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REPORT ON THE PIERCE SHOPS SPOFFORD VILLAGE CHESTERFIELD, NEW HAMPSHIRE

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The following report is based on a brief inspection of the Pierce Shops buildings in Spofford Village on the morning of June 9, 2005. The purpose of the inspection was to gain an understanding of the structural system, approximate dates, evolution, and structural and cultural integrity of these buildings. Present during the inspection were Catherine Young of the United States Environmental Protection Agency; John Liptak of the New Hampshire Department of Environmental Services; Cornelia (Neil) Jenness, Chesterfield local historian; James McConaha, New Hampshire State Historic Preservation Officer; and James L. Garvin, New Hampshire State Architectural Historian.

Historical Background

The Pierce shop buildings appear to be the last surviving structures in Spofford Village, in the township of Chesterfield, that relate to two categories of manufacture for which Chesterfield attained national prominence: the manufacture of bits, gimlets, and augers, and the manufacture of spinning wheel heads.¹ The northernmost building in the group was apparently erected about 1880 for the manufacture of brush handles, and therefore relates to a third theme and a pervasive manufacturing phenomenon in southern New Hampshire in the latter nineteenth century: the prevalence of mills and shops for manufacturing products from native woods.²

¹ The following introductory paragraphs are excerpted from the document, "Pierce Shops, Spofford Village: National Register Statement of Significance," written by James L. Garvin on December 5, 2004.

² Local historian Cornelia Jenness states that local oral tradition asserts that the brush handle shop was a separate building located somewhere to the east of the larger, rear building of the surviving Pierce Shops.

According to a plan showing the property of F. B. Pierce & Company in 1902, the firm then owned three water-powered mill sites arrayed along a declivity along which Partridge Brook fell a total of 47 feet, providing hydrostatic heads of 15 feet for the upper mills (the property addressed here), 12 feet for the middle or lower mill, and 20 feet for a sawmill that was located farthest downstream. Of these three waterpower sites, only the upper mill complex survives; the middle or lower mill and the sawmill have disappeared.

Frederick Benjamin Pierce (1845-1928) was a manufacturer of bits and augers, spinning wheel heads, and brush handles. He was the son of, and business successor to, Benjamin Pierce (1814-1899), who pioneered in the manufacture and distribution of both bits and spinning wheel heads and attained national prominence in both industries. The New Hampshire Historical Society owns a ledger and a daybook/diary of Benjamin Pierce, and the Old Sturbridge Village Research Library owns a Pierce daybook, recording the years between 1859 and 1866. The latter afforded the documentation for a detailed study of Benjamin Pierce's manufacture of spinning wheel heads in 1997.³

Factory Village (now Spofford) in the township of Chesterfield attained remarkable eminence in the production of edge tools, bits, augers, and gimlets in the latter half of the nineteenth century. Many of the settlers of this area immigrated from Connecticut and Rhode Island, and brought with them a tradition of manufacturing wood-boring tools. The town of Chesterfield, which never attained a population of more than 2200 inhabitants during the nineteenth century, nevertheless claimed no fewer than ten auger makers during that century.⁴ One of these men, Richard Henry Hopkins (1831-1877), patented a design for an auger or bit in 1870. Hopkins worked for, and in partnership with, Benjamin Pierce, who owned the manufacturing property discussed here.⁵

Chesterfield manufacturers often combined the business of forging and finishing bits and augers with that of manufacturing spinning wheel heads. The skills necessary to fashion augers were similar to those needed in the forging and polishing of iron or steel spindles for wool wheels.⁶

The history of bit manufacture in Spofford Village seems initially to have focused on a large building that formerly stood on Partridge Brook south of Main Street, close to the point where the course of the stream turns sharply north and passes under the road to intersect the Frederick Benjamin Pierce property. As noted in the 1882 *History of Chesterfield*, this building was

³ Frank G. White, "Heads Were Spinning: The Significance of the Patent Accelerating Spinning Wheel Head," *Textiles in Early New England: Design, Production, and Consumption* (The Dublin Seminar for New England Folklife Annual Proceedings, 1997): 64-81. At the time of his writing, Frank G. White was Curator of Mechanical Arts at Old Sturbridge Village. The ledger owned by the New Hampshire Historical Society covers the years between about 1850 and about 1870, and confirms the narrative and the analyses that White derived from the separate daybook at Old Sturbridge Village.

⁴ *Population of New Hampshire, 1623-1940* (Concord, N. H.: State Planning and Development Commission, 1946):12-13; James L. and Donna-Belle Garvin, *Instruments of Change: New Hampshire Hand Tools and Their Makers, 1800-1900* (Concord, N. H.: New Hampshire Historical Society, 1985), p. 18.

