screening," *Guardian* (Lagos), March 31, 2008. The market was rebuilt within a year.
42. Seye Olumide and Bertram Nwannekanma, "Again, Fire, Pain in Lagos—Traders Lament Losses Estimated at Billions of Naira, as Fire Guts Six High-Rise Buildings," *Guardian* (Lagos), February 8, 2008.
43. *Ibid.*
44. For a list of 1980s fires, see Ewaen Osareneren and Toyin Olajiga, "Fire Disaster in Public Buildings," *Sunday Concord* (Lagos), April 13, 1986; Idang Alibi, "The Fire This Time," *Daily Times* (Lagos), April 16, 1986; "A Nation and Its Fires," *Guardian* (Lagos), April 23, 1993; and Nwanunobi, "Incendiarism and Other Fires," 111.
45. Discussions of these incidents can be followed through Nigerian newspaper editorial opinions and reports: *Daily Star* (Enugu), January 26, April 7, and April 15, 1986; *Guardian* (Lagos), February 14 and April 28, 1986; *National Concord* (Lagos), April 13, 1986; *Daily Times* (Lagos), April 16 and 21, 1986; and *Observer* (Benin), April 22, 1986. I owe these references to Nwanunobi, "Incendiarism and Other Fires."
46. Sunday Aborisade, "TBS Fire: 'Don't Rule Out Sabotage,'" *Punch* (Lagos), July 6, 2005.
47. Chinedu Uwaegbulam, Yetunde Ebosele, and Sulaiman Salau, "Fire at Stallion House in Lagos," *Guardian* (Lagos), March 9, 2006.
48. Regina Akpabio, Seye Olumide, Bertram Nwannekanma, Isaac Taiwo, Bimbo Olaniyan, Ifeoluwa Ibirogba Beauty Edia, and Tosin Falana, "Up in Flames, the Third Time . . . Again Fire Razes a Part of Defence Headquarters Building in Lagos," *Guardian* (Lagos), May 17, 2006.
49. *Ibid.*
50. Regina Akpabio, Seye Olumide, Bertram Nwannekanma, and Alex Olise, "Fire Razes Defence Building—Wuyep Laments Poor Maintenance," *Guardian* (Lagos), May 17, 2006.
51. Akpabio et al., "Up in Flames," contains a list of such incidents.
52. The fire outbreak at the NNPC building in Ikoyi, Lagos, on April 12, 1986, could not be contained in spite of the timely arrival of the Federal and Lagos State Fire Services and other agencies because there was no water in public taps in the vicinity and the standby water tanker lacked the pressure to handle the height of the building. See "NNPC Building in Flames," *Sunday Concord* (Lagos), April 13, 1986.
53. A critique of the fire brigade is contained in a newspaper editorial: "The New Fire Code Bill," *Guardian* (Lagos), September 29, 2006.

54. Joshua Bassegy, “Fashola Orders Fire Exit in Public Buildings, Others,” *Business Day* (Lagos), February 2, 2009.

55. This decline is detailed in Ajibola Amzat, “Federal *Panan-Panan* Slumps in the Valley of Death—Low Morale, Outdated Equipment, Uncertainty Hamper Federal Fire Service in Lagos,” *Guardian* (Lagos), July 21, 2009. The complementary insider perspective was provided by Olu Okebiyorun, the comptroller-general of the Federal Fire Service, in Max Amuche, “Federal Fire Service: ‘Our New Mandate Is to Regulate Fire Fighting,’” *Business Day* (Lagos), June 1, 2009.

56. Amzat, “Federal *Panan-Panan* Slumps.”

57. Jaiye Ekerolere, “Lagos Overhauls Fire Service—May Reactivate FG’s 10 Fire Stations in the State,” *Business Day* (Lagos), March 17, 2009.

58. I owe this insight to Jordan Sand.

Fires, Urban Environments, and Politics in Contemporary Jakarta

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Destroying the city's neighborhoods in violent ways, sometimes putting thousands of people on the street, fires have been part of the common urban landscape of Jakarta since colonial times.¹ Their unchallenged strength makes them part of the everyday life of the metropolis, suggesting that Jakarta is doomed to experience them repeatedly. They reveal not only the transformations of the urban landscape but also the manner in which the city has developed as a whole. This essay questions the relationships between fires and governance in the city. Fires afford a vantage point from which to view the transformations of the structures of city planning and management over time. They expose how urban environments are controlled, both from a physical angle and with respect to their more political and social aspects. As they are complex phenomena, whose causes and reasons can range from mere accidents to arson, they involve different types of actors and practices (formal, informal, and occult) in the urban arena.

Focusing on the fires that have taken place during the period of great transformation of the Indonesia's capital city—since the mid-1960s up to the twenty-first century—this essay seeks to address the links between the evolving physical urban environment and the political means of governing a metropolis.²

It will first analyze the extent of fires in the city in connection with the modernization of the city, then the chronology of neighborhood fires since the 1970s; this will then lead to an assessment of the proposed solutions and reconstruction schemes. Finally, I will show that fires point to an elaborate management of the city, involving not only government officials, but also political parties, the civil society, non-governmental organizations (NGOs), and the population. Combining formal and informal practices, the story of uncontrolled fires in Jakarta exposes evolving power struggles in a changing metropolis, from the conflicting views on what a city and its society should be (including its poorer segments of the population) to the more or less informal means to achieve such goals.

Fires and Modernity

Throughout the history of Jakarta, fires have been a steadily increasing phenomenon. From 150 recorded fires in 1966 (with more than half hitting residential developments and houses), they rose to 500 a year in the 1970s. Since then, there were an average of 700 to 800 fires a year, except in some particularly hot years like 1982, when 1,082 fires occurred in Jakarta, and 1997 with 1,175 outbreaks.³ During the 1960s, they displaced an average of 7,000 people a year, with peaks due to large fires in 1967 (24,617 people lost their homes), in 1971 (20,969 people), or in 1972 (19,000 displaced persons).⁴ In the 1980s, the figures fell to an average of about 10,000 displaced people a year in Jakarta, but since the 1990s the numbers have risen again well above 20,000 and even 30,000 (34,854 in 1994 and 37,705 in 1997). In the meantime, the population within the city limits went from 2.9 million in the 1961 census, to 4.6 million in 1971, then to 6.5 million in 1980, 8.26 million in 1990, and 9.66 million in 2010, while the metropolitan region (the Jabotabek) numbered more than 25 million inhabitants.⁵

Fires tend to follow two basic patterns: huge blazes that burn down entire neighborhoods and smaller fires that hit the city regularly. Their most frequent cause is poor electrical connections, in highly flammable environments (53 percent of the fires in 2005, for instance). Next come oil stoves (11 percent), cigarettes (5 percent), and oil lamps (4 percent). These figures, which hint at the pattern of energy supply in Jakarta households, also suggest a certain evolution. For instance, in 1971, oil utensils (stoves and lamps) accounted for 29 percent of fires, whereas electricity was responsible for 28 percent of the blazes. Such percentages remained stable throughout the 1970s, and it was only in the 1980s that the stove- and lamp-related fires declined, whereas electrically induced fires increased. These figures point to a shift not only in the types of fires, but

also in the overall equipment of Jakarta's poorer neighborhoods, with the spread of electrical service.

