

## Fires and Firefighting in 18<sup>th</sup> and Early 19<sup>th</sup>-Century Paris

*David Garrioch*

Everyone who has heard of the Great Fire of London knows that fire was one of the greatest risks facing early modern cities. Large fires occasionally destroyed entire neighborhoods, as the Great Fire disastrously demonstrated. The popular wisdom, disseminated in histories of local fire brigades, in fire museums, and indeed in many works by urban historians, is that there were few defenses against fire until the nineteenth century, when well-equipped, dedicated fire services were established. Fire is seen as a force of nature, one that only the coming of modern technologies and forms of organization could contain.

My purpose in this short article is to show, using the example of Paris, that these are urban myths. Although there is no doubt that late nineteenth-century technologies of firefighting were infinitely superior to those of earlier periods, if we look at what was happening at street level, we can see that across the eighteenth century more and more fires were successfully extinguished using older methods. However, the nature of fires in Paris was changing, and firefighters were not facing the same problem in 1810 as in 1710. This meant that the old techniques were no longer so effective. In short, the creation of a modern fire service was, at least in part, a response to a new problem rather than to an eternal one. Furthermore, its introduction was far more gradual than the traditional story suggests, as authorities and urban populations struggled to understand and to adapt to the changes taking place.

The history of firefighting is mostly left to amateur historians, often former firefighters themselves. Their research is sometimes excellent, but the story they tell is generally a heroic one of human triumph over natural forces and over the ignorance of our ancestors. The authors are typically fascinated by the technology of firefighting and devote much attention to its development. Earlier methods are described as amateurish and ineffective.

Professional historians rarely venture into this territory. When urban historians discuss fire, they are interested primarily in its impact on the built environment or on the society concerned. Hence, we have fine histories that examine religious or political responses to fire,

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David Garrioch is Professor of History at Monash University, Australia. His most recent book is *The Huguenots of Paris and the Coming of Religious Freedom* (2014).

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or the social divisions opened wide by disastrous fires.<sup>1</sup> For specific cities, we have well-researched accounts of fire prevention measures, particularly where—as in Venice, Vienna, or London—these were innovative or precocious.<sup>2</sup> More general city histories usually note only in passing the slow development of professional fire services. The main exception has been historians of policing, who have included fire brigades among a variety of new institutions that regulated European towns, generally in the context of state-building. Very fine recent work on the police has shown how new forms of policing were a response to new ideologies of social improvement and innovative technologies of control, and that they did transform the urban environment. Where it mentions fires, though, its primary interest is in preventive measures rather than the way fires were handled once they broke out.<sup>3</sup>

Historians of Paris generally see firefighting, before the creation of the *sapeurs-pompiers*, as totally inadequate. Very few have a good word to say for the monks who regularly turned out to fight bad fires, although admittedly we know very little about them.<sup>4</sup> Jean Tulard expresses the generally-held view when he states that before Napoleon, “preventive measures were derisory ... no system of rapid notification, fire stations poorly distributed [across the city], an inadequate number of firemen.” The eighteenth-century firefighters were “incidental firemen” (“des pompiers d’occasion”), “courageous but inexperienced.”<sup>5</sup> Many were married, which Tulard says was bad for discipline; and he adds that a large number were shoemakers, rather than the building workers who would have made better firemen. But this changed after a bad fire at a ball staged by the Austrian Ambassador, in July 1810, which led Napoleon to create the *sapeurs-pompiers*, a well-trained military force based in barracks around the city. They had a uniform and carried a gun and a sabre. “The new organization,” says Tulard, “proved to be excellent.”<sup>6</sup> His observations on the pre-Napoleonic fire service are mostly taken from the early twentieth-century historian Léon de Lanzac de Laborie, who was quoting a report of 1810 that was prepared in support of Napoleon’s reorganization of the fire service, hardly an unbiased source.<sup>7</sup> In fact, most of those who condemn the eighteenth-century Paris fire service are apologists for the Napoleonic model.<sup>8</sup>

