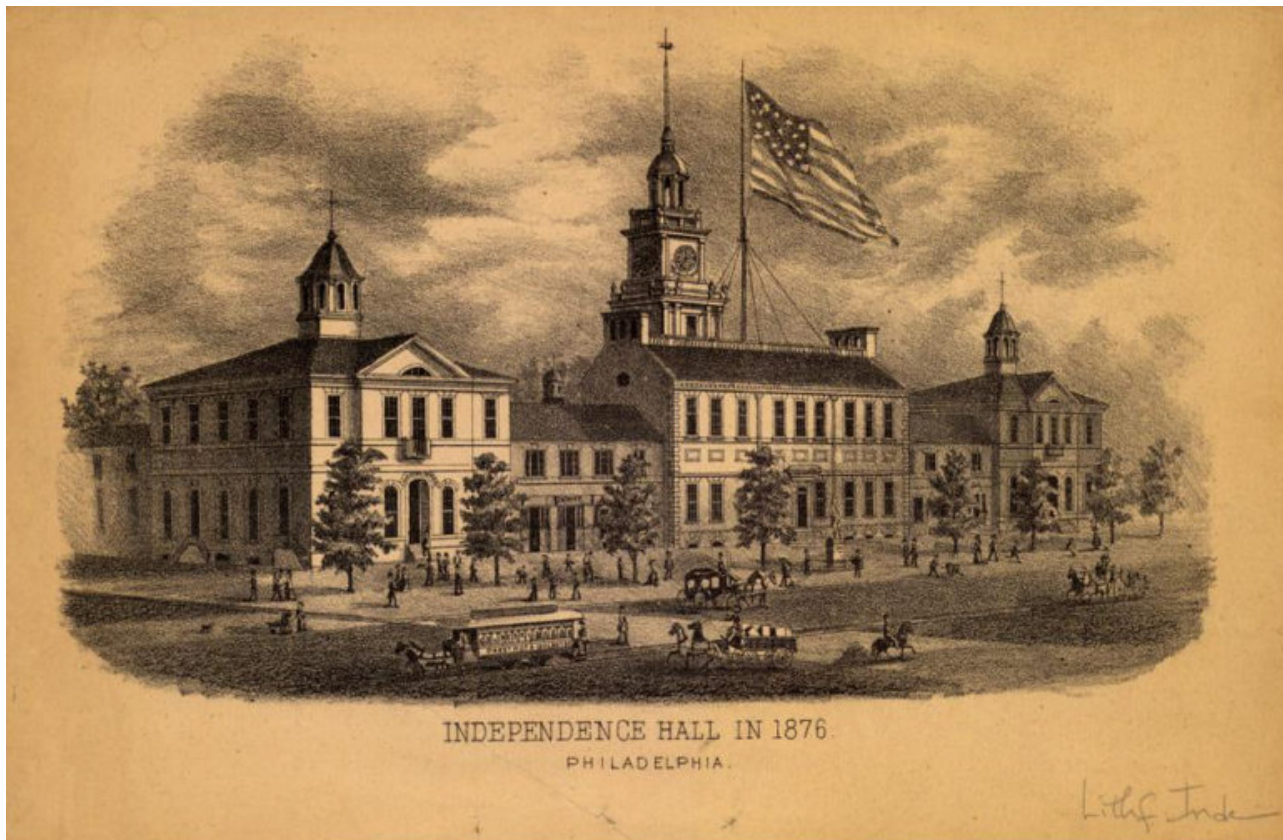


The Sound and Look of Time: Bells and Clocks in Philadelphia



The nineteenth century resonated with time's sounds: Hour's bells rang throughout American cities and towns, alarms punctuated bedrooms and bunkhouses, gongs and horns dictated action in fields and factories. Catholic church bells rang the Angelus to call devotees to prayer morning, noon, and night. After the 1870s, wealthy congregations installed big bells to ring the hours and Westminster chimes, to mark each quarter hour with a melody. Clockworks controlled the Angelus bell and Westminster chimes, as well as many other secular bells, so that they rang at appointed hours. "A listener hearing both the striking of the hours and the more solemn pauses marking services or ceremonies," as the French cultural historian Alain Corbin observes, "has to cast his response in terms of a double temporal system." This double temporal system encompassed time as a matter of occasion and time as a matter of measure. In each instance, the sound of time fostered time discipline.

It was just such a rich and complex temporality that emerged in colonial cities during the middle decades of the eighteenth century and persisted into the nineteenth century. However, with each passing decade, time as a matter of measure gained the better part of attention. In the biggest cities by the end of the century, the aural world of public time telling began to fade despite the installation of ever larger bells. It was drowned out by screeching

machinery and crowd noise, or dissipated by wide streets, tall buildings, cavernous alleys. The sound of time never completely disappeared, but the contours of time discipline shifted toward modern practices that depended on a seeing public, on visible timekeepers that were at once accurate and precise, and on what E. P. Thompson described as "the inward notation of time." Philadelphia is an ideal American place in which to explore the sound and look of time over the course of the nineteenth century.