The physical environment of Jakarta also accounts for the origin of fires. Fires usually occur in the densest neighborhoods, where there is a favorable environment: narrow alleys, small houses built of wooden materials or other highly flammable materials, in a semipermanent or temporary manner (to use the local classification). The blocks of houses are also separated by narrow alleys that do not prevent fires from spreading from one side to the other, resulting in huge blazes.⁶

Thus fires negatively point to construction standards in Jakarta, to the high flammability of materials, but also to the urban morphology, the economic and environmental problems that result from poverty. They point to an urban ecology that reflects the conditions of the built environment and the transformations of the city.⁷ These facts have contributed to a representation of Jakarta as a poor city, a view that is often relayed by the city officials. Fires in kampongs still point to the dichotomy between an urban landscape evolving toward greater modernity and factors that tend to recall the development problems faced by a country such as Indonesia.⁸ Fires are thus linked closely to wider notions of development in Jakarta and Indonesia. From the planner's point of view, their occurrence may be understood as a sign of a certain backwardness of the metropolis, of a city in need of modernization. Fires are thus linked to broader urban policies and can be used and abused in city transformations.

Fires and Change: Burning and Expanding Jakarta

Since the 1960s, different types of neighborhoods have been affected. The biggest fires occur in neighborhoods with high population densities and low construction standards. The majority take place in poor and densely populated kampongs that are generally rebuilt in their aftermath (fig. 18.1). For instance, in the northern subdistrict of Penjaringan, fires started occurring frequently in the 1970s. Eleven fires happened in the 1980s, and since then, more than twenty-six fires have displaced more than one hundred persons a year. If some of these blazes are of criminal origin, most of them are accidental. In such cases, the neighborhood is rebuilt by the local population, in a way that resembles the previous kampung.

In the 1960s, a few large fires happened, such as the 1967 Utang Panjang fire, near Kemayoran. With more than three hundred houses destroyed and 4,900 people left homeless, this fire was of criminal origin. Three attempts to

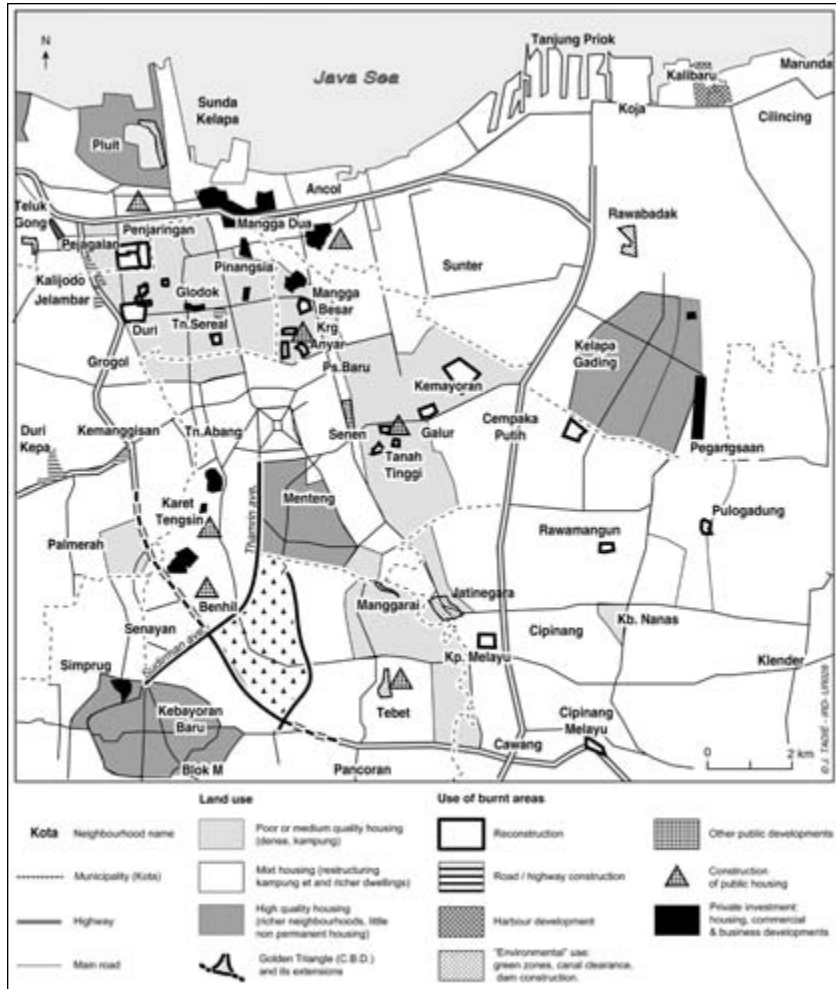


Figure 18.1. Types of use of the major *kampung* fires in Jakarta (1970–2004). (Map by author.)

set fire to the neighborhood had already occurred, and the instigators had revived the flames that had been put down.⁹ In such a context, in the aftermath of the 1965 coup, which brought General Suharto to power and led to the annihilation of the Indonesian Communist Party, two conclusions were drawn by the newspapers. The first was that it was sabotage from Communist individuals, thus reproducing the rhetoric of the beginning of the anti-Communist

Suharto New Order regime (1966–98); the second was that the municipal government should take advantage of the opportunity to get rid of the neighborhood gangs. From that time onward, a certain ambivalence emerged relating to fires. They were destructive events that affected the physical environment of communities, greatly jeopardizing the living condition of the locals; yet they were also tools for the improvement of the city in the local government's view.

Such types of fires persisted as Indonesia and Jakarta went through tremendous change resulting from the economic growth of the New Order, with the major boom taking place from the end of the 1970s onward.

During the 1970s, little change can be seen in the patterns of fires. Huge fires were still a necessary preamble to certain construction projects. This was the case, for instance, in the commercial Pasar Baru district, where fifty-five houses burned down in November 1972, leaving 717 inhabitants homeless. The fire occurred as the inhabitants were to be evicted and replaced by the growing commercial center. Financial compensation was still in the process of negotiation. Other fires occurred in commercial zones that were to be transformed, such as in the Senen area, one of the biggest markets in Jakarta, where the largest informal prostitution center of the city—Planet Senen—was closed in 1972 after several fires. The land was then used for road widening and the creation of public amenities, such as a youth center including a sports facility.¹⁰ Fires also occurred in areas that were beginning to experience change, soon to be reached by the city's modern thoroughfares, as was the case near Thamrin Avenue or its extension to the south, Sudirman Avenue, in what was to become the Golden Triangle, Jakarta's main business district. In the meantime, fires still broke out in dense popular neighborhoods as had happened before.

In the 1980s and the 1990s, many more blazes occurred in the city. But the geography of such catastrophes points to different types of issues. During the 1980s, fires began to hit a greater number of areas. They reflected the growth of Jakarta, which between the census of 1966 and that of 1990 had doubled in population, from 4 million inhabitants in the limits of the Special Region to 8.26 million. This increase probably also reflects the greater reliability of available data, especially with the creation of city newspapers such as *Pos Kota* and the more detailed coverage of fires in the national newspapers.

Since the 1980s, several types of districts have experienced intense transformation due to fires. Kalibaru, located next to the harbor of Tanjung Priok, in North Jakarta, had been susceptible to fires since the 1960s, but since the end of the 1970s, ten major fires occurred, nine of which displaced over a thousand people. In each case, the inhabitants recall the fires that hit the area as if they

were a common fatality. The most severely devastated districts in this series of blazes were the ones closest to the harbor developments, where truck and container terminals were being developed, as well as next to the harbor that specialized in wood handling.