Specialists on eighteenth-century Paris are more sympathetic to the firemen of their period, although they generally maintain the overall narrative and simply move the turning-point forward. Jacques Michel believes that no effective organization existed before the major reform of the fire service by Lieutenant-General of Police de Sartine, in the 1760s and 1770s, whereas Jean Chagniot suggests that even then it was unwise to rely on the firemen (“il ne faut pas trop compter sur les pompiers”), pointing out that throughout the century the authorities were obliged, for large fires, to bring in the army. Alan Williams disagrees, writing that “the police appear to have made considerable progress in limiting the destruction and death caused each year by fire,” but this observation is based on legislation and on sources written to justify the police or to seek more funding for the fire service.<sup>9</sup> One of the few historians to use the

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<sup>1</sup> Bankoff, Lübken and Sand, *Flammable Cities*; Körner, Bartlome and Flückiger, *Stadtzerstörung und Wiederaufbau*; Ried, Rupp and Pötzl, *Feurio! Es Brennt*; Allemeyer, *Fewersnoth und Flammenschwert*. For France, Caron, *Les Feux de la discorde*; Roberts, “Agencies Human and Divine.”

<sup>2</sup> Bouzek, *Wien und seine Feuerwehr*; Calabi, *Venezia in Fumo*; Wright, *Insurance Fire Brigades*.

<sup>3</sup> Denys, *Police et sécurité*; Milliot, *Un policier des Lumières*. Williams, *Police of Paris*, 246-58, does discuss the expansion of the fire service.

<sup>4</sup> The one study is by a Franciscan priest: d’Alençon, *Les premiers pompiers de Paris*.

<sup>5</sup> Tulard, *Nouvelle histoire*, 238.

<sup>6</sup> *ibid.*, 242.

<sup>7</sup> *ibid.*, 238-42. Lanzac de Laborie, *Paris sous Napoléon*, 3: 282-85.

<sup>8</sup> Arnaud, *Pompiers de Paris*; Des Cilleuls, *La Garde républicaine*; Meyer, *Die Feuer-Lösch-Anstalten in Paris und Mailand*.

<sup>9</sup> Michel, *Du Paris de Louis XV à la marine de Louis XVI*, 118-20; Chagniot, *Nouvelle histoire de Paris*, 360; Williams, *Police of Paris*, 246.

archives of the local police officials, Justine Berlière, notes that although her sample of fires was small, even before de Sartine's reforms the flames seem to have been quickly brought under control.<sup>10</sup>

Late eighteenth-century observers themselves offer conflicting testimony. Rétif de la Bretonne recounts witnessing a fire in the rue Saint-Antoine. The firemen were slow to arrive, and "I saw them act mechanically, without sensitivity, destroy things without justification, provide inadequate assistance; show little concern for public welfare or the interests of individuals. I saw them treat harshly people who would readily have helped."<sup>11</sup> Others, however, are far more complimentary. The abbé Bertholon, in a work on firefighting published in 1787, claimed to have seen the Paris firemen "manoeuvre with astonishing precision, order, and rapidity," while a report to the Corps législatif in 1799 by the deputy Thomas Riboud heaped unstinting praise on the Paris fire service: "one could say that fires are extinguished almost at will."<sup>12</sup> This was nevertheless at odds with an earlier report to the Convention that, while praising the courage of the firemen, like Rétif accused them of unnecessarily destroying property and claimed that this prevented people from calling them when fires broke out.<sup>13</sup> Louis-Sébastien Mercier, often a critic of the city's institutions, in this case asserted that "assistance in case of fire is prompt and in general well organized," although like Rétif he condemns the brutality of the soldiers of the watch in pressing the passers-by into service.<sup>14</sup>

Paris experienced relatively few major fires in the early modern period, and largely for this reason was relatively late, among the major European cities, in introducing a dedicated firefighting service. The first fire pump was introduced in 1699, but only in 1716 was the first permanent firefighting force established, consisting of thirty-two salaried firemen. In 1722, four years after a terrible fire that destroyed the houses on the Petit-Pont and several on the Île de la Cité, their number was increased to sixty.<sup>15</sup> Across the century it continued to grow in stages, reaching 221 by 1789, by which time there were fifty pumps. The firemen's salary also rose, reaching 200 *livres* per year by 1770, roughly the same as an unskilled laborer, but of course it was a part-time job and they all had other trades.<sup>16</sup> Shoemakers and other leather-workers were particularly numerous among them, throughout the century, because fire hoses were made of leather and required constant maintenance.<sup>17</sup>

The effectiveness of the fire service cannot be established statistically, since figures are both scarce and unreliable. We know that in 1723 the firemen responded to 107 fires and in 1724 to 98. The vast majority (100 and 93 respectively) were chimney fires, dangerous only if the heat set alight adjoining woodwork or if the chimney itself collapsed. But there is circumstantial evidence that not everyone sent for the firemen, both because people continued the older practice of fighting fires themselves and because it was rumored that the fire service made the fire victims pay heavily. By the early nineteenth century reporting was more

<sup>10</sup> Berlière, *Policer Paris*, 144.