No other place in colonial America was as well primed for the layering of traditional and modern timekeeping practices as was Philadelphia, where scientists, seafarers, and socialites shared the streets and public venues with merchants, millers, and farmers as often as with printers, churchmen, and silversmiths. Shortly after the impressive steeple of the Pennsylvania State House (now known as Independence Hall) was completed, a bell from England's Whitechapel foundry arrived in 1752. Almost immediately the one-ton bell cracked. Recast by local brass founders, it was hung the next year with, according to one period account, "Victuals & drink 4 days." Soon complaints were made about the bell's tone. Recast again, the bell was still found insufficiently resonant. This bell, which would become known as the Liberty Bell owing to the inscription "Proclaim Liberty throughout all the land unto the inhabitants thereof," was left in the steeple, and another bell meant to ring the hours was ordered from England. When the second bell arrived, it was installed in the state house tower. It was attached to a clock movement (made by local clockmaker Thomas Stretch) situated in the middle of the building. Rods connected two clock dials under the gables of the east and west exterior walls of the state house to the clock movement. An ornamental case of stone, in the fashion of tall-case clock cases, protected the dial on the west wall's exterior. The state house clock movement, clock dials, and bells worked together to enrich and complicate Philadelphia's temporal rhythms. The new bell rang the hours; the gabled clocks showed the hours and minutes; and the old bell, the Liberty Bell, sounded fire alarms and marked mournful and joyous occasions.



Fig. 1. "The Liberty Bell," frontispiece from The National Anti-slavery Bazaar (Boston, 1848). Courtesy of the American Antiquarian Society, Worcester, Massachusetts.

Shortly after the installation of the Pennsylvania State House bells and clock, members of the fledgling American Philosophical Society built an astronomical observatory on the house grounds. The half dozen men who constituted America's first learned society observed the 1769 transits of Venus and of Mercury, which resulted in the determination of Philadelphia's longitude. They used a telescope mounted on a horizontal axis to follow the course of each planet as it passed between the sun and the earth. Afterward the Philosophical Society dismantled its makeshift observatory and moved its transit instrument (which was portable, previously having been used to chart the Mason-Dixon line) to the south windowsill of the state house tower where it was used to chart the movement of stars across the skies in order to determine the time. The state house's clockworks sent this time, known as Philadelphia time, to the dials on the state house's tall-case clocks and to its bell and then beyond.

Not everyone in colonial Philadelphia was pleased about having the hours rung on the state house bell. In September 1772, Philadelphians living near the state house petitioned the Pennsylvania General Assembly for relief from "the too frequent Ringing of the great Bell in the Steeple of the State-House." They complained that the bell ringing "much incommoded and distressed" them, particularly when family members were sick, "at which Times, from [the bell's] uncommon Size and unusual Sound, [the ringing] is extremely dangerous and may prove fatal." What is more, the petitioners asserted, the bell was not supposed to ring except on public occasions, such as when the assembly or courts met. The assembly tabled the petition. Shortly thereafter the steeple had grown too rickety to bear the weight of the bells, and no mention is made in historical sources of their ringing between 1773 and 1781.

Complaints about the distress the bell caused, not as unusual as might be thought, were ultimately less important than Philadelphians' disavowal of the

utility of ringing the hours. The petitioners claimed that announcing the hours served no public purpose except during the brief periods of legislative and judicial sessions. This might lead one to suspect that residents of Philadelphia did not have a use for the hours, except with regard to coordinating the meetings of governing officials. Such a conclusion would be misguided. Rather, Philadelphians, like other colonials living in British North America, consulted a variety of timekeepers and followed several different temporal systems, including clock time. If they wished to know the hour, they listened for bells or they looked to their clocks, watches, sundials, or the sun itself. But the arrival of ships, wagons, storms, full moons, nightfall, harvests, and Christian holy days held more sway over their rhythms and routines than did that of noon or midnight.

In this, Philadelphians were not unique. Archaeological and probate data from British North America show an increase in the ownership of clocks and watches over the course of the eighteenth century. Through the end of the eighteenth century, ownership of a pocket watch was more likely than that of a clock. Jewelers and watchmakers in colonial cities imported watch movements and parts for assembly, often engraving their own signatures and place names onto the European movements. Watches were less expensive and sometimes better timekeepers than clocks. And as status items, they were easier to flaunt than a tall-case clock. Benjamin Franklin's triumphant return from Philadelphia to his brother's Boston printing shop in 1724 included his flourishing a watch.

In eighteenth-century Philadelphia, as in other cities of that period, pocket watches were extraordinarily special devices above and beyond their expense and technical features. In tandem with the dials of public clocks like the gabled state house clock, they facilitated, encouraged, and privileged the visual apprehension of mechanical time.

Despite the slow encroachments of visual markers of mechanical time, overlapping domains of time remained audible in cities and countryside. Immediately following the first public reading of the Declaration of Independence, from a stage set on the erstwhile site of the Pennsylvania State House observatory, all of Philadelphia's bells tolled. It is unlikely, however, that the two state house bells added to the din, because they had been taken down from the unsound steeple. Nevertheless, a lasting myth was concocted that the Old State House bell rang on the occasion. Had it rung, the Liberty Bell would have participated in the announcement of the nation's birth, a moment John Adams described with the oft-quoted phrase "Thirteen clocks were made to strike together."