⁵ Garvin and Garvin, p. 77. Local historian Cornelia Jenness states that her research indicates that Richard Henry Hopkins, Jonathan S. Hopkins, and Elliot P. Hopkins always owned the property here referred to as the "Pierce Shops" during their lifetimes, and that the property passed into the hands of Frederick Benjamin Pierce at a later time. Thus, the "Pierce Shops" may historically have operated during their early years as the "Hopkins Shops."

⁶ White, pp. 72-73.

originally the old meeting house of the east parish of Westmoreland. It was moved to this site on Partridge Brook by Benjamin and Gilman Farwell and purchased for the manufacture of bits in 1836 or 1837 by Joshua Richardson and Oliver B. Huggins.⁷ Benjamin Pierce, who had formerly worked as a sales representative for Richardson and Huggins, purchased the building about 1853 and continued the manufacture of bits there. Photographs of the bit shop supplied by the Chesterfield Historical Society show that the building retained the appearance of a meeting house throughout its existence, even displaying the old pulpit window located halfway between the first floor and the former gallery level. The building is indicated as “Benj. Pierce’s Bit Fact.” on the 1858 map of Chesterfield Factory [Village], and as “Auger Fact.” on the Hurd map of 1892. Benjamin Pierce sold the property to the Currier Brothers in 1882.⁸ The building was reportedly abandoned around 1909.

Although the manufacture of bits in Spofford Village continued throughout most of the latter nineteenth century, the allied manufacture of spinning wheel heads seems to have claimed an ever-increasing proportion of Chesterfield’s industrial output as the decades passed. When Benjamin Pierce sold the bit shop south of Main Street to the Currier Brothers in 1882, he had already commenced the manufacture of wheel heads in conjunction with his son, concentrating his own energy on marketing these devices.⁹

Benjamin Pierce appears to have taken his son, Frederick Benjamin Pierce, as a partner in his business around 1868 or 1870. Prior to that time, however, the elder Pierce had established an ever-growing business in the sale of spinning wheel heads, which he bought from local manufacturers.¹⁰ It appears that the shop used by the Pierces for this manufacture had previously been used for the same purpose by Jonathan S. Hopkins. According to the town history, “Jonathan S. Hopkins made ‘wheel heads,’ as they are commonly called . . . in the old building now [1882] used by F. B. Pierce for the same purpose. Elliot P. and Samuel F. Hopkins, and others, have also engaged in their manufacture in the same building.”¹¹

As made in Chesterfield, wheel heads were manufactured according to patents of 1803 and 1810.¹² The patentee was Amos Miner, a settler in upstate New York. Miner’s patent greatly increased the speed of rotation of the spindle of wool wheels by adding a second pulley between the great wheel and the spindle pulley, more than doubling the spindle’s velocity. This increased speed of rotation imparted more twist to the yarn with less effort, and proved to be crucial in the spinning of the long-staple wool of the Merino sheep, which were just being introduced into New England and New York when Miner patented his invention.

Miner’s 1810 patent secured to him the exclusive right to manufacture, or to license the manufacture of, his wheel heads for the next fourteen years. As far as is known, the only

⁷ Oran E. Randall, *History of Chesterfield* (Brattleboro, Vt.: D. Leonard, 1882), pp. 160-161.

⁸ Hamilton Child, comp., *Gazetteer of Cheshire County, New Hampshire* (Syracuse, N. Y.: Journal Office, 1885), p. 97; Randall, pp. 136-137.

⁹ Child, p. 97.

¹⁰ White, pp. 73-74.

¹¹ Randall, p. 161.

¹² The following paragraphs represent a summary of Frank G. White, “Heads Were Spinning: The Significance of the Patent Accelerating Spinning Wheel Head,” *Textiles in Early New England: Design, Production, and Consumption* (The Dublin Seminar for New England Folklife Annual Proceedings, 1997): 64-81.

licensee of Miner's patent in New England was the partnership of Abijah and Azel Wilder of Keene, who already manufactured spinning wheels. Azel Wilder eventually assumed sole control of the business, eventually extending his monopoly throughout most of New England. Wilder's monopoly ended with the expiration of Miner's patent in 1824, and the center of manufacturing wheel heads in New England immediately shifted from Keene to Chesterfield, where several manufacturers had apparently attempted the infringement of the patent before its expiration.