<sup>11</sup> "J'ai vu agir machinalement, insensiblement, détruire sans raison, secourir gauchement; s'embarasser fort peu du salut public et du salut particulière. J'ai vu traiter durement des Gens qui auraient volontiers secouru." Rétif de la Bretonne, *Les nuits de Paris* 2:842, 76<sup>e</sup> nuit.

<sup>12</sup> "manœuvrer avec précision, un ordre et une rapidité étonnante": Bertholon, *Mémoire*, 37. "On peut dire que le feu [y] est presque arrêtée à volonté": *Corps Législatif. Commission du Conseil des Cinq-Cents. Vues et projet de résolution*, 30.

<sup>13</sup> Bodin, *Rapport et projet de décret*, 4.

<sup>14</sup> "Les secours, pour les incendies, sont prompts, et le plus souvent bien dirigés": Mercier, *Tableau de Paris*, 9:219-21.

<sup>15</sup> Archives de la Préfecture de Police [hereafter APP] AD 26 Collection Lamoignon, fol. 15, Ordonnance du Roy du 23 février 1716. Archives nationales [hereafter AN] AD I 25, Lettres patentes du 17 avril 1722. Barbier, *Chronique de la Régence*, 1:6.

<sup>16</sup> Williams, *Police of Paris*, 251-53.

<sup>17</sup> Bibliothèque nationale, Collection Joly de Fleury [henceforth JF] 1325, fols. 107, 127, give the occupations of the firemen in 1717 and 1722, and Ménétra, *Journal*, 151 also says many of them were leather-workers.

consistent, and in its first decade the fire service responded to 5,185 fires, of which 4,387 (85%) were chimney fires.<sup>18</sup> These figures tell us only that the firemen had far more to do and that the increase since the 1720s was greater than the growth of the city, whose population had increased from around 450,000 to some 714,000 in 1817.<sup>19</sup> They do not reveal how long it took to put fires out, or how much damage and how many deaths resulted.

We need, therefore, to rely on the more qualitative evidence of reports—by the police, by eyewitnesses, and in the press—on what happened at individual fires. These sources point to a steady improvement in the capacity of the fire fighters to deal with ordinary house fires. Only in the first two decades of the century is there evidence of multiple houses burning to the ground. A bad fire in the rue Saint-Antoine in 1705 destroyed the firework-maker's house where it began and spread to a nearby church and several houses. In 1706, another blaze near the central market destroyed a number of houses and damaged several more, and the only way the authorities were able to contain it was by knocking down the adjoining buildings to create a firebreak. The same tactic used again in 1718, when twenty or so houses on the Petit-Pont burned, despite the best efforts of the new fire pumps, and a further fourteen were partly or entirely demolished. The diarist Barbier claimed that on this occasion the force of the water from the pumps did more to spread the fire than to douse it.<sup>20</sup> But in later fires there is no evidence of houses being deliberately demolished ahead of the flames, although it was not unusual to knock down wooden outbuildings in courtyards. In 1723 the firemen were able to prevent a more modest fire in the Faubourg Saint-Antoine from spreading to the adjoining houses, although the one in which it started was totally destroyed.<sup>21</sup> By the mid-1730s, however, we have examples where the firemen succeeded in saving the upper floors of a house even when the lower ones had burned. A witness to a 1735 fire confirmed that “the fire pump having had a marvelous effect, they managed to control the fire.”<sup>22</sup> Again in 1741, when a bad fire broke out in the ground-floor shop of a house in the rue Saint-Martin, the firemen found the floor above fully alight and the floorboards of the next level had begun to catch. They nevertheless managed to save the upper stories of the building, although it took eight hours before the fire was fully extinguished.<sup>23</sup>