In the meantime, a second type of district was emerging: the neighborhoods located near the Golden Triangle (the business district). Such an area as Simprug, now an elite residential district with a golf course, located near the Senayan Stadium, was hit by several fires. Prior to the 1970s, there were a number of disputes because the area was scheduled to be a site for new developments. But fires still continued occurring throughout the 1980s and early 1990s. In 1989, 200 houses were destroyed on the site where an elite complex now stands; the same happened in March 1993 (172 houses) on the site of a projected road. Other fires occurred in Karet Tengsin and in Bendungan Hilir, both on the western part of the Golden Triangle.

Throughout the 1990s and into the new century, these trends were confirmed, as new development projects followed one another. Penjarangan burned repeatedly, and other areas experienced similar conflagrations, such as the Northern Ancol subdistrict (near the recreation center situated on lands belonging to the railway company), the Golden Triangle, or real estate developments such as Kelapa Gading. Fires also occurred in combination with the construction of infrastructure, clearing ground for the urban freeways that were to be built in the 1990s. Blazes destroyed whole neighborhoods, in Pejagalan for instance, in the north of the city, where three hundred houses burned in May 1992. Financial compensation for land clearance was provided by the Provincial Government in the aftermath of the fire, but generally below the requested levels. In September 1992, the same happened a little to the west, in Kalijodo (in the Jelambar subdistrict), which was also to be crossed by a freeway. Whereas fires usually cleared ground for the construction of highways, in the twenty-first century the trend has changed as settlements under elevated freeways have been submitted to blazes, as in Ancol, where thirty-four houses under a freeway were burned in June 2001, or in Penjarangan in 2007. After this fire, which weakened the foundations of the pillars supporting the freeway, the city decided to remove all the settlements located underneath such elevated highways.

Fires have therefore been part not only of everyday life in Jakarta but also of its development and growth. Though most of the fires are not related to urban developments, several fires took place in circumstances linked to urban development projects or land disputes. This shows that destructive events have increasingly been related to the city's growth since the 1970s.

Regenerating Jakarta: Fires as a Tool for Development

When a fire breaks out in Jakarta, most people in the neighborhood tend to run for safety as fast as they can, in rare cases rescuing their most valuable belongings. Firefighters usually arrive late, and the large fires last an average of three hours.¹¹ In this inferno, while most inhabitants flee the site, others endeavor to put the fire out, forming bucket brigades or destroying houses so that the blaze will not spread. Violent acts also take place. Thieves take advantage of the havoc to steal motorbikes or other valuables.¹²

Disputes may also occur. On December 2, 2002, in Penjaringan, for instance, a man was arrested by the neighborhood residents during a fire. He was suspected of theft. When his belongings were examined, he was found to be carrying a plastic bag filled with gasoline. Next to the bag were mosquito coils and matches.¹³ In a neighboring house, six bags filled with two to five liters of gasoline were also found. The newspapers also hinted that the November 1990 Kalibaru fire had been caused by arson, because gasoline had been found on the ground and the fire appeared to have been set in three different places by people carrying weapons.¹⁴ These anecdotes suggest other dimensions related to fires: arson and larceny. If thefts point to common delinquency, arson reveals ongoing trends in the city's evolution: fires are also a means of revenge and of displacing people by force.

Arson can usually be related to several factors, from psychological and individual motivations to more-complex ones.¹⁵ In Jakarta rumors of arson in kampongs occur each time there is a land dispute.¹⁶ In such cases, they can be seen as ways to weaken the resistance of the inhabitants and to put them in a vulnerable position. Arson is seldom detected. Not all fires are investigated by the police, who in most cases are unable to determine their causes as the scene is usually left in a shambles.¹⁷ Fewer than four fires a year are usually attributed to criminal causes. Yet rumors point to the evolving use of arson in Jakarta. They show how fires can be a tool for city planning and a means of brutal urban transformation. They also reveal a set of actors who are seldom seen publicly in Jakarta's urban management, although they are omnipresent. Those "people carrying weapons" or the people with gasoline refer to the middlemen often used in Jakarta for settling disputes outside the legal frame. Referred to as *jago* or *preman* in the local context, they play an important part in Jakarta's management, from handling security matters to intimidation.¹⁸ In the smaller fires, it seems that some of these *premans* have been used. In larger fires requiring more technology, such as department store fires, for instance, some interviewees

also suspected former military students were responsible for those deeds. They thus refer to the instrumental dimension of fires in conflict settlements, besides the law.

In the aftermath of fires, neighborhoods are usually rebuilt, often in the same dense pattern, which takes more or less time according to the wealth of the population (as homes are seldom protected by insurance), in a way that reminds us of the other ways of coping with fires in Asia.¹⁹ The inhabitants first must wait for the authorization of the city before they can rebuild their houses. In so-called illegal or informal kampongs, some techniques of fire mitigation have been applied, although they are not directly aimed at addressing those hazards. For instance, since 1969 the government has implemented the Kampung Improvement Program (since 1974 in partnership with the World Bank). Its aim is to upgrade the urban environment through infrastructure and social development. In fact, only the environment upgrading was carried out.²⁰ Regarding fires, its main achievement was to provide better access to neighborhoods, but it did not prevent fires from starting in newly reorganized kampongs. Other solutions proposed by the government reflected the idea that kampung fires were due to overpopulation of neighborhoods resulting from immigration; they consisted of emigration schemes for the victims: sending them back to their villages of origin, or to the Outer islands of Indonesia, as part of government-funded transmigration programs aimed at redistributing the population of the country.

Still other solutions included buying new, “modern” equipment, such as fire trucks (which are often too big to pass through the narrow alleys of Jakarta’s kampongs); installing water hydrants (but with insufficient water pressure, if water is available at all, due to the inadequate municipal water networks), or, after 2000, installing fire alarms. This system, called smart alarms, is meant to solve the cross-checking problems and delays of the Firefighting Agency by installing public phones directly linked to the fire stations, in a manner reminiscent of the emergency phones common in the streets of American cities. With such solutions, one can see how imported techniques and procedures have influenced attempts to solve Jakarta’s fire problems. Nevertheless, they also reveal the problems that come with adopting outside models that are not always adapted to the local situation.

Since the end of the 1980s, other planning trends have prevailed in treating Jakarta’s urban poor and, therefore, the number of kampung dwellers struck by fire. These plans have involved the building of public flats. The first public-housing project was the construction of flats in the Tanah Abang area in 1983. Nevertheless, only in 1987 did such schemes start to be used as a solution to the

fires in frequently stricken areas. It was proposed that victims relocate first to existing units before having new apartments built on lands left vacant by the fires. The first records for such relocation are in Karang Anyar, where inhabitants were to resettle in such flats, which they refused at first, and in the Penjarangan subdistrict, with the construction of flats in 1987–88.²¹ Such a move, as can be seen in the Penjarangan instance, continued throughout the 1990s till the beginning of the new century. These policies were often regarded with suspicion and resisted in several areas such as Karet Tengsin and Tanah Tinggi in 1993 or Bendungan Hilir in 1995.