Fig. 2. "Back of the State House, Philadelphia, 1800," William Birch & Son (Philadelphia, 1800). Courtesy of the Prints and Photographs Division, Library of Congress, Washington, D.C.

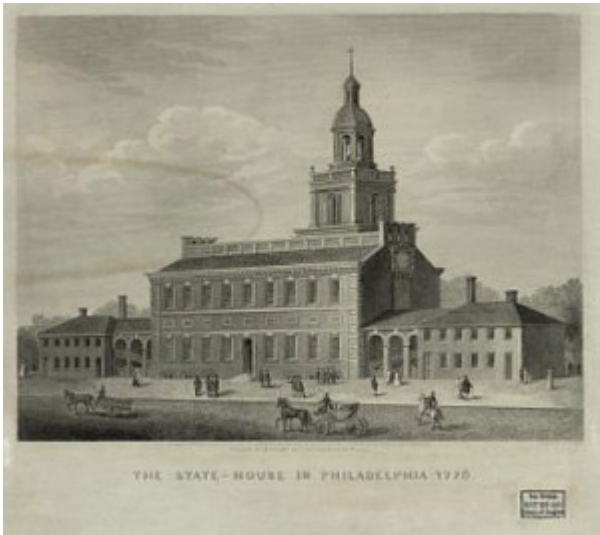


Fig. 3. "The State-house in Philadelphia 1776," John Serz (1873). Courtesy of the Prints and Photographs Division, Library of Congress, Washington, D.C.

Adams's metaphor underscores certain key points about timekeeping during the Revolutionary and early national eras. First, Adams asks the reader to imagine thirteen clocks audibly demonstrating their coordination by striking together. His was a world in which authoritative time was aurally announced, not read on a clock face. Second, Adam's metaphor was part of a longer sentence, which read in full: "Thirteen clocks were made to strike together a perfection of mechanism which no artist had before effected." It was unimaginable in his day that a mechanism could be perfected such that multiple clocks could operate so well, so precisely, as to keep the same time. The conditions for synchronized time discipline dependent on clocks had yet to arrive, even in 1818 when Adams penned this famous phrase in a letter full of reminiscences. Indeed, they seemed as miraculous as a revolution meant to overthrow a king.

Because of the threat of the arrival of British troops in the early fall of 1777, all of Philadelphia's bells, including the Liberty Bell, were hidden in

nearby Allentown. As in medieval England and nineteenth-century France, bells in colonial British North America bolstered claims to legitimacy and authority, so their capture alone would have symbolically restored monarchical claims. But what is more, if confiscated they would have been melted down for shot. A year later, with the possibility of British invasion receding, the Liberty Bell and hour's bell were brought back to Philadelphia. The Liberty Bell was kept in storage for seven more years because the steeple had gone from rickety to rotten and there was nowhere else for it to hang. The clock bell was hung in a shed jerry-rigged on the roof in front of the tower, where it rang the hours.

The importance of the Pennsylvania State House, its exterior clocks, and the Liberty Bell receded for several decades after the American Revolution, receiving neither public acclaim nor funds. The decayed wooden steeple was taken down in 1781. The one-ton Liberty Bell was reinstalled a few years later behind the louvers of the tower's middle level. It called voters, opened legislative sessions, celebrated patriotic events, and tolled for the dead. After the Pennsylvania General Assembly moved to Lancaster in 1799, the Old State House's clockworks were neglected. Various city papers criticized the clock for its irregularity and Joseph Leacock, its keeper, for his carelessness. Leacock, who was paid by the legislature, defended his reputation in 1800, explaining that he "wound the weight of that Clock full up, expecting it would have gone tolerably regular, but I found it had gained half an hour." The fault he felt was that the clock was "poorly made." In 1804, a cupola with clock faces was added to the bell tower atop Philadelphia's Second Street Market (at Second and Pine). Two other public clocks also ran, though poorly, one on High Street, the other on Delaware Street. Some Philadelphians cared enough about the time the Old State House clock kept to calculate and remark upon its deviations. One journalist who pointed out in 1809 that it ran ten to twenty minutes slow, finger-wagged: "It is very important that this Clock should be kept right—Courts, Schools, Cooks, Coachmen, etc. etc. all regulate themselves by this clock."

When the city of Philadelphia acquired title to the Old State House in 1818, it embraced the responsibility of maintaining its bells and clock. Increased activity of the courts, growing emphasis on timing in business matters, and rising acquisition of watches and clocks contributed to the city's new attention to mechanical timekeeping. The city's Select and Common Councils appointed a committee to examine the state house's timekeepers in 1821 and again in 1828. By the second investigation, it was agreed that "the time of the citizens of Philadelphia was of so much importance to them, that there ought to be some accurate means of marking its passage." The state house clock, it was lamented, was notoriously unreliable. Indeed, the Clock Committee remarked that, "if there is anything proverbial, it is the badness of the clock at the state house." It was called "an *excusing*, not a regulating clock." These complaints were amplified: "It is a clock which affords no rule to go by, but a rule not to go by, for everybody knows it can never go right."