By the second half of the century, most house fires were being dealt with fairly quickly. Even an unusually large fire like the one in the rue Mazarine in 1780, which swept through a series of adjoining wooden workshops belonging to a blacksmith, a carriage-maker, and a joiner, was prevented from spreading further and was eventually put out, despite the presence of large stocks of wood and coal and of a strong wind that fanned the flames. The *Journal de Paris* marveled that the firemen “were able to direct their operations and arrest the progress of the fire, even managing to save entire floors. This service was undertaken with all possible intelligence.”<sup>24</sup> It seems clear that the measures taken to improve the training of the firemen had paid off, and that they had got better at positioning and using the pumps. The equipment might have been slightly better, although we do not know exactly what kind of pumps were used at the beginning of the century. Those in service in 1760 had hoses up to thirty-two meters long, and if expertly deployed and adequately supplied with water, were relatively powerful. By 1813, the pump at the Tuileries, probably quite similar to the eighteenth-century ones, was

<sup>18</sup> JF 1325, fols. 187v, 247-56. Régiment des Sapeurs-Pompiers, Paris. “Tableau chronologique.”

<sup>19</sup> Roche, *People of Paris*, 18. *Recherches statistiques*, tableau 7.

<sup>20</sup> Delamare, *Traité de la police*, 4:144. AN G7 433, fol. 577 (21 June 1706). De Courcillon, *Journal de Dangeau*, 17:299 (29 Apr. 1718). Barbier, *Chronique*, 1:3, 6. AN, Minutier central des notaires, XXIX 336, 22 Aug. 1718, gives the distribution of assistance to victims.

<sup>21</sup> AN Y12569, 28 Mar. 1723.

<sup>22</sup> AN Y15935, 14 Nov. 1735, witness 1.

<sup>23</sup> AN Y14661, 13 Aug. 1741.

<sup>24</sup> *Journal de Paris*, Oct. 3, 1780.

supposedly capable of projecting 270 liters per minute.<sup>25</sup> The water supply was therefore critical, and this certainly improved with the introduction in the 1760s of dedicated water-carts for the fire service, distributed around the city.

Even more important, though, was getting to the fire quickly. Once a fire got established, the extra heat it generated threatened to penetrate the plaster walls that provided quite good protection against small fires and it generated upward air drafts that sent sparks and embers out over a large area, especially in windy conditions. Whereas in 1716 the pumps and buckets had to be fetched from one of four depots in different parts of the city, adding to the delay, they were later kept at or close to the firemen's posts. The number of posts grew from eight in the 1720s to sixteen in 1771 and twenty-five by 1789. They were reasonably well distributed across the Right Bank, including the expanding periphery, but the Left Bank was far less well served, and the narrow central streets were harder to navigate than the larger outer ones. After the 1760s, a fireman was on duty at each post, twenty-four hours a day. The number of pumps also grew from the original sixteen to fifty by the start of the Revolution. It is highly probable that the population more often called the fire brigade immediately, rather than trying to put out fires on their own first. This meant the fire pumps got there earlier and were thus more effective.<sup>26</sup>

But burning houses were one thing; huge fires in major buildings were quite another. The worst fire of the century was at the Hôtel-Dieu (the central hospital) in late December 1772. It started in the basement, where tallow was being rendered from animal bones, and spread to storerooms before suddenly bursting through the floor into the infirmary above at about 2:00 a.m. The firemen were called when someone outside the hospital saw the flames, but they had to break down the iron-reinforced main doors: the matron had the key but no-one knew where she was. The fire burned all the next day and into the second night, and by then all the buildings on one side of the river were in ruins. It was a week before the flames in the foundations were finally extinguished.<sup>27</sup> A fire of this size was simply beyond the capacity of the pumps. But what the firemen did achieve was to prevent it from spreading to the surrounding buildings. They had already managed to do this in 1762 when the Saint-Germain fair burned, and would again in 1781 when the Opera was destroyed.<sup>28</sup> They may have achieved more in 1776, when another big fire badly damaged the Palais de Justice: the accounts suggest that the pumps managed to drive the fire back and eventually put it out.<sup>29</sup>

Despite their growing efficiency and improved equipment, though, the firemen did not do this alone. Right through the eighteenth century, and into the nineteenth, they relied heavily on the population for help. It was almost invariably the neighbors who arrived at the fire first, throwing buckets of water at the flames and sometimes even extinguishing it before the firemen arrived. Passers-by constructed *batardeaux*—makeshift dams of sand and mud that trapped water in the gutters (which in Paris were in the center of the street) and created a pool from which the fire pumps could be replenished (see Figures 1, 2). People living further up the street emptied water into the gutter so that it flowed into the dams, while others formed bucket-chains to maintain the water supply to the pumps. It was they too, more often than not, who did the hard work of manning the pump handles.