In Tanah Tinggi, for instance, a fire occurred on July 6, 1991. It left 5,800 people homeless and destroyed 736 houses on state-owned land. The reconstruction authorizations were late to come. Although officials acknowledged that the land was for housing purposes, they nevertheless asserted it could be planned in a better way, with public housing.²² Those statements were slow to be issued, and the inhabitants, dreading such a policy, had already started reconstructing their own homes and opposed the construction project. Two years later, on July 5, 1993, a second fire occurred in the same exact location, destroying 360 houses. The residents of the neighborhood went to the mayor's office to oppose the proposed construction scheme but to no effect. Ten days later, compensation was proposed to allow them to rent a place during the construction, and they were offered special prices to move into the future flats. Again the inhabitants refused, citing previous experiences, when the relocated residents were forced to pay more than the agreed sum if they wanted to occupy the flats. In August, rioters prevented city officials and firefighters from entering the area.²³ The result was that the army had to intervene to secure the site and remained for a week in the neighborhood (at the inhabitants' expense). The flats were eventually completed in 1994, but only part of the population was able to move into the resulting flats because of the expensive credit schemes.²⁴ During all those processes, rumors of arson circulated following the fires.

In all these cases, such rumors were repeatedly denied by the city government. Officials would first assert that plans for reconstruction had already been made and had nothing to do with the fires, such as in the statement of Governor Wiyogo in 1991.²⁵ They would usually emphasize the appalling situation of the *kampong* for which action had to be taken. Another point of view stated that public flats were needed in Jakarta because of land shortage and that burned *kampongs* would be replaced by such housing.²⁶

This trend, which appeared in the 1980s, can be interpreted as a solution to fire-prone areas because the public-housing projects allow better access to neighborhoods. They are a means of rationalizing urban space and represent a

regional model in efforts to eradicate poverty. But the rumors of arson surrounding those processes add another dimension to this solution. Why were those flats built under such traumatic circumstances?

In a context of economic growth (in the 1980s and 1990s), these processes can be understood as a way of giving Jakarta a modern image, inspired by policies already implemented by several of Indonesia's neighbors (such as Singapore, for instance).²⁷ Thus not only would the flats built near the prestigious avenues represent such a trend but also more-remote ones such as in Penjaringan or Tanah Tinggi.

Their construction can also be interpreted as a way to integrate informal land into an official urban economy. With public funding, monthly rentals, or credit reimbursement to pay for the flats that were sold, these lands entered the economy of the formal city. They are also to be understood in the international context, where policies affecting the urban poor had shifted to promote housing finance and loans rather than slum upgrading. This was the case, for instance, in World Bank shelter policies.²⁸ They were thus regarded as a solution to housing problems for the urban poor in the third world.

Fires are one of the ways Jakarta has been shaped since the 1960s. Regarded fatalistically as a long-standing abuse about which little can be done, they nevertheless show how the city is managed and expose different overlapping visions of what Jakarta is to become. Occurring in different types of neighborhoods, fires reveal the different concerns of people in the city, from poverty and survival-related issues, to modern international developments linked with globalization (in the business districts such as the Golden Triangle, for instance). Fires thus integrate the different aspects of the life of the metropolis, showing the (lack of?) coherence of some public policies as well as the different sets of actors who have a stake in such catastrophes.

Who Controls Jakarta? Fires and Their Users

In such transformations, several types of actors intervene and contribute to the reshaping of Jakarta's burned areas. If the population plays a major part in the reconstruction in the form of resistance to unwanted transformations and even to the entry of firefighters, other agencies and actors are also involved.

The Firefighting Agency, as a service of the provincial government (in this case the Jakarta Capital Special Region), is managed and funded by it. It is generally blamed for its inefficiency, its slowness in responding to emergencies, its insufficient provision of water at fire sites, and its solicitation of bribes in

order to fight fire. The agency acknowledges it has human resource problems: an insufficient number of firemen, aging staff, and so forth. But there are also management problems. Apart from the rumors of extortion, there were also cases of trials for corruption, especially concerning the purchase of equipment (which is neither novel nor unique to this agency).²⁹

The agency's slowness in responding to fires can be attributed to several reasons: traffic jams, financial negotiation between the agency and the inhabitants for intervening, and verifying the truth of the fire alerts by phone (which slows the firefighters' departure). The population also blames the agency for firefighters arriving too late (sometimes on purpose) and for not having any water, which sometimes leads to confrontations in which the firemen are attacked.

In the aftermath of the fires, other types of actors intervene, especially in the relief process. The forensic police investigate the scenes to determine if the fires were accidental or not. But in environments such as kampongs, it is often difficult to trace the causes of fires and often preferable that the latter remain unknown.³⁰ Other stakeholders include the neighbors; official actors (the heads of neighborhoods subdivisions); the provincial government; the Red Cross; various NGOs, some more and others less visible in their interventions; political parties; and organizations bordering on illegality. These actors reveal other types of uses of fires in Jakarta.

During the New Order regime, most of the aid following fires was channeled through the ruling political party, Golkar, and organizations linked to it (such as women's or youth organizations), as well as the Indonesian Red Cross. However, since the 1998 political liberalization, the number of aid volunteers present at such sites has increased noticeably, especially at the larger disasters. Most organizations even build command posts, or *posko*, which are supposed to concentrate all the relief in a central location before it is redistributed to the victims. These posts are intended to coordinate the aid; collect funds, food, and other types of basic provisions; and then redistribute them to the affected population.

Several political parties are most often present at fire sites in Jakarta: the Golkar, the nationalist Partai Demokrasi Indonesia Perjuangan (PDI-P), the Muslim Partai Amanat Nasional (PAN), the Islamist Partai Keadilan Sejahtera (PKS), and more recently the Partai Demokrat. They usually provide basic needs. Whereas Golkar's aid is usually channeled by direct donations, with visits of party representatives to the sites (which are also to be reported in the papers), the other parties build command posts.

The nationalist PDI-P started implementing its own grassroots relief policy at the end of the Suharto era as a means of expanding its popularity. It began

to formalize its relief activities in 2006, when it founded the *Baguna* (Badan Penanggulangan Bencana), a special unit for interventions during catastrophes. It aims to intervene within a twenty-four-hour period and bring tents, essential supplies, and sometimes material to help rebuild destroyed infrastructures. In practice, however, it often has little besides tents to distribute to victims, as was the case, for instance, following a fire in Duri.

The Islamist PKS seems to be one of the most active political organizations. Its program promotes a moral society, with the eradication of corruption, social development, the alleviation of poverty, and the building of a society based on Islamic values. Its intervention at the grassroots level is, on the one hand, a means of showing that the party implements its program and that its deeds match its words. But in interviews its deputies at the local parliament had the same discourse on fires as the city government, both concerning their causes (for which they blame the population) and their remedies (public housing in flats). The PKS is also involved in emergency aid because it provides a means to extend its political basis, in a way recalling the Muslim Brotherhood's use of the 1992 Cairo earthquake (although PKS representatives maintain that they do a better job than their Egyptian counterparts).³¹ Postfire aid can be seen as a way to promote the party and gain support for it.