Persuaded by these pleas, and in concert with the restoration of the Old State

House to its 1776 condition, in 1828 the city's Select and Common Councils appropriated \$12,000 (about \$300,000 in today's dollars) to install a new clock and bell on the Old State House. They also approved the purchase of two new clocks for the market houses, and funding to pay for the upkeep of all the city's clocks.



Fig. 4. "Illumination of Independence Hall, Philadelphia, during the International Centennial, July 4, 1876." Courtesy of the Prints and Photographs Division, Library of Congress, Washington, D.C.

The Select and Common Councils recommended the improvements to meet "the necessity of having a uniform time for the city," and to improve "the appearance of our city, which is so deficient in embellishments, which in other cities are considered indispensable." Installing a clock on the steeple rather than in cases gabled on the exterior walls, which was a departure from the original state house's design, was agreed upon. The talented artisan Isaiah Lukens built the clockworks for the tower clock and a 4,000-pound hour's bell was cast. It was hoped that the steeple's turret would be high enough that the bell could "be heard over the city," that the new clock dials affixed to the tower would be "seen in distant parts of town," and that the gaslight illumination of the dials would make the time visible even after dark.

The new clock and bell were set in motion on New Year's Day, 1829. Responses varied. It was Philadelphia's first tower clock, but it lacked the visibility some residents expected. One Philadelphian complained that "two squares distant [from the clock tower] it is mortally impossible to observe anything more than hieroglyphics." A predilection for tower clocks was becoming evident in other American cities and towns; as they gained modest amounts of wealth, they invested in signs of order, prestige, and permanence. They did so speculating

that in being "seen from more than one thousand doors and windows," their tower clocks would establish a time standard for the community. Loud hour's bells also served such aspirations. Time as a matter of occasion was still important, but as a matter of measure it was gaining both visibility and audibility.

When Philadelphia's new tower was completed, the Liberty Bell was rehung. It only rang on national occasions, such as July Fourth (1831), George Washington's birthday (1832), and to mark the deaths of Lafayette (1834), John Marshall (1835), and President William Henry Harrison (1841). Since for most, if not all, of its tenure, the Liberty Bell did not ring the hours, its significance as a temporal symbol is within the realm of historical time. When it tolled in honor of deceased public figures (presidents, jurists, and founding fathers), it announced the end of epochs. When the city ordered its ringing to celebrate Washington's birthday or July Fourth, it heralded the beginning of an epoch, a renewal of the commitments and bonds that had sent the colonies on a path toward nationhood. Erecting a massive clock tower, installing four clock dials meant to be seen across the growing city of Philadelphia, and hanging a large bell meant to ring the hours on a building coming to be known as "Independence Hall" suggest that by the end of the 1820s, Americans envisioned the conquest of time as much a part of national destiny—as literary historian Thomas Allen proposes in *A Republic in Time*—as the proclamation of liberty throughout the land. But without agreed-upon time standards, let alone methods of coordinating the great variety and number of timekeepers, clock time's visual and aural authority would remain tenuous.

Clocks set time standards in Philadelphia and other antebellum cities. An 1830s local ordinance required the city of Philadelphia to provide accurate time. To meet this demand, in 1835 the Committee on Public Clocks recommended that public clocks "be designated by ordinance and so located as to accommodate our Citizens in different Sections of the City." It proposed installing two new clocks to augment the clocks on the Old State House, St. Augustine's Church, and a market house at Second and Pine Streets. In keeping with these recommendations, the city assumed responsibility for the upkeep of the clock and bells in St. Augustine's Church and installed a clock on the Jersey Market. Through the 1830s, the city of Philadelphia maintained four public clocks. Among them, the one on the Old State House remained dominant. Indeed an 1836 guide to etiquette instructed that, "in Philadelphia it is necessary to be punctual to a second, for there everybody breathes by the State-house clock." You must, it warned, be at your appointments "at the instant the first stroke of the great clock sounds." It further admonished that it would be "useless to plead the evidence of your watch" and that "the unpunctual is pardoned by no one." Tongue in cheek or no, punctuality was serious business.

Despite the seeming preference for state house time, the city's clocks tended to indicate several different times. Grappling with the difficult problem of how to synchronize them, the city appointed an "Observatory Committee." The committee suggested moving its observatory (which at this point was simply a collection of instruments) to a central location where the local time of

Philadelphia could be determined and displayed on a visible public clock. Due to its expense, the city fathers did not support the proposal. So the city's clocks showed the time as determined by their keepers, rather than displaying what was coming to be known as "observatory time." Isaiah Lukens earned \$100 a year to regulate the state house clock, which he had built in 1829. Lukens owned a "Fine Regulating Clock, for Astronomical Observations," as well as other instruments for determining and carrying the time, which ensured that he could reliably fulfill his charge. It is not clear where the attendants of the city's other clocks got their time. Sources also do not say how often the clockmakers reset the city clocks.



Fig. 5. "Independence Hall in 1876, Philadelphia." Courtesy of the American Antiquarian Society, Worcester, Massachusetts.