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<sup>25</sup> Cherrière, *La Lutte contre l'incendie*, 162. *Manuel de secours*, 20.

<sup>26</sup> Williams, *Police of Paris*, 151-7.

<sup>27</sup> Hardy, *Mes loisirs*, 2: 704-5. *Relation de l'incendie de l'Hôtel-Dieu de Paris, arrivé la nuit du 29 au 30 Décembre 1772*, [Paris], Imprimerie de la Gazette de France [1772].

<sup>28</sup> AN Y11417, 8 Jun. 1781.

<sup>29</sup> *Almanach boiteux*, quoted in Favier, "L'Almanach du Messager Boiteux," 66-67.



**Figure 1** Jacques Chéreau, “Fire at the Saint-Germain fair” (1762). © Gallica.bnf.fr. The bucket chain and fire pumps are clearly visible. A water cart is approaching on the left and a monk is present on the right.

In more serious conflagrations, it was building workers who ripped up floorboards and knocked holes in walls so that the firemen could get at the fire. They were, in fact, required to attend, and the police continued to fine those who did not come when summoned. But alongside the firemen themselves, at big fires the bravest combatants were often monks, mainly from the mendicant orders. They were singled out for praise in fighting the 1718 fire on the Petit-Pont, when according to the *Nouveau Mercure* they were there as soon as the alarm was raised: “They all performed heroically; and they were doubly useful, in that the shopkeepers confided to them the most precious goods with confidence.”<sup>30</sup> They were present at all the major blazes. Two monks died fighting the fire at the central hospital in 1772, and they were again commended by the press for their work at the Opera in 1781.<sup>31</sup> Firefighting was a collective enterprise, in which everyone in the urban community had a part to play.

<sup>30</sup> “Ils y ont tous fait des actions héroïques ; Ils ont esté d’autant plus utiles que les marchands leur remettent leurs plus précieux effets avec confiance,” quoted in d’Alençon, *Les premiers pompiers*, 12-13.

<sup>31</sup> D’Alençon, *Les premiers pompiers*, 23. Farge, “L’incendie de l’Opéra,” 14.



**Figure 2** Anon., “Fire at the Paris Opera (Palais-Royal), April 6, 1763” (1763). © Gallica.bnf.fr. A *batardeau* is visible next to the prancing horse in the center foreground.

At all the fires, too, the city watch played a vital role. It was often they who summoned the fire brigade, and they became ever better at crowd control. One of the biggest problems, at a serious fire, was the spectators who crowded around, getting in the way and sometimes stealing property saved from the flames, so the contribution of the watch in cordoning off the fire scene was important. They also, as Mercier reminded us, recruited people to man the pumps if there were not enough volunteers. In serious cases, they were helped by soldiers of the two regiments stationed in Paris, the Swiss and French Guards, who often helped to evacuate furniture from burning buildings and sometimes to fight the fire.

Nevertheless, the relationship between the salaried firemen and all of these other groups seems to have changed over the century. Firstly, there was improved communication and cooperation between them all. Complaints from the fire chiefs about the failure of the watch or of the building workers to obey their instructions disappear by the middle of the century. Big fires were attended by the leaders of all the key city authorities, and conflicts of jurisdiction do not seem to have been a big issue. Hence, in 1762 when the stalls at the Saint-Germain fairground caught fire at three in the morning, the police *commissaire* was alerted by the night watch (which had already summoned the firemen) and he immediately sent for the monks from the various mendicant convents, for the soldiers of the French Guards, and for the building workers of the surrounding neighborhoods. He then dispatched guardsmen to wake the neighbors so that the firefighters could get access to the wells in the courtyards of the houses. While the building workers and the monks set to work demolishing the wooden stalls and taking off the roof of the main building in order to prevent the fire from spreading, the soldiers closed off the surrounding streets to spectators. Even though the report was intended to reassure the police chief that his

subordinates were doing their job properly, any major dysfunction could not easily have been concealed, and one has the impression of a well-oiled machine.<sup>32</sup>