These relief activities organized by political parties may thus be interpreted in diverse ways. One can first see these activities as part of a bid for political expansion. This is clear in the case of some political parties (e.g., the PKS and the PDI-P). In such a context, what is often sought is the creation of a new clientele, in order to increase the party's power. Thus the shift from the New Order to the *Reformasi* era since 1998 can be interpreted as a shift of actors. During the Suharto era, this kind of relationship was monopolized by the Golkar. After 1998, the Golkar's monopoly was challenged by the new political parties, which were quickly gaining local support. Similar practices have thus been perpetuated, but with a wider scope, with increasing numbers of actors endeavoring to expand their clientele. During electoral campaigns, such as in July 2008, just after the launch of the 2009 campaign, numerous political parties could be seen at fire sites, with many more volunteers than in normal times (such as in the July 2008 Duri Utara fire). These variations in the help given at the local level by the political parties show the importance they assign to grassroots intervention. The progression of the popularity of the PKS party in the local elections in Jakarta would also tend to confirm the usefulness of such policies: in 2004 it became the first political party to receive nearly a quarter of the votes.

If the intention of the political parties is indeed to expand or to create popular support, its efficiency can be questioned. In practice, it appears that

the victims accept the aid, regardless of who brings it. This point can be linked to the volatility of voters in Jakarta, the difficulty for parties to gain a territorial basis, and the general disrepute in which political parties are increasingly held in the press.³²

Their increased presence can also be considered part of the trend toward giving disasters, risks, and environmental hazards better consideration in national policies, especially in the aftermath of the Indian Ocean tsunami that hit Aceh.

A third interpretation would see these relief activities as signs of individual spontaneous help by individuals in the political parties.³³ This hypothesis is sustained by the lack of postcatastrophe follow-up by the parties and of any established discourse on aid. Even within the PDI-P, the establishment of the Baguna section was presented as a personal act, being set up by former President Megawati Sukarnoputri. Eventually the lack of clear distinction between the action of NGOs and that of political parties in the field adds to this blurring of categories and also to the inefficiency of the purported expansion of political parties.

The NGO level is much more difficult to study in Jakarta at present as it has constantly been reshaped since the fall of the Suharto regime.³⁴ In the aftermath of fires, different NGOs have intervened according to the types of neighborhoods that had been destroyed. I have mostly seen advocacy NGOs out in the field when evictions were involved. A second class of NGOs is composed of religious organizations, Buddhist for instance, especially in North Jakarta, which are often active in providing relief, or Islamic, such as the Dompot Dhuafa linked with the Islamic daily newspaper *Republika*. A variant type is made up of Islamic religious NGOs with links to political parties such as Aksi Cepat Tanggap (ACT) founded in April 2005.³⁵ This NGO has intervened in several regions in the outer islands, is meant to collect funds for the relief operations, and is closely linked to the PKS.³⁶

This short typology shows different types of relationships between NGOs and the victims of fires, which are not new but take on new overtones in the *Reformasi* context. The advocacy NGOs tend to defend the rights of the weak, and they try to organize them. If such organizations did exist during the New Order, the decentralization process tended to put them closer to the governing bodies, in a more direct relationship. On the contrary, those linked to political parties, such as ACT, deny doing any advocacy but officially assert that they want to become models of how to help society and to be professional in their action.³⁷ The distinctions and complementarities between ACT and the PKS can also be questioned and reflect the persistent problems of Indonesian NGOs

and political parties regarding funding. Thus as one PKS member of parliament recognized, ACT was one means to obtain some funding for the relief operations of the PKS.

These trends in relief operations in the field show the links between the highest spheres of governmental organizations (from local institutions to political parties) and the population at the grassroots level. If the use of burned land created an image of confrontation (inhabitants evicted, lack of proper compensation), this recent use of fires shows how essential the population is to local politics, especially since the decentralization process of 1998, which led to the direct election of the provincial governor (one could see command posts of the candidates during the campaign for such elections). In the capital city, fires thus reflect the peculiar dimensions of disasters and their polysemy.

Fires reveal the links between modernity, power, and daily constraints. They reveal the functioning of a metropolis over time, from the changing uses of land, on the one hand, to the use of the victims in relief policies, on the other. In this case the change of political regime has led to an increasing number of actors intervening at the grassroots level. Yet the numerous rumors about criminal elements and practices surrounding a large number of those events show how fires are still a sensitive topic. They show how the population, when it resists new developments and market-driven practices, can be dealt with in a brutal way, by the use of intimidation (and middlemen), evictions, and fire. In the economic realm, fires also reflect different forces at work in the city, from grassroots reconstruction, using the informal sector and more or less informal reconstruction methods, to capital-intensive projects that change the physiognomy of whole neighborhoods, where reconstruction is part and parcel of Jakarta's strive toward modernity and international competition in a regional context.

In Jakarta, as in other cities, fire mitigation is intrinsically connected with politics, much more so than with the Firefighting Agency.³⁸ In a context where the agency is considered incompetent, fires question the policies surrounding urban management. They show how kampongs are considered not as residential neighborhoods to be upgraded but residues to be dissolved. The seeming powerlessness of the Firefighting Agency thus comes from its intermediate position, in which it is meant to alleviate the worse situations and does not have the means to combat fires in an effective way. In this whole process, it can be regarded as an intermediary in urban politics.

The ambivalent and ambiguous uses of fires reveal how they create opportunities for greater power, both for political elites and for the city administrations.

The inhabitants of fire-stricken areas are therefore mere tools to achieve such goals. Fires thus expose the relationships between the exercise of power, its meanings, and the development of the metropolis. Competition for urban land and for power are closely linked. Changes in the management and uses of fires signal transformations of the political realm at large. In this case, over more than forty years, little has changed. Policies regarding fires and their victims still look alike, and the grassroots are still considered in the same ways, despite changes in political regimes. Fires symbolize the formal transformations of a city as well as the blurred Indonesian politics.

NOTES

1. Batavia, capital city of the Dutch East Indies—renamed Jakarta when Indonesia gained independence—was regularly struck by fires. This essay addresses this phenomenon in recent times, when Jakarta underwent major transformations under Suharto's New Order regime (1966–98) and the following democratization period, the Reform, or *Reformasi* era (since 1998).

2. The material for this essay comes from interviews and observations during my dissertation fieldwork on a different topic in the Tanah Tinggi subdistrict in Central Jakarta, which had been burned down several times. Further surveys were conducted from 2005 to 2007. I have also conducted interviews with actors from the Provincial Government (the Fire Fighting Agency in particular), the forensic police, political parties and non-governmental organizations. Additional information and statistics were drawn from newspapers when no archive was available.

3. These are usually characterized as drier and hotter El Niño years. In a built environment, where the human factor seems predominant, this correlation with dry years seems strange. It can be explained by the scarcity of water or even more conducive environments with drier wooden materials. See Stephen Pyne, *Fire: A Brief History* (Seattle: University of Washington Press, 2001), 112–13.

4. Those huge blazes are not a new event in Jakarta. For instance, in July 1952, 10,000 people lost their houses, in 1953 as much in the Tanah Tinggi subdistrict. During the colonial era, 1,500 coolies lost their houses to fires in Bladongan in 1854. The Dutch hygienist programs in the first part of the twentieth century also addressed such issues. Cf. Johan W. Tesch, *The Hygiene Study Ward Centre at Batavia: Planning and Preliminary Results (1937–1941)* (Leiden: Universitaire Pers Leiden, 1948).