The contests for authority among antebellum timekeepers cannot be underestimated. Consider the account of the tensions between the state house clock and the pocket watch-carrying public found in George Lippard's sensational 1845 novel, *The Quaker City*.

He halted for a few moments in order to ascertain the difference in time, between his gold-repeater and the State House clock, which had just struck one. While thus engaged, intently perusing the face of his watch by the light of the moon, a stout middle-aged gentleman, wrapped up in a thick overcoat, with a carpet bag in his hand, came striding rapidly across the street, and for a moment stood silent and unperceived at his shoulder. "Well Luke—is the repeater right and the State House wrong?" said a hearty cheerful voice.

This passage points to all the elements of midcentury time telling. The aural and visual compete—the clock has "just struck one," but Luke "peruses" rather than listens. The mechanical and the natural come together—it is the "light of the moon" that illuminates the "face of his watch." Which is the authority for the time, the pocket watch or the state house clock, the bell striking one or the moon? The passage provides no clue as to which is more reliable, but it is a foregone conclusion that the timepieces won't agree. Indeed, every timekeeper

seemed to show its own time; there was little possibility of synchronicity, not between aural and visual time indicators, not between natural and mechanical ones, not even between a pocket watch and the state house clock.

Quaker City gave play to the anxiety and confusion nineteenth-century urbanization provoked. No longer could the faces of strangers be reliably read, nor could signs be trusted to mean what they said. Clocks were among the most visible of these enigmatic urban texts. They were found in public spaces among signs, trade cards, handbills, posters, parade banners, newspapers, and currency. But with only a few timekeepers deserving the commendation of "precision," and with accurate time mostly out of reach, responses to these timekeepers in the 1830s and 1840s often included suspicion and mockery. Period fiction expressed reservations about the effects of investment in clockworks and timekeeping. For instance, in *Empire City* (1850), George Lippard described a New York City slumlord "whose secret depravity went by clockwork." The temperance author T. S. Arthur mocks time discipline in "The Punctual Man" (1854).

The most arresting expression of derision about the expanding domain of clock time can be found in an odd story titled "The Devil in the Belfry," penned by Edgar Allan Poe shortly after moving to Philadelphia in 1838. It describes carved woodwork of "cabbages and time-pieces" that could be found throughout "the finest place in the world," a town known as "Vondervotteimittis" (Wonder-What-Time-It-Is). On the steeple above the town council's chambers was a "great clock" with seven "large and white faces" with "hands heavy and black," which were "readily seen from all quarters." The clock "was never yet known to have anything the matter with it"; indeed "the bare supposition of such a thing was considered heretical." All the town's clocks, watches, and bells were precise and accurate. With the satire Poe was known for, he made it clear that a synchronized town may have been the aspiration of many but was actually preposterous enough for a Gothic tale.

The accumulation of timepieces both public and private during the middle decades of the nineteenth century is astonishing. As Philadelphia's inventory of public clocks grew, so did the ones of other cities, and inexpensive household clocks and pocket watches proliferated. The Old State House's importance as a source of visual and aural time for Philadelphia residents solidified at midcentury. In 1845, the clock acquired new hands. In 1852, its wooden dials were replaced with ones of solid ground glass whose diameters extended seven and a half feet. The near constant indication of the time on the state house's enlarged and brightened clock dials attested to its imposing visual presence. Around the same time, the Liberty Bell itself underwent a transformation. As it was being rung in honor of George Washington's birthday in 1846, a fracture deepened into a crack, rendering it impossible for the bell to ring. "Left a mere wreck," as one commentator lamented, it remained hanging until 1852, when it was moved into the same room in which the Declaration of Independence was displayed. Several years later, in 1857, the city introduced an alarm system rigged to ring all the bells and gongs in the city in the event

of a fire or other cataclysmic event. The system was also used to send time signals from the state house clock to the city's bells and fire-alarm signal boxes, which together rang at noon every day. The state house clock was at the center of the network of aural and visual time signals. The sound of time ringing forth every day knit various parts of the city together around state house time.



Fig. 6. "Philadelphia City Hall, 1899." Courtesy of the Prints and Photographs Division, Library of Congress, Washington, D.C.

The Old State House's pivotal position as authority for clock time was reinforced in Philadelphia in 1876, the year of the nation's centennial and first world's fair. That year, Henry Seybert, a native son and reclusive heir to a large fortune, gave the city a Seth Thomas tower clock, a 13,000-pound bell, and four nine-foot dials with gilded hands and figures. His motives for the gift to Philadelphia were largely personal. Seybert recounted that at a séance, his deceased mother commanded him to give a clock and bell for Independence Hall. Following her spirit's wishes, the terms of his gift called for the inscription of his family's personal names on the clock and bell. The practice of inscribing bells as a way to honor cherished members of the community was and not unheard of in America either. Members of the Common Council, attentive to the communal and national importance of the Old State House timekeepers, rather than to Seybert's personal affairs, refused the terms of the gift. Seybert eventually relented, agreeing to an inscription on the bell that read: "Presented to the city of Philadelphia July 4, 1876, for the belfry of Independence Hall, by a citizen."