Yet, increasingly as the century passed, the firemen were becoming the professionals, the others more and more often auxiliaries. The fire service accumulated knowledge of how fires behaved, and hence of the best way to attack them and prevent them spreading, and of how to ensure they would not reignite from hot coals after the visible flames had all been quenched. They developed strategies for getting people out of burning buildings, in part thanks to new types of ladders.<sup>33</sup> There are hints, too, that they were increasingly attentive to the risks in the vicinity: to the presence of stocks of oil or other flammable goods. Their growing expertise gave them a new role in fire prevention. By 1785, when a new set of rules were introduced for the running of the rebuilt Saint-Germain fair, a fireman was to accompany the management on their rounds at the end of each market day to check that everything was safe.<sup>34</sup>

Yet this comforting story of collaboration and improvement was not the whole one. Even as the firemen became more proficient, other major changes were taking place, in the second half of the eighteenth century and into the nineteenth, that made their job far more difficult. One was simply the growth of the city. Paris expanded physically, particularly in the decades before the Revolution, with entire new suburbs developing around the periphery. The expansion stopped during the 1790s, but began again as population flowed back into the city after the Revolution.<sup>35</sup> There was thus a progressively larger area for the fire service to cover.

There were also some changes in the form of the buildings, although methods of construction and house styles changed little. There was more building in stone in the salubrious new areas to the west, whereas elsewhere the traditional wood-framed houses with plaster-and-rubble walls remained the norm. In most of the city the old houses remained, with only piecemeal replacement of older structures, but the new buildings were often taller and in the later years of the eighteenth century there is evidence of additional floors being added to existing buildings.<sup>36</sup> This complicated the firemen's task. The old practice of building wooden outbuildings in the ubiquitous courtyards—storehouses, artisans' workshops, stables—continued, and these could be a major fire hazard, particularly when they contained hay, wood, or other flammable products.

But far greater danger was created by new types of manufacturing and by new products, often present in far larger quantities. Tobacco had been processed in Paris since 1670 and became a state monopoly in 1674, and after the 1750s, stocks for both the local and the national market were stored in a large building in the Faubourg Saint-Germain—it caught fire in 1776.<sup>37</sup> Sugar refineries, notoriously dangerous for fire, appeared and multiplied: the first at Bercy in 1757, eight or so more by 1813, some twenty-five by 1820.<sup>38</sup> Metal plating industries were taking off, and so were chemical industries, in small laboratories in the 1770s, later in larger establishments. The first ammonia factory opened in 1767, production of sulfuric acid began at Javel in 1779, and nitric acid was made near the Porte Saint-Denis. Gelatin, glue, oil, tallow and ink were produced from animal bones and offal, following long boiling. A range of lacquers, highly flammable and dangerous both to produce and to store, began to be used for

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<sup>32</sup> Cherrière, *La Lutte contre l'incendie*, 254-58.

<sup>33</sup> *Manuel de secours*, 21-23. Extension ladders became available in the mid-eighteenth century: Périer and Texier, *Pompiers*, 86. Bertholon, *Mémoire*, 47.

<sup>34</sup> AN Y9488A, 21 Jan. 1785. My thanks to Nicolas Lyon-Caen for this document.

<sup>35</sup> Roche, *People of Paris*, 16-18; Sutcliffe, *Paris*, 67-82.

<sup>36</sup> Roche, *People of Paris*, 111-12; Carbonnier, *Maisons parisiennes*, 155-64.

<sup>37</sup> Smith, "L'industrie du tabac," 237, 240. Hardy, *Mes loisirs*, 4:436.