5. Badan Pusat Statistik, *Hasil Sensus Penduduk 2010*, www.bps.go.id (accessed August 17, 2011).

6. Such aspects are underlined by several authors but in historical context; see Lionel Frost, "Coping in Their Own Way: Asian Cities and the Problem of Fires," *Urban History* 24, no. 1 (May 1997): 7–8; and Stéphane Yerasimos and Franck Fries, eds., "La Ville en feu: Actes de la journée du 4 juin 1993 organisée par le Laboratoire 'Théorie des Mutations Urbaines,'" *Cahiers TMU*, nos. 6–7 (September–December 1993): 172.

7. Lionel E. Frost and Eric L. Jones (“The Fire Gap and the Greater Durability of Nineteenth Century Cities,” *Planning Perspectives* 4 [1989]: 341), for instance, emphasize the differences in the flammability of cities as they undergo various stages of growth, in Western cities in particular, with the reduction of fire damage by the increasing use of less-flammable building materials. Such considerations would thus hint at the processes of modernization of cities. These schematic evolutions are nevertheless debatable as construction materials, their volatility, and cheap prices can be part of strategies for coping with fires.

8. In a general sense, *kampung*, or kampongs, usually refer to popular and poorer neighborhoods.

9. *Kompas* (Jakarta), June 27 and 29, 1967.

10. See Jérôme Tadié, “The Hidden Territories of Jakarta,” in *The Indonesian Town Revisited*, ed. Peter J. M. Nas (Münster: Lit Verlag; Singapore: ISEAS, 2002), 402–23.

11. These statistics are highly approximate as they are an average of the fires displacing more than five hundred inhabitants in Jakarta from the 1990s to 2005, with many the durations for many fires lacking.

12. Theft occurred during the September 1988 Karet Tengsin fire, for instance, according to *Suara Pembaruan* (Jakarta), September 12, 1988.

13. *Suara Pembaruan* (Jakarta), December 3, 2002.

14. *Pelita* (Jakarta), November 5, 1990.

15. Johan Goudsblom, *Fire and Civilisation* (London: Allen Lane, 1992), 158–59.

16. These rumors of arson are also widespread in cases of market or department store fires, where insurance issues are at stake.

17. In the statistics given by the forensic police in 2006, arson would not be substantiated in most fires investigated.

18. See Jérôme Tadié, *Les Territoires de la violence* (Paris: Belin, 2006), 167–69.

19. Frost, “Coping in Their Own Way,” 9.

20. Charles Goldblum et al., *Métropoles de l'Asie du Sud-Est: Stratégies urbaines et politiques du logement* (Paris: L'Harmattan, 1987), 150–81; Susan Abeyasekere, *Jakarta: A History* (Singapore: Oxford University Press, 1989), 222–26; Ali Sadikin, *Gita Jaya: Catatan H. Ali Sadikin, Gubernur Kepala Daerah Khusus Ibukota Jakarta, 1966–1977* (Jakarta: Pemerintah Daerah Khusus Ibukota Jakarta, 1977), 258–63; Alison Murray, *No Honey No Money: A Study of Street Traders and Prostitutes in Jakarta* (Singapore: Oxford University Press, 1991), 15–16, 22.

21. Construction of other such blocks was begun in 1990, 1992, 1994, 1996, and 2002 (and usually completed one year later). Data from the Housing Agency of the DKI (Capital Special Region of Jakarta), Jakarta, January 2006.

22. In Jakarta's planning system, the land on which the kampung was settled was meant for housing purposes. Nevertheless, a great part of it was state land, and most of the inhabitants had use rights.

23. “In these occasions they [the firemen] come fast. Try and imagine when there's a fire, they come late on purpose, waiting for our houses to be burned down first.” *Kompas* (Jakarta), August 12, 1993. Information about the Tanah Tinggi case comes from

interviews and the newspapers *Kompas* (Jakarta), *Pos Kota* (Jakarta), *Sinar Pagi* (Jakarta), *Suara Merdeka* (Semarang), *Harian Pelita* (Jakarta), and *Media Indonesia* (Jakarta) from those periods.

24. This is a trend in housing flats in Jakarta, where the intended population is usually not the one that eventually occupies the flats. See *Kompas* (Jakarta), October 26, 2000.

25. *Bisnis Indonesia* (Jakarta), November 7, 1991. In this article the governor also says that the location of future public housing had already been programmed and enumerates the locations for Central Jakarta.

26. Statement from an official of the Housing Agency of the DKI Jakarta (Kasubdis Pengendalian Pembangunan Perumahan DKI Jakarta), *Media Indonesia* (Jakarta), April 4, 1995.

27. See Nancy H. Kwak, "The Politics of Singapore's Fire Narrative," this volume.

28. See "The Evolving Objectives and Outcomes of World Bank Shelter Assistance," in *Thirty Years of World Bank Shelter Lending: What Have We Learned?*, ed. Robert M. Buckley and Jerry Kalarickal (Washington, DC: World Bank, 2006), 7–22.

29. Charges of extortion are denied on a regular basis by the agency. For a rare newspaper account of such misconduct, see *Kompas* (Jakarta), April 17, 1983. The chief of the West Jakarta subsection of the agency was tried in July 2005 for fictitious projects that led to his personal enrichment. See *Koran Tempo* (Jakarta), November 29, 2005.

30. In an interview, a former head of the forensic police, who specialized in arson, told me how, during the New Order, the investigators were often forced to conclude that the fire was an accident, whereas that was not the case.

31. Cf. Zulkieflimansyah, "Overcoming the Fear: PKS and Democratization," *Jakarta Post*, December 13, 2005, and interview with the author, August 22, 2007. Several PKS members of the local parliament declared that in the 2004 elections, they made gains in districts in which they had intervened.

32. I would like to thank the *Kompas* (Jakarta) Research and Development Department for these insights.

33. In this case, the aid could be interpreted in a more culturalist point of view, as a prolongation of *gotong royong*. See Niels Mulder, *Inside Indonesian Society: Cultural Change in Java* (Amsterdam: Pepin Press, 1999), 68, 175. I would like to thank Risa Permanadelli for discussions of this matter.

34. On NGOs in Indonesia, see Philip Eldridge, "Non-Government Organizations, the States, and Democratization in Indonesia," in *Imagining Indonesia: Cultural Politics and Political Culture*, ed. J. Schiller and B. Martin-Schiller (Athens: Ohio University Press, 1997), 198–228; *Lembaga Swadaya Masyarakat menyuarakan nurani menggapai kesetaraan* (Jakarta: Kompas, 2004); cf. Lea Jellinek, "Collapsing under the Weight of Success: An NGO in Jakarta," *Environment and Urbanization* 15 (2003): 171–80, for a critical view of the transformation of NGOs during the *Reformasi* era, as well as Anu Lounela, "Take the Money or Die: A Flood of 'Democratisation' Dollars Has Corrupted the NGO Movement," *Inside Indonesia* (January–March 2002), <http://www.insideindonesia.org/edition-69/take-the-money-or-die-3007418> (accessed on March 2, 2006).

35. Most of the members of ACT were in the Dompet Duafa sponsored by the *Republika* (Jakarta) newspaper.

36. Interview with Zulkieflimansyah, PKS member of parliament, August 22, 2007. When I interviewed the ACT managers, they denied such links. In fact, during some relief operations, I saw ACT vehicles bringing basic goods to the PKS command post.

37. Interview with Ahyudin, executive director of ACT, August 27, 2007. Such a discourse can also be interpreted as legitimating the NGOs especially compared to political parties: the NGOs have better access to the population (from which they gain their legitimacy) and better understand the people, which allows them to take better care of them.

