

Conflagration in Baltimore

BY KARL RHODES

The 1904 disaster was a turning point for U.S. fire prevention

On a cold Sunday morning in February 1904, a small ember or spark ignited packing cases in the basement of the “fire-proof” Hurst building in downtown Baltimore. Firefighters arrived quickly and broke down a door, creating a backdraft that whisked superheated air up the building’s unprotected elevator shaft and central staircase. The firemen heard doors slamming shut on the upper floors of the six-story headquarters of John E. Hurst and Company. Then they heard an “ominous rumbling.”

The firemen retreated to the street minutes before an ear-splitting explosion blew the roof off the building, showering adjacent structures with flaming debris. As more firefighters rushed to the scene, a hook-and-ladder wagon zoomed past a nearby church, catching the attention of Reverend D’Aubigny, a visitor from France. He was anxious to witness an American conflagration. “That is something I must see,” the reverend said. “We do not have them in Paris.”

D’Aubigny, no doubt, was shocked by what he saw. The fire raged for 30-plus hours, destroying more than

1,500 buildings on 86 city blocks in the heart of what was then America’s sixth-largest city. Miraculously, the fire killed only four or five people, but it left 35,000 people jobless. Damage estimates reached as high as \$100 million — more than \$2.6 billion in today’s dollars.

In the 19th century and early 20th century, conflagration was a constant threat to American cities, primarily because they had been built more quickly and cheaply than their European counterparts. American fires consumed large amounts of capital each year. One estimate in 1910 put the average annual “fire waste” at \$500 per minute in the United States, which would be about \$12,340 per minute in today’s dollars.

“How absurd it is that we have fires to-day!” wrote Maynard Metcalf in the July 1916 issue of *Scientific Monthly*. Metcalf, a zoologist at Johns Hopkins University, highlighted Reverend D’Aubigny’s fascination with American conflagrations to demonstrate that U.S. cities were much more vulnerable to massive fires than European cities. “The economic system of fire insurance under private management, so greatly developed, has removed the individual motive for fire prevention,” Metcalf charged. “It is simpler for the individual to gain security against loss by fire by hiring an insurance company to carry his risks than it is for him to prevent loss from fire by building fireproof buildings.”

Insurance rates typically did not reward fire-resistant construction in 1904, agrees Marc Schneiberg, an organizational and economic sociologist at Reed College. “So it was not clear who would reap the benefits.” Reformers within the industry had been advocating risk-adjusted rate schedules for years, but many insurance executives failed to see how their companies would benefit from prevention. “As long as they could keep the premium rates and the loss rates in the right proportion, they

Moments after the ear-splitting explosion, the “fire-proof” Hurst building was engulfed in flames.



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really didn't care if they had high average losses because they would just raise rates," Schneiberg says.

This attitude infuriated critics who contended that insurance companies made cities more hazardous by not differentiating between safe and unsafe properties, according to Sara Wermiel, a research affiliate of MIT's Program in Science, Technology, and Society and author of *The Fireproof Building: Technology and Public Safety in the Nineteenth-Century American City*.

But after the Baltimore fire, insurance leaders began to realize that their ability to continually raise rates to pay for conflagrations was declining because of increasing political and competitive pressures. And when the devastating San Francisco earthquake and fire occurred in 1906, the conflagration hazard appeared to be getting much worse.

These events "forcibly brought home to insurance engineers that the increasing congestion of values in the larger cities represented a menace both to the public and to the business of fire underwriting," wrote H.A. Smith, president of the National Fire Insurance Company of Hartford, in the *Annals of the American Academy of Political and Social Science* in 1927. "Although the business profited because fire is an ever-present possibility in all walks of life, the incineration of material wealth was reaching proportions which threatened economic disaster."

Baltimore Ablaze

After the Hurst building exploded, Baltimore's fire chief sent an urgent telegram to his counterpart in Washington, D.C.: "Big fire here. Must have help at once."

Firemen from Washington scrambled onto railroad flatcars for a full-throttle, open-air ride to Baltimore in sub-freezing weather. Cheering crowds welcomed them to Camden Station, but by then, the fire was spreading to the northeast beyond the seven-block area bounded by the streets of Liberty, Lombard, Baltimore, and Hopkins Place.

To make matters worse, the D.C. firefighters discovered that the couplings on their hoses did not fit Baltimore's hydrants. They devised makeshift adapters, but the water pressure in their hoses was severely limited. Firemen arriving in Baltimore from other cities also encountered similar compatibility problems.