Fig. 7. "Night View of Philadelphia City Hall" (ca. 1916). Courtesy of the Prints and Photographs Division, Library of Congress, Washington, D.C.

The new clock and bell debuted in 1876 at the stroke of midnight on July Fourth: the bell, made of cannon from both sides of the Revolutionary and Civil Wars, struck thirteen peals. Then, "all the bells and steam whistles in the city joined in the sounds of rejoicing and fireworks and firearms made the noise tenfold louder." The new Independence Hall clock and bell assumed a central place in the daily lives of many Philadelphia residents. As one newspaper opined: "It would be impossible for us to do without it. The four faces of the State House timepiece are as familiar as the features of intimate friends; and the same may be said of its voice." Independence Hall's 1876 bell also marked important moments of national time. In 1888, an ordinance was passed requiring that the bell toll on New Year's Eve and July Fourth, in each case to "commemorate another year of American Independence."

The new hour's bell was itself a much heavier replica of the Liberty Bell. With each decade of the nineteenth century, American bells had grown more numerous, larger, and heavier, largely due to the work of three foundries; the Meneely Bell Company in upstate New York, Ohio's Verdin Company, and Maryland's McShane Bell Foundry. Big bells evoked Europe's church towers, as well as the monasteries that preceded them. Their triumphal installations, however, commemorated independence from Europe, liberty from the past, and democracy's triumphs. What is more, as creations of advanced steel and metal casting technologies often rung by automated systems, these bells were manifestations of innovations in industry and science. By 1900, at least 750 American cities relied on a time circuit to ring their bells on a daily basis, usually announcing noon and nine at night. Bells facilitated the distribution of clock time, but they also resonated with older meanings for time rooted in occasions, particularly historic ones.

The exhibition of the Liberty Bell, which had been mute for three decades, at the Centennial Exposition the same year that Independence Hall received its heavy bell and new clock drew attention to historic time and timekeepers. Many of the world's fair exhibits in 1876 showcased American-made watches, clocks, bells, and clock systems. Seth Thomas's "great clock," with its fourteen-foot-long pendulum, hung above the east door of Machinery Hall; an electric circuit connected it to clocks throughout several buildings' enormous exhibition spaces. The striking clock was attached to thirteen bells together weighing 22,000 pounds: each of the bells represented one of the thirteen original states. Watch manufacturers Elgin and Waltham each exhibited their lines at the fair, enjoying their triumph over Swiss and English competitors in various precision trials meant to test the watches. Each company's exhibits were more than platforms for these competitions; they sought to inspire fairgoers by demonstrating the possibilities of synchronicity. Despite the successes of American watch manufacturers, the impressive design and function of Seth Thomas's "great clock," and Independence Hall's state-of-the-art striking tower clock, the many dimensions of modern timekeeping had yet to coalesce. The most urgent need was for a reliable system to disseminate the time, but even more so, for an agreed-upon time standard.

Through the 1870s and into the 1880s, the most prominent public clocks throughout urban America were enlisted in the cause of banishing local time and crowning a national standard of time. In 1883 when railroads enacted a plan for a national system of standard time, most cities and towns acquiesced, agreeing to recalibrate their public clocks and bells to the new time standard. On the day the new system began, the city of Philadelphia and the Pennsylvania Railroad adopted it. An adjustment of thirty-six seconds brought the clock on Independence Hall into accord with 75th-meridian time.

Just when it seemed that clocks would be brought into agreement through the dissemination of standard time by time services and time circuits, a new impediment to synchronicity developed. In the effort to heighten visibility, the sponsors of public timekeepers set enormous dials with massive hands high upon towers. It was nearly impossible for the dial works of what were called "monster clocks" to function reliably. Imagine a technological device aiming for precision and accuracy that depended on "a little puff of air" traveling up seven floors "through a leaden tube having an inner diameter of no more than the sixteenth of an inch." This is what was required to move forward "the ponderous minute hands" of Philadelphia's new City Hall clock "about seven and one-half inches" every thirty seconds. At the turn of the century, monster clocks seemed a good way to disseminate the time to the nation's largest cities: the populations of Philadelphia, New York, and Chicago each surpassed one million. How else could a single, reliable time signal reach so many people?

A variety of efforts over several years near the end of the century led to the decision to install a monster clock on Philadelphia's new city hall. After months of investigation, which took a committee of commissioners of public

buildings to Milwaukee, Minneapolis, Newark, and Washington, D.C., the commissioners selected a novel and largely untested pneumatic system. Compressed air would move the clock's massive minute hands (each weighing 225 pounds) and hour hands (a mere 175 pounds each). The four clock dials would be connected to a master clock with "all the latest and most approved improvements to insure accurate time," including being on a telegraphic circuit to the United States Naval Observatory, which was considered the nation's most reliable source of time. While of an unusual scale, Philadelphia's city hall clock belonged to the Gilded Age culture of public timekeeping in which clocks on civic buildings proliferated.



Fig. 8. Liberty Loan Poster (1917). Courtesy of the Willard and Dorothy Straight Collection, Library of Congress, Washington, D.C.