38. For an example of another city, see Kwak, "The Politics of Singapore's Fire Narrative," this volume.



Afterword

Fire on the Fringe

STEPHEN J. PYNE

In April 2010, the National Center for Ecological Analysis and Synthesis (NCEAS) held a weeklong workshop on the subject of fire and humanity. The immediate setting was a large conference room on the third floor of the NCEAS building at 735 State Street in downtown Santa Barbara, California. The attendees, all invited, were overwhelmingly natural scientists convinced that ecology had to include human agency over fire if it was to make sense of what they were calling pyrogeography. No one had to state the obvious, that the setting was itself testimony to this imperative. The city looked up to the Santa Ynez Mountains, almost all of which had recently burned. The Painted Cave fire, the Jesusita fire, the Tea fire—to scan those steep slopes, like an amphitheater viewed from a stage, was to see swaths of burned bleachers.

That the gathering perceived such a need was an oddity of scholarship. Fire has been at the core of a living Earth for 400 million years, yet no discipline claims it. Geology texts barely mention fire, despite the fact that it is a geomorphic force and that fusain, or fossil charcoal, makes up significant fractions of coal deposits (up to 25 percent of Carboniferous seams, for example). General biology texts scarcely allude to fire's existence, in defiance of the fact that fire is biologically constructed and an intrinsic property of life on Earth. Ecology largely shuns the

subject since fire science is funded by land-management agencies, not by research institutions for the academy, and since most fires are associated with humans, it is not deemed a fit topic for real science. History fails to acknowledge flames except as a sideshow of freakish disasters—this despite the fact that humanity has a species monopoly over fire, a capacity that defines its evolution and biological behavior as nothing else can and that underwrites virtually all its technologies. Scholars of cities have followed suit: fire appears, if at all, as an interruption of normal history, a breakdown of order, or an occasion for journalistic hyperbole. Intellectually, fire remains on the fringe, just as it does on the flanks of Santa Barbara.

The assembled savants missed a deeper irony, however, for they did not include the cityscape as part of their charge. Yet fire was there, too, and it shaped nearly every element of the built environment. The room in which they met had double exits, smoke detectors, fire alarms, and sprinklers. Rules allowed only a fixed number of occupants. The room's desks, chairs, and flooring, the electrical appliances that supplied light, heat, and power, all came with laboratory testing against the likelihood that they might start an accidental fire. The emergency exit lighting had a separate power source. The building containing the room conformed to other codes, as did those buildings around it. The streets had hydrants, with prohibited parking zones around them. The city staffed a fire department to respond in case of an ignition. The obsessions of this fussy fire designing had as their goal the control over and ultimate abolition of fire. In brief, every aspect of human-constructed Santa Barbara had been shaped by fire—or more properly, by the idea and fear of fire—as fully as the chaparral-clad slopes of the Santa Ynez.

So, too, the scholarship of cities has tended to consider fire a freak, or something banished to the past, or at most a specter that from time to time haunts the unsettled fringe. If a fire scholarship exists, it does so within the prisms of other disciplines. It derives from those fundamentals. After all, the only fire department on a university campus is one that sends emergency vehicles when an alarm sounds. Paradoxically, the humanities, not less than the natural sciences, have exchanged a real world in which mountains and cities routinely burn for an imagined one in which fires have blown away with the smoke of history. They assume that their core scholarship, like the modern urban center, should be free of flame, and over time diligent effort will make it so.

The reasons behind this pyric banishment are easy enough to identify. It begins with geography. The distribution of fire on Earth is uneven; there are places with routine fire and places without it. Curiously, one of the places without a solid basis for natural fire is temperate Europe, which became in the eighteenth

century the source for a new outbreak not only of imperialism and settlement but of economic and intellectual dominance. Temperate Europe replaced Mediterranean Europe as the standard for Europe overall; European experience was accepted as natural; and Europe's ideals of nature and humanity, as normative. A place with a pittance of natural fire became the standard for places that overflowed with it. The grating frontier between a fire-intolerant Europe and its fire-flushed colonies was, not infrequently, one long firefight.

Temperate Europe's own experience with fire was one in which fire flourished through the artifice (or carelessness) of people. Europe's was a constructed landscape, a garden, and fire was a tool for gardening, one that might be legitimately replaced by better tools. Fire existed because people put it in. So, likewise, they might take it out. Wildfire was an index of a breakdown in the social order that manifests itself in a cultivated landscape no longer tended—full of weeds and overgrown with brush and as ripe for flames as an abandoned or slovenly farm was for vermin.

From the beginning, moreover, the cultural understanding of fire and its place showed a rift between those in authority and those in the field. Academics, ministers of agriculture, people responsible for maintaining social order all detested and feared fire and sought to remove it. Even so august an authority as Linnaeus was forced by Sweden's minister of agriculture to remove passages favorable to fire that appeared in his Skåne journey (he had to replace them with a paean to manure). With equal conviction, however, practitioners all relied on fire to make the landscape work. Europe's was a fire-fallow system of farming and pastoralism that required a regimen of prescribed burning. Intellectuals condemned the practice as the relic, wasteful superstition of an ignorant peasantry—and a danger to boot.

Cities, too, required open fire to function. Controlled fires supplied their heat and light; they warmed homes and cooked food; they lit rooms and streets; they converted ore, stone, and wood to metals, glass, chemicals, and fertilizers. They were the dispersed power source behind cityscapes, a kind of sublimated sun. Constructed out of natural materials—wood, wattle, thatch—cities burned like the landscapes around them, a macabre, urban doppelgänger of fire's natural ecology.

By the latter seventeenth century, this pattern in Europe began to break down. Cities were deliberately designed, in part, to protect them from fire. Pumps and other devices for extinguishing fire became available. Civic institutions emerged to respond to fire's threat. Above all, construction materials shifted from the flammable to the noncombustible, or more properly, to materials such as bricks that had already passed through the flames. What burned in urban

landscapes were the wood-stuffed interiors. Then, as cities began to push outward, their dispersion lessened their fuel loads and the arrangements that allowed flame to rush continuously through slums and decaying, overgrown town blocks.

Another way to say this is, industrialization passed over temperate Europe's cityscapes and reduced their propensity to burn. Industrialization broke fire's urban ecology, just as it subsequently did fire's agricultural ecology and eventually its wildland ecology. For fire history, "industrialization" refers to the use of fossil biomass as a primary fuel. Such combustibles demanded special chambers in which to burn, and this internalization removed open fire through a process of technological replacement. It also allowed the wholesale production of less-combustible building materials, powered fire engines, encouraged the spread of suburbs through steam transportation, and generally made cities places hostile to open flame. To become "modern" was to industrialize, and to industrialize was to remove fire from vernacular life.

This material conversion paralleled an intellectual one. The Enlightenment did to inherited thinking about fire what industrialization did to its inherited fire landscapes. When the era started, fire was still ubiquitous in natural history: a central fire powered Earth, solar fires illuminated the heavens, electrical fire flashed through the sky, open flame rippled through field and forest, furnaces and hearths cooked both food and raw stone and wood. If you made a mistake in your rendering of fire, asserted Hermann Boerhaave, the error would cascade everywhere since fire is an organizing principle of nature and nature's philosophers.