As noted above, Benjamin Pierce was already supplementing his bit and auger business with ever-increasing sales of wheel heads during the 1850s, making use of the far-flung sales contacts he had developed through sales of boring tools. Selling wheel heads manufactured by the Hopkins family and others, and eventually made by himself and his son, Pierce developed an enormous market for the devices. According to Frank White, former Curator of Mechanical Arts at Old Sturbridge Village,

By the 1860s, Benjamin Pierce and his fellow Chesterfield manufacturers virtually monopolized the wheel head market. In 1832, 30,000 heads were reported from the two towns of Keene and Chesterfield. In 1850, Chesterfield reported 20,000 heads, but only 8,400 in 1860; then in 1870 this town's production rose to almost 30,000. Yet, these official returns do not accurately tell the whole story. Pierce alone sold over 13,000 heads in 1859 and over 60,000 in 1865, so in some cases the reported numbers reflect only a portion of actual sales.¹³

According to the town history of 1882, "at one time during the late war, he [Benjamin Pierce] employed about 75 hands in the manufacture of wheel-heads, there being a great demand for them at that time. At present, they are manufactured by his son, Fred B. Pierce, who employs in this business (and in the making of brush-handles) from 15 to 25 hands."¹⁴

The Industrial Censuses from 1850 through 1880 document the business evolution that is outlined above. The 1850 census shows Sidney S. Campbell and E. Hopkins as wheel head manufacturers, producing a total of 20,000 wheel heads from birch and other woods. The 1860 census shows Campbell manufacturing 700 dozen wheel heads, and William W. Hopkins making 1,000 spinning wheels, while Benjamin Pierce first appears as the manufacturer of 200,000 bits and augers worth \$12,000. By 1870, Pierce was making 150,000 bits worth \$20,000. By 1880, just before he sold the auger and bit shop to the Currier Brothers and some ten years after he took his son into his business, Benjamin and Fred Pierce are shown together as manufacturing augers, bits, and gimlets, wheel heads and brush handles, and spinning and flax wheels. They employed 60 men, paying a total of \$15,000 in wages and manufacturing products worth \$25,000. Their shop[s] were then powered by a breast water wheel eight feet wide, generating 18 horsepower, and by a Houston turbine generating 22 horsepower.

In his 1997 study, Frank White attempted to explain the ever-increasing demand for spinning wheel heads at a time when more and more wool spinning was being done in the textile mills that

¹³ White, p. 75.

¹⁴ Randall, p. 162.

were proliferating throughout the eastern United States. White concluded that sheep culture moved steadily westward throughout the nineteenth century, and that western farmers had little access to factories for spinning their product. White noted that “the study of Benjamin Pierce’s account book shows that he was strategically poised to take advantage of this westward moving market for hand spinning equipment.” White documented sales by Pierce to hardware dealers and other middlemen in upstate New York; Toledo, Ohio; Detroit, Michigan; Chicago, Illinois; and cities in Iowa, Wisconsin, and in Canada.¹⁵ The ledger at the New Hampshire Historical Society further documents sales to more southerly markets in Missouri, Mississippi, Tennessee and Kentucky.

During the Civil War, when the author of the Chesterfield town history noted Pierce’s phenomenal production of wheel heads with a work force of 75 hands, the nation was largely affected by a widespread (and unwarranted) speculation in the scarcity and importance of wool at the end of the Civil War. According to White, “it seems probable that some of the sixty thousand-plus wheel heads sold by Pierce in 1865 were purchased by home spinners who also hoped to capitalize on the projected boom in woolen goods” following the war.¹⁶

It appears that after this expected market for wheel heads reached a more rational level, the Pierces adjusted their business to reflect new demands. According to Oran Randall in his 1882 *History of Chesterfield*, “the manufacture of handles for paint and varnish brushes is carried on to a considerable extent by F. B. Pierce at Factory Village. In 1880, Mr. Pierce erected a large and convenient building on the site of a portion of the old wheel-head shop, which is well supplied with machinery for the rapid manufacture of these handles.”¹⁷ This business employed about thirty men and produced products valued at about \$25,000 a year.¹⁸

Thus, it appears that the property in question retains structures that were used in two important categories of manufacturing in Spofford Village: the production of spinning wheel heads and wooden handles. Both enterprises used local forest species as raw material, and both employed the power of Partridge Brook. In defiance of expectations in a nation that was producing ever greater quantities of textiles in large factories, Pierce’s wheel head business attained national stature and influence. Pierce used his skill in sales, and the widespread contacts he had nurtured in his earlier enterprise as a bit and auger manufacturer, to distribute his products by water and by rail to an immense market. Major hardware dealers in city and country acted as agents for distribution of his Chesterfield products.¹⁹

Description of the Buildings

In reports compiled prior to the present study, the Pierce Shops have been classified as two buildings. The southernmost structure is said to date from circa 1810. The larger, northernmost structure, standing close to a curve in the channel of Partridge Brook, is said to date from circa 1840 or 1850. The earlier building is described as measuring about 20 feet wide by 44 feet long,

¹⁵ White, p. 79.

¹⁶ White, pp. 78-79.

¹⁷ Randall, pp. 163-164.