At the same time, another clock project absorbed some of the attention of Philadelphia's residents. At Independence Hall, an architect planned to replace the dials of the 1876 Seth Thomas tower clock with decorative windows. Tall-case clocks would be added to the building's exterior returning it to its original appearance. To justify the dials' removal, the city's director of public buildings flourished historic engravings depicting the state house of the Revolutionary period. Despite such armature, the very suggestion that the tower's clock dials might be removed "aroused opposition." As one newspaper writer observed, "the transference [of clock dials to the tower in 1829] was a public convenience, and a public convenience it has been ever since." But not everyone agreed: another newspaper asserted that no one would "think of setting his clock or watch from a State House clock." The controversy was heated. Ultimately no change was made before the rededication of Independence Hall in October 1898. Independence Hall's clock dials remained perched well above the city streets and squares.

Shortly after the rededication of Independence Hall, commemorative friezes surrounding four twenty-five-foot clock dials on the new city hall tower were completed. Rising 361 feet from the building's top floor, the tower's height soars well above Independence Hall's tower, but also above the bell tower of St. Mark's in Venice and other landmark buildings in Western Europe. Bronze eagles perch above the clock dials. Crowning the entire ensemble is a statue of William Penn so large that according to a period publication, its mouth "would easily take in a whole turkey in one bite." Allegorical groups "representing four epochs in the early history of Pennsylvania" sit next to the pediments framing the clock dials. The eagles are particularly noteworthy, since throughout the nineteenth century they served as a national motif on timekeepers of all sorts. The dials of the clock would be illuminated, so that the time could seep across the city through night hours. Furthermore, the entire tower itself would serve as a time signal, with its lights extinguished momentarily to indicate nine o'clock each night. Even at a distance, then, watches and clocks could be reset.



Fig. 9. "Streetscape View of City Hall, Philadelphia," Carol M. Highsmith (ca.1980-2006). Photograph courtesy of the Carol M. Highsmith Archive, Prints and Photographs Division, Library of Congress, Washington, D.C.

Although the clock was hung and ready in early December 1898, the commissioners decided to wait until New Year's Eve to set it going. That night a party was held for the building commissioners, the mayor, and other officials, who then witnessed the starting of the clock. They were but a small portion of the people interested in the new clock; thousands crowded the streets around the city hall. "On the stroke of 12 last," it was reported, "pealing bells, the shrill notes of horns, and shouts and cheers of thousands" welcomed "the last year of the nineteenth century." Emphasized here are the aural sounds of

time—bells and horns—heralding not only the New Year, but also the clock's debut. But the clock dials' visibility was also of note. It was reported that crowds delighted when "the great dial of the colossal new clock in the City Hall burst into radiant light," and marveled as "the gigantic hands began their unceasing circuit." The newest clock in Philadelphia stimulated grandiose dreams befitting the largest timepiece in the world. A celestial presence was attributed to it: one observer commented that "the great timepiece was shown like a star." Like the North Star, this clock was expected to "regulate the comings and goings of countless succeeding generations of Philadelphians." It would "serve as the standard and regulator of clocks and watches of all posterity." The emphasis on the clock's visibility and accuracy spoke to desires for efficiency, accuracy, and synchronicity.

All of these hopes, however, were dashed within an hour of the clock's inauguration. The hands on the north dial stalled, probably because of the wind, sleet, and hail brought by a winter storm. The following day it was reported, "Broad Street travelers saw the monster hands flinging themselves wildly over the face [of the north dial]." Crowds of people gathered below, "gazing bewildered up at the tower." The clock did not work. By May 1899 the clock's problems were such that the city commissioners convened a meeting to discuss its "pure cussedness." In its inability to show the correct time, in the wild movement of the hands, the clock itself highlighted the artificiality of mechanical time as well as the unreliability of mechanical timekeepers. Its four faces could not consistently keep the time. It could not possibly "regulate the comings and goings of countless succeeding generations." Such an irregular clock had no hope of serving "as the standard and regulator of clocks and watches of all posterity."

A little more than a year after Philadelphia's gargantuan pneumatic clock was set running, the city unveiled a wooden "dummy clock" in a tall-case on an exterior wall of Independence Hall. The gold-colored hands on its face "pointed permanently at 11:22 o'clock." This odd hour was "the supposed time of the announcement of the Declaration of Independence." The dummy clock helped to return Independence Hall to its original appearance, for it was shaped like an oversized grandfather's clock, resembling the two tall-case clocks that stood on the east and west walls of the building between the 1750s and 1820s. That dummy clocks might show some fictitious moment when the Declaration of Independence was signed was declared insulting to intelligence and basic principles of timekeeping, not to mention patriotism. Calling it "that terrible atrocity," some Philadelphians wrote to the papers suggesting that "the dial was a criminal waste of space." The "incongruous and meaningless presence" of the dummy clock, according to one report, understandably excited a "storm of indignation and ridicule." The restoration committee members who arranged for it were accused of being "fakirs" and "vandals." This outrage was not the result of being deprived access to the time, since the dials on the tower of Independence Hall continued to show the time. Philadelphians depended on a network of public clocks as conveyances of clock time; within this context Independence Hall held a venerable place. So strong was public disapprobation

that ten days after the dummy clock was hung, it was taken down.