By the late eighteenth century, however, that hegemony began to unravel. The discovery of oxygen made combustion into a subset of chemistry. The enunciation of thermodynamics made heat transfer into a derivative study of physics. The conversion of coal to steam moved fire from a practice of farmers and herders and artisanal pyrotechnicians into the realm of mechanical engineers. Fire faded away as an informing concept, not unlike the contemporaneous dissipation of the great chain of being. In discipline after discipline, landscape after landscape, fire became a second- or third-order epiphenomenon.

The one discipline that continued to scrutinize fire was forestry, and this because state foresters were granted suzerainty over reserved lands in Europe's expanding imperium. They saw fire as a challenge to their authority and a threat to state-sponsored conservation. They obsessed over it; they feared it; they sought to know it in order to expunge it. Forestry was a graft on the great rootstock of European farming, and true foresters considered fire not a legitimate part of their husbandry but something they had to remove in order to do their proper business. Bernhard Fernow, a Prussian who moved to the United States

to become that country's first professional forester, famously denounced the American fire scene as one of "bad habits and loose morals."¹ They conceived fire as a problem of social disorder. A rash of landscape burning was something young countries passed through, like childhood diseases, before gaining immunity and maturity. Oddly, the one profession to take fire *qua* fire seriously was committed in principle to its extinction and further ghettoized its study by refusing to absorb fire's management within its formal scholarship.

For the industrial world fire in cities became increasingly something that happened during massive disorders, particularly earthquakes and wars, that not only kindled many burns but crushed the capacity of urbanites to fight them down. Like the guild of foresters, professionalizing fire departments made the abolition of fire a goal. They studied fire in order to remove it, as epidemiologists might conduct research on smallpox. In wildlands the earliest flashes of fire ecology, like that from Frederic Clements, imagined fire as an interruption in the "natural" progression toward a stable climax. So, similarly, was it viewed in towns. A normal evolution would quench fire from cityscapes, and of course, from their narratives.

For a while, that scenario seemed to play out. Fire steadily disappeared from fields, wildlands, and cities in the developed world and became an index of modernity for the developing world. Its study was securely contained within the intellectual firewalls of a score of disciplines. Then the apparently improbable became the surprisingly inevitable. Fire returned.

It returned, mostly simply, because it had never left. Industrial societies had sublimated and hidden it, and like foresters denouncing what they intended to suppress, intellectuals overlooked the pervasiveness of fire on Earth. They admired the Santa Ynez Mountains without noting one of their most obvious features: they were burned or burning. Their fires remained on the fringe, geographically and conceptually, but that fringe, and its fires, were no longer something pushed ever further and further away, but something moving from the outside in. The putatively expelled flames were raining embers onto the city core.

Throughout the developed world—save, of course, where no natural basis for fire existed—fires broke out like the revival of a once-vanquished plague. In some places they resulted from abandoned or rapidly converting agricultural lands; this underwrote much of the outbreak across the northern rim of the Mediterranean basin. Elsewhere, they resulted where exurban enclaves were flung into or plastered over formerly rural and still fire-prone landscapes; such was the scene in America, Australia, and Canada, where fires burst out of nominal wildlands to strike titular settlements. Where political decisions had fashioned

firm borders, the so-called wildland-urban interface (WUI) became a metastable demilitarized zone with a brokered truce between incommensurable land usages. Since the late 1980s, the WUI (or interface zone) has dominated the agenda of fire agencies in the developed world, perhaps nowhere with more ferocity and cognitive dissonance than Southern California, where extreme fires meet an extreme media. Smoke plumes over the Hollywood Hills have come to resemble a bad reality TV show renewed season after season.

This revival of flame as routine public theater coincided with a rekindled interest in fire's administration and scholarship. In wildlands fire became something to be managed, or even restored, not extinguished. Fire was conceived as less a tool for land management than an ecological process that did biological work nothing else could do. Ecology rejected a rigid model of landscape succession in favor of a more chaotic pluralism. The extraordinary summer of fires that gripped Yellowstone National Park in 1988 carried the message to the public. By the end of the twentieth century, fire's presence on public lands had come full cycle. Fire management was consuming over half the budget of the US Forest Service, and the current chief, along with four former chiefs, wrote an open letter to Congress explaining that, if the trend continued, fire would consume the agency itself.

At the same time, urban scholars began to appreciate that cities, too, did not obey universal templates of evolution, that fire's removal was more apparent than real, that fire as a presence and topic was not something likely to disappear soon. Like an informing principle, whether visible or not, fire had shaped cityscapes. That history deserved reconsideration: its narrative could even serve, as natural scientists might put it, as a model system for urban studies, as an index not for progress but for the limits of human control and received scholarship. The WUI had its counterpart in a revival of urban fire studies. The fringe burned. The center could no longer ignore those looming flames and rain of sparks.

While it is unlikely that this scholarship will remake the fundamentals of urban studies, any more than those fringe fires will penetrate into the urban core, they help frame the borders of narrative and illuminate the central text. And that is the value of this particular volume, with its remarkably robust survey of cultures, cities, and histories. If it denies the universality of a single narrative for urban fire, it affirms the universality of fire within urban history.

Fire remains what it has always been—a reaction. It synthesizes its surroundings, takes its character from its context, forces scholarship to integrate disciplines and particularities of time, place, and ideas. Natural scientists are coming to recognize that fire is an inextricable part of life on Earth that will not simply fade away, that its presence is historically constructed and unknowable

without unknotting that temporal unfolding, that its removal can be as powerful as its active presence, and that it has the capacity to act on scholarship as it does on biotas, as a means to analyze and synthesize. They are slowly coming to appreciate that humans, as Earth's keystone species for fire, must become an integral part of that understanding.

It remains to bring humanity's unique urban habitats into that grand narrative, which is to say, to engage the humanities. For this it may be necessary to reverse relationships along the interface, to see ourselves as fire might see us, and to view the city from the perspective of its flaming fringe. That is where visions and scholarships meet, sometimes to incinerate and sometimes to fuse. That flaming fringe may, in truth, be the true core.

NOTE

1. Fernow quoted in Andrew Denny Rodgers III, *Bernhard Eduard Fernow: A Story of North American Forestry* (New York: Hafner, 1968), 167.

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“A REMARKABLY ROBUST SURVEY OF CULTURES, CITIES, AND HISTORIES THAT AFFIRMS THE UNIVERSALITY OF FIRE’S IMPACT WITHIN THE URBAN SETTING.” —STEPHEN J. PYNE

In most cities today, fire has been reduced to a sporadic and isolated threat. But throughout history the constant risk of fire has left a deep and lasting imprint on almost every dimension of urban society. This volume, the first truly global study of urban conflagration, shows how fire has shaped cities throughout the modern world, from Europe to the imperial colonies, major trade entrepôts, and non-European capitals, right up to such present-day megacities as Lagos and Jakarta. Urban fire may hinder commerce or even spur it; it may break down or reinforce barriers of race, class, and ethnicity; it may serve as a pretext for state violence or provide an opportunity for displays of state benevolence. As this volume demonstrates, the many and varied attempts to master, marginalize, or manipulate fire can turn a natural and human hazard into a highly useful social and political tool.

“How do people in an urban environment deal with the problem of fire? The essays in this book show how the answers vary depending on economic conditions, power structures, climate, and culture. An excellent collection.”—
Johan Goudsblom, author of *Fire and Civilization*

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