Initially, Baltimore turned down offers of assistance from other cities, but the fire continued to burn out of control, and at 6 p.m. the mayor sent a desperate dispatch to Philadelphia: "Send all help possible." Philadelphia responded quickly, as did New York, Wilmington, Del., and 20 smaller mid-Atlantic cities. Dozens of engine companies — assisted by more than 2,000 Maryland National Guardsmen — tried in vain to contain the fire throughout the night. At one point, demolition crews attempted to create fire breaks by blowing up buildings in the fire's path. One pre-emptive explosion at the Armstrong Shoe factory sent "shoes and boots flying into the night sky," but the blasts failed to bring down the buildings, according to Peter Charles Hoffer, a history professor at the University

of Georgia and author of *Seven Fires: The Urban Infernos that Reshaped America*. Instead of stopping the fire, the explosions blew out windows of adjacent buildings, making them more vulnerable to the flames and intense heat, which reached 2,500 degrees in some hot spots.

After 10 p.m., the wind shifted and intensified, with gusts exceeding 30 miles per hour. "Had this wind brought with it rain or snow, the fire might have quieted, but the angry current only drove the fire southeast, toward the harbor and the pier warehouses loaded with new sources of fuel," Hoffer wrote.

On Monday, the wind blew the fire south toward the harbor and east toward Jones Falls, a canal that was about 75 feet wide. There were large residential sections east of the falls, so the firemen resolved to stop the conflagration there in what Hoffer called "one of the most remarkable stands in the history of American firefighting." Hoffer's personified fire "leaped at targets of opportunity in the lumberyards, malt houses, and dwellings on the east side of the falls. Had it established a beachhead on the east side, all of east Baltimore would have shared the fate of downtown." But the engine companies held their ground, and by 5 p.m., the fire had essentially run out of fuel.

In the days that followed, engineers, architects, and builders converged on Baltimore to study the ruins — especially the remnants of the city's so-called "fire-proof" buildings. Wermiel credited "a wall of substantial public buildings" for helping to turn the fire south toward the harbor. Metcalf also praised the well-protected O'Neil building, which sustained almost no damage, for helping to turn the fire east toward the falls. The contents of the city's other "fire-proof" buildings burned "like charcoal in a furnace," Hoffer wrote, but their superstructures remained intact. While some critics ridiculed these charred skeletons, the visiting architects and engineers concluded that Baltimore's "fire-proof" buildings performed well considering the intense heat that surrounded them during the inferno. "In other words, fire-resistive buildings could help avert conflagration, but not if they stood as islands in a sea of firetraps," Wermiel concluded.

In the months following the Baltimore fire, campaigns for fire-resistant construction and other preventive measures gained momentum. For example, the National Fire Underwriters Board (NFUB) established national building code guidelines in 1905. These guidelines had been in the works for a long time, but the Baltimore and San Francisco fires made cities and states more willing to adopt them, says Dalit Baranoff, an expert in the history of fire insurance and a fellow at the Johns Hopkins Institute for Applied Economics, Global Health, and the Study of Business Enterprise.

The NFUB also commissioned a committee of fire experts to assess risks in "conflagration districts" around the country. Many cities made important safety improvements as a result of the committee's inspections — not just to be safer, but to bring down their insurance rates.



The Conflagration Hazard

As American cities grew “from settlement size to metropolis size, the size of the largest fires grew in proportion,” wrote nuclear-safety consultant William Shields in his Ph.D. dissertation in science and technology studies at Virginia Tech. Vast supplies of wood fueled the problem. “While many of the developed nations of Europe had exhausted forest reserves by the start of the 19th century, in the United States, the almost limitless availability of inexpensive, virgin-forest wood tended to discourage the use of brick, stone, and marble in the construction of dwellings, shops, factories, and warehouses.”

Rapid industrialization and urbanization created dense clusters of high-value capital, greatly increasing the demand for fire insurance. And as more and more businesses borrowed money to finance their buildings, equipment, and inventories, fire insurance became indispensable to American commerce because lenders required it. But there were serious flaws in this burgeoning market. Initially, fire insurance companies wrote policies only in their own cities. So when conflagration destroyed New York’s business district in 1835, nearly all of the city’s 26 fire insurers went bankrupt, according to Baranoff.

During the next 25 years, fire insurance companies spread their risks geographically — most notably, by expanding westward and working with independent agents who represented multiple companies in local and regional markets. But geographic diversity alone was not enough to protect fire insurers. Low barriers to entry and high levels of competition drove premiums too low for many of them to survive conflagrations. This problem resulted in lots of unpaid claims and worthless policies following huge fires in Chicago and Boston in the early 1870s. Many insurance companies went bankrupt, not only in the stricken cities, but in other areas of the United States as well.

After the Civil War, fire insurance companies had tried to address the conflagration hazard by forming a national trust, but “they weren’t able to fix prices on a national level because there were so many local factors involved in setting

rates,” Baranoff says. The companies also experienced many of the classic obstacles to collusion — “free riding, defection, and prisoner’s dilemmas,” Schneiberg wrote, in a 1999 article in *Politics & Society*.