The controversies about the monster and dummy clocks in turn-of-the-century Philadelphia reveal how privileged seeing the time had become. Independence Hall's tower clock and hour's bell visually and aurally disseminated clock time well into the twentieth century. But the city hall clock, radiating time across the city and its environs, literally towered over Independence Hall. The faulty pneumatic system for moving the clock's hands had been replaced. Clock time, to be sure, could be still be heard, and was still listened for; but it was the hands and faces of time that provided its centrifuge at the dawn of the twentieth century.

Further Reading

The best starting point for any study of timekeeping is E. P. Thompson's landmark essay "Time, Work-Discipline, and Industrial Capitalism," *Past & Present* 38 (1967): 56-97. The literature about timekeeping in early modern Europe is extensive, but there are two books that are essential reading: Alain Corbin, *Village Bells: Sound and Meaning in the 19th-Century French Countryside* (New York, 1998, 1994) and Gerhard Dohrn-van Rossum, *History of the Hour: Clocks and Modern Temporal Orders* (Chicago, 1996, 1992). Michael J. Sauter's 2007 *American Historical Review* essay, "Clockwatchers and Stargazers: Time Discipline in Early Modern Berlin," is also essential reading. About time as a matter of occasion and as a matter of measure, see Stuart Sherman's *Telling Time: Clocks, Diaries, and English Diurnal Form, 1660-1785* (Chicago, 1996). About timekeeping in early modern England, consult the recently published *Shaping the Day: A History of Timekeeping in England and Wales, 1300-1800* (Oxford, 2009) by geographers Paul Glennie and Nigel Thrift, but don't forget about David Cressy's *Bonfire & Bells: National Memory and the Protestant Calendar in Elizabethan and Stuart England* (Great Britain, 1989). John Styles's *The Dress of the People: Everyday Fashion in Eighteenth-Century England* (New Haven, 2007) looks closely at court records for evidence of watch ownership among working-class Britons.

Carlene Stephens, Michael O'Malley, and Mark M. Smith have each authored foundational works about time in the United States. Particular attention should be drawn to O'Malley's *Keeping Watch: A History of American Time* (Washington, D.C., 1996), Stephens's *On Time: How America Has Learned to Live by the Clock* (Boston, 2002), and Smith's *Mastered by the Clock: Time, Slavery, and Freedom in the American South* (Chapel Hill, 1997). A detailed and exhaustive investigation into the important role astronomical observatories played in American timekeeping can be found in Ian Bartky's *Selling the True Time: Nineteenth-Century Timekeeping in America* (Palo Alto, 2000). Two terrific studies that address the material culture of timekeeping in the nineteenth century are Thomas Allen's *A Republic in Time: Temporality and Social Imagination in Nineteenth-Century America* (Chapel Hill, 2008) and David Jaffee's *A New Nation of Goods: The Material Culture of Early America* (Philadelphia, 2010). About timekeeping during the Civil War, see Cheryl

Wells's *Civil War Time: Temporality and Identity in America, 1861-1865* (Athens, Ga., 2005). There are a number of scholarly articles about the ownership of timepieces in the eighteenth and nineteenth century. A good place to start is Martin Bruegel's "'Time That Can Be Relied Upon': The Evolution of Time Consciousness in the Mid-Hudson Valley, 1790-1860" in *Journal of Social History* 28 (1995): 547-64.

About the timekeepers on Independence Hall and Philadelphia's City Hall, see Michael J. Lewis's "'Silent, Weird, Beautiful': Philadelphia City Hall" in *Nineteenth Century* v. 11 (1992): 13-21; Charlene Mires, *Independence Hall in American Memory* (Philadelphia, 2002); and Gary Nash's *The Liberty Bell* (New Haven, 2010). In a 2005 essay in *American Literature* titled "Stealing Time: Poe's Confidence Men and the 'Rush of the Age,'" the literary critic Clayton Marsh draws attention to Edgar Allen Poe's stories, as well as other pieces of period literature, that address antebellum timekeeping.

Clocks are not the only the only way to measure and mete out time; nature provides all sorts of measures as well, none more important than diurnal rhythms of day and night. The German cultural historian Wolfgang Schivelbusch's *Disenchanted Night: The Industrialization of Light in the Nineteenth Century* (Berkeley, 1988, 1983) does for night what his *The Railway Journey: The Industrialization of Time and Space in the 19th Century* (Berkeley, 1986, 1977) did for time and space. A. Roger Ekirch's *At Day's Close: Night in Times Past* (New York, 2005) is a model social history of the experience of time in which many details about the incidence of clocks, ringing of hours, and notation of time are evident. Peter Baldwin's *In the Watches of Night: Life in the Nocturnal City* (Chicago, 2012) extends this exploration into American city nights. Baldwin's 2005 *Common-place* essay "[Mapping Time: Night and Day in The Nineteenth-Century City](#)" is a fitting companion for this essay.

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