<sup>38</sup> Le Roux, *Le Laboratoire des pollutions industrielles*, 300; Guillerme, *La Naissance de l'industrie à Paris*, 100, 2n.

furniture and for all sorts of water-proofing.<sup>39</sup> At the same time, other long-standing industries were changing. Breweries were high-risk establishments, because of their use of fire in making beer and their stores of large quantities of grain and hops. As beer consumption in Paris rose across the eighteenth century, the size of breweries increased, so that if a fire did occur it was likely to be difficult to control. Tanneries too, long established in Paris, were now much larger and by the early years of the nineteenth century were using new chemical processes. So were dyers.<sup>40</sup>

These changes accelerated greatly during the Revolution and Empire, when—as Thomas Le Roux has shown—regulation decreased and dangerous industries formerly exiled to the periphery were permitted to operate in the center of the city. The nationalization of church property made available large buildings and sites that were well suited to these purposes. After the outbreak of war in 1792, forges and saltpeter works multiplied. Two fires broke out in a metal-smelting manufactory that employed 900 workers in a former convent near the Pont-au-Change, while in 1794 there was a serious blaze at the saltpeter works in the former Abbey of Saint-Germain-des-Prés. Lax regulation continued under the Empire, when the first steam engines added the dangers of explosion to those of storing large quantities of coal. One was in use in the Faubourg Saint-Germain by 1811, for shredding tobacco. In the early nineteenth century, the cotton industry too began to develop, bringing with it a new fire risk, since cotton is highly flammable. After 1818, gas lighting and gasworks would make firemen's lives even more complicated.<sup>41</sup> Not only were the raw materials of these industries more dangerous, but they operated on a larger scale and in new kinds of spaces, industrial ones.

Another kind of new space, equally dangerous, also proliferated after the middle of the 18<sup>th</sup> century: theatres. The big fire of 1762 at the Saint-Germain fair was said to have begun in a theatre. The following year the Opera burned down, and by 1789 there had been five more major theatre fires. Another three took place during the Revolution and a further nine between 1800 and 1840.<sup>42</sup> Theatres were dark, enclosed places that not only depended on candlelight and later oil lamps for visibility, but also used fireworks and colored flame for stage effects. Initially they were almost always built of wood, and they contained drapery and stage furniture that easily caught fire. They held large numbers of people in close proximity and were difficult to evacuate, although fortunately most of the Paris theatres that burned during this period were empty at the time. The risk was quickly recognized: by the 1770s the Paris police mandated water tanks and fire pumps in many theatres and required the presence of firemen during performances.<sup>43</sup>

There was thus a change in the nature of the fires that were taking place. Industrial fires meant that older methods were not necessarily appropriate. Water was not always effective against burning chemicals or gas and might even be counter-productive. Fires behaved differently in larger spaces like theatres and factories. Firemen needed more sophisticated equipment, greater technical knowledge, and better co-ordination if deaths and damage were to be avoided. After 1777 they began employing engineers to advise them, to draw up plans of

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<sup>39</sup> Belhoste, *Paris savant*, 69-70. Le Roux, *Laboratoire*, 112-13, 39, 40-3; Guillerme, *La Naissance de l'industrie*, 83-90, 93-96, 137-56.

<sup>40</sup> Garrioch, *Formation*, 131; Zwierlein, *Der gezähmte Prometheus*, 115-7; Bergeron, *Banquiers, négociants et manufacturiers parisiens*, 820-1.

<sup>41</sup> Le Roux, *Laboratoire*, 163-325, 403. Belhoste, Lohr, Smith, "Paris, ville d'usines," 340-44. Grimaudi, *Paris, ville ouvrière*, 156-60. AN F3 (II) Seine 52, dossier 1. Pinkney, "Paris, capitale du coton," 56-60.

<sup>42</sup> Fölsch, *Theaterbrände*, 1:21-9.

<sup>43</sup> Hemmings, "Fires and Fire Precautions." Bertholon, *Mémoire*, 41-2. Michel, *Monsieur de Sartine*, 120.

public buildings, and to develop contingency plans like the one devised, around 1797, to save the Bibliothèque nationale in case of a fire in the neighboring Théâtre des Arts.<sup>44</sup>