The national trust scheme failed, but after the fires in Chicago and Boston, independent agents formed local and regional cartels that were somewhat successful at fixing prices at higher levels. From 1885 to 1910, the cartels stirred up a lot of “anti-compact” legislation in many states, but they began to address the failure of the old system by allowing insurance companies to build up greater reserves.

As a result, only a few insurers failed after the massive Baltimore fire, according to Baranoff. Nearly 90 percent of claims got paid, and the city’s economy recovered quickly as money flowed into its burnt district.

Fixing Rates

At the time of the Baltimore fire, the fire insurance industry’s business model was simple. Local insurance agents colluded with each other and the companies they represented to fix rates at profitable levels. This collusion allowed insurers to build up enough reserves to survive the next conflagration, and when the smoke cleared, the cartels pushed premiums even higher.

But substantial rate hikes following the Baltimore and San Francisco fires met fierce resistance. The long-smoldering political feud between policyholders and insurance interests burst into flames. More states enacted anti-compact laws, and some states resorted to direct government rate setting. Meanwhile, growing competition from factory mutuals — groups of large industrial companies that banded together to self-insure — made it more difficult for insurance cartels to continue raising rates.

“Rate wars, conflagrations, and political conflicts generated severe shortages and waves of bankruptcies,” Schneiberg wrote. These problems “served as object lessons or events that increased buyers’ receptivity to arguments for association and enhanced the credibility of insurers’ efforts to reframe price fixing as economically rational.” (Schneiberg



This cycloramic (360-degree) photograph shows the smoldering ruins of the Great Baltimore Fire from Hanover Street.

prefers the more neutral term “association” because the cartels had both positive and negative effects on insurance markets.) In particular, “bankers, creditmen, and credit-based trades had strong incentives to join insurers in their search for order.”

One turning point in that search for order came in 1910 while a joint committee of the New York State Legislature was investigating the fire insurance industry. Named for its chairman, Edwin Merritt Jr., the Merritt Committee ultimately endorsed the cartels (or associations) and codified three principles that insurance reformers had been advocating for many years — schedule rating, collective bargaining, and fire prevention. For individual policyholders, these interrelated principles linked premiums “to the documented features of a risk.” This approach “promised insureds lower rates (individually) in exchange for their taking steps to reduce hazards,” Schneiberg wrote. Likewise, “insurers began to bargain collectively with civic groups, local officials, and trade boards, offering lower rates (collectively) for specific improvements like passing building codes or razing hazardous stretches of buildings.”

“Reduce the fire loss and let the premiums take care of themselves?” Merritt mused, during his questioning of insurance executive Edward Beddall.

“Yes, sir,” Beddall replied, “the premiums will go down quickly if you reduce losses.”

That simple statement became the conciliatory chord that gradually transformed confrontation into cooperation.

When insurance companies began sharing their loss data — via associations — and using actuarial science to make justifiable connections between risks and rates, policyholders and regulators came to realize that cartels (or associations) really could help reduce fire waste. “Legislators, regulators, and consumers began to endorse fire insurance associations in exchange for regulatory oversight,” Schneiberg says. By 1920, more than 20 states had sanctioned associations, and “by 1950, this stance was nearly universal.”

During those years, as the rate-setting process became more scientific, transparent, and regulated, property owners started making safety improvements to lower their insurance rates. These preventive efforts — along with the proliferation of electricity, electrical-safety standards, building codes, better firefighting capabilities, and other technological improvements — eliminated the threat of urban conflagration.

“The Great Fire of Baltimore was the last of its kind, a citywide fire developing from a single fire source,” Hoffer concluded. “Other cities would burn ... but no American city would again allow a single spark to reduce an entire city core to ruins.”

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*Except where otherwise noted, accounts of the Baltimore conflagration appearing in this article come from *The Great Baltimore Fire* by Peter Petersen or *Seven Fires* by Peter Charles Hoffer.*

READINGS

Beddall, Edward F. “Verbatim Report of His Testimony before the New York Legislative Investigating Committee.” *Weekly Underwriter*, Jan. 14, 1911.

Hoffer, Peter Charles. *Seven Fires: The Urban Infernos that Reshaped America*, New York: PublicAffairs, 2006.

Petersen, Peter B. *The Great Baltimore Fire*. Baltimore: Maryland Historical Society, 2004.

Schneiberg, Marc. “Political and Institutional Conditions for Governance by Association: Private Order and Price Controls in American Fire Insurance.” *Politics & Society*, March 1999, vol. 27, no. 1, pp. 67-103.

Wermiel, Sara E. *The Fireproof Building: Technology and Public Safety in the Nineteenth-Century American City*. Baltimore: Johns Hopkins University Press, 2000.