Nevertheless, this did not immediately mean dispensing with the assistance of the population. In reports of major fires right across the first half of the nineteenth century, we find a wide range of people helping fight them. In 1820, when a wine and liquor depot at Bercy caught alight, workers from the neighboring Faubourg Saint-Antoine were first on the scene. They were able to save one of the buildings even before the firemen arrived. Soldiers sent to assist were less helpful, as quite a few of them proceeded to raid the contents and get drunk: the much-vaunted military discipline was not effective on this occasion. Fifteen years later, at a major fire in a complex of wooden buildings just off the rue Mouffetard, the firemen were assisted by “a multitude of inhabitants of the quarter” who emptied buckets of water onto the flames. Although there were no longer any monks to help, since the Revolution had disbanded the monasteries, theology students from the seminary at Saint-Sulpice were singled out for their zeal. This time the army was of more help, and ninety-nine water-carriers were later reimbursed for bringing water. A hundred building workers were also recruited at the Place de Grève to help the soldiers remove charred and unburned paper so that sparks could not set it alight once more.<sup>45</sup>

In emergencies like these, the firemen therefore worked very much as before. They continued to depend heavily on public assistance to alert them to fires that broke out, to provide local knowledge of the premises and their contents, as well as to assist with fighting the flames. Only gradually, as time went on, did the fire service deliberately exclude non-professionals. The report on the fire at the Théâtre du Vaudeville in 1838, for example, notes that “the Bourgeois were kept at a distance,” and “only a few intrepid individuals” were allowed to work with the firemen and the soldiers.<sup>46</sup>

The transformation of the Paris fire service into a branch of the army therefore did not mark a sharp change in the quality or nature of its operations. It is true that militarization happened in stages and was not complete until 1830, but when one looks at the firemen’s capacity to fight fires and at the methods they used, it seems that the Napoleonic reforms had little immediate impact. In the longer-term history of firefighting in the city, across the eighteenth century and into the nineteenth, the big changes were incremental. The late eighteenth-century Paris fire service was already quite efficient, especially where small fires were concerned, although it still relied heavily on help from the population. In the case of large fires, its efforts were limited by the capacity of the pumps, since nowhere in Europe were firefighters able to extinguish big blazes, as was shown by the terrible fires in Ratcliff in London in 1794 or the one in Hamburg in 1842. Still, there were significant improvements in technology across the eighteenth century and into the nineteenth, particularly in the capacity and durability of pumps and hoses, better ladders, and more protective clothing. And as in many other domains, what Colin Jones has called a growing “corporate professionalism” is already evident in the fire service in the second half of the eighteenth century.<sup>47</sup> Changes in organization were certainly important, particularly the creation of permanently manned and equipped fire-stations in the late 1760s, but the imposition of a military structure, if it had any effect at all, seems to have been of minor importance.

This conclusion is reinforced by the fact that fire services in other cities had very different forms of organization but seem to have been similarly successful in dealing with small

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<sup>44</sup> Arnaud, *Pompiers de Paris*, 62. AN AD I 87, dossier F, no. 7, Arrêté contenant organisation du corps des Gardes-pompiers de Paris, *Bulletin des lois*, no. 89, du 17 Messidor an IX [1802]. “Croquis d’instruction,” reproduced in Prieur, Noto, Julien et al., *Sapeurs-pompiers de Paris*, 16-17.

<sup>45</sup> APP DA 272, 2 Aug. 1820 and 12 Dec. 1835.

<sup>46</sup> APP DA 273, 17 Jul. 1838.

<sup>47</sup> Jones, “Bourgeois Revolution Revivified,” 96-101. Alder, *Engineering the Revolution*.

fires and struggled in the same way with really big ones. In London, firefighting was largely undertaken by teams employed by the insurance companies, although there were also parish fire pumps. Across much of Germany, it was handled by volunteer brigades; in Venice, by artisans seconded from the Arsenal. The choice of model seems to have depended partly on the origins of the fire service in each place, and partly on the local public culture, on the way solutions were conventionally found for problems of government and public welfare. In the case of Paris, centralized, state-run models had long been dominant.

Yet the nature of the task was also changing. In Paris, as in many other cities, the character of big fires changed dramatically in the later part of the eighteenth century and into the nineteenth. Fire services were now rarely confronted with fires that might sweep through residential neighborhoods, but far more often with blazes in theatres and in industrial complexes. In Paris, the Revolution and Empire accelerated these changes by making far more large sites available for industrial use and after 1792 by accelerating investment in military production that brought with it a high fire risk. Changes in firefighting were as much a response to new conditions as a matter of finding better ways of grappling with an old problem.

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