¹⁸ Child, p. 97.

¹⁹ White, pp. 79-81; *Illustrated Catalogue of American Hardware of the Russell and Erwin Manufacturing Company*, unabridged reprint of the 1865 edition (N.p.: Association for Preservation Technology, 1980), p. 289.

not including a series of shed-roofed modern additions along its eastern side. It has two stories and low pitched gable roof that covers an unfinished attic space. The newer building measures 32 feet wide by 44 feet long. It has two tall stories adapted for manufacturing by water power. Its attic story that has been finished as modern office space in recent years, but was apparently originally intended for storage.

Examination of these structures on June 9, 2005, disclosed that the front (southern) building has three independent structural frames, or parts of frames, dating from three different periods which may be estimated at circa 1915 (southernmost section), circa 1850 (middle section), and circa 1830 (northernmost section). The large, independently-framed structure to the north was built in one campaign and displays a mastery of timber engineering and framing. It may be dated at circa 1860.

The southernmost section of the older set of buildings, or building frames, is about twenty feet long on its western side.²⁰ It extends the set of structures that compose the older buildings to within about twenty feet of the paved highway (N. H. Route 9A) that runs to the south of the property. This extension is constructed of second-hand timbers (possibly salvaged from a demolished section of the next frame to the north) and stands on a concrete foundation, topped with local stone. This unit lacks structural coherence and was not examined in detail.

The next frame to the north (the middle section of the older “building”) is composed of sawn members, cut on a water-powered upright (“up-and-down”) sawmill. This frame has a regular series of wall posts that measure about 8” by 8” and are spaced about 7’-0” apart. The total length of this sawn frame appears to extend for only two structural bays, for a total length of about 14’-0.” The lower frame supports wall plates (not accessible for study due to a prohibition from entering the attic), and these wall plates support a roof system of common rafters, sawn on an upright sawmill. According to field notes taken by Frank Whittemore of the Preservation Company in December 2004, these rafters measure 2” by 5” and are placed about two feet on centers.²¹ There is no ridgepole. The horizontal roof sheathing boards of this section of the buildings are waney-edged. A covering of wooden shingles lies on top of the sheathing, but there is a slate roof above the wooden shingles.

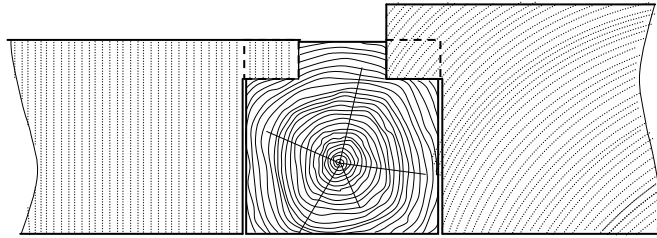
Common rafter roofs are standard in the Connecticut River valley from the time of earliest settlement. Sawn common rafters (as differentiated from hewn) might be expected to appear in the region at about the same time that sawn rafters appear elsewhere in New Hampshire where sawmills were readily available: generally, around 1800 and after. Thus, the use of sawn common rafters, by itself, suggests a date for this portion of the frame of 1800 or later.

Between each of the pairs of posts, tie beams extend across the width of the building. On the upper floor, these tie beams support longitudinal ceiling joists that are set into butt-cogged joints. In the area available for observation, the original vertically-sawn joists have been replaced by deeper circular-sawn joists, probably to allow a board floor to be laid in the attic for access or

²⁰ Dimensions are approximate, and are based on field notes taken in December, 2004, by Preservation Company of Kensington, New Hampshire, and provided to the New Hampshire Division of Historical Resources by Catherine Young of the Environmental Protection Agency on May 31, 2005.

²¹ Memorandum, Frank Whittemore to Jim McConaha, December 7, 2004, and hand-written/drawn field notes.

storage and to provide added joist depth to bear the weight of this floor loading. These newer joists are 7" to 8" deep, and their tops extend above the upper surface of the tie beams:

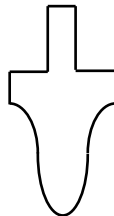


*Probable original joist depth,
upright sawn*

*Present joist depth,
circular sawn*

None of the framing attributes that are readily observable in this section of the building can be dated with precision. The use of common rafters, of sawn framing members, of butt-cogged joist seats, and other features, could have been employed over a considerable time span in the Connecticut Valley.

One dating aid to be seen in this part of the building, as in other sections, is the design of the window sashes. Windows in this portion of the building are consistently of the eight-over-twelve pattern in this unit, as in the adjacent section to the north. But here, the sashes exhibit a muntin profile that is generally diagnostic of the period from about 1845 to 1880:



As almost the only stylistic attributes of this building unit, these sashes suggest a construction date of about 1850 when correlated with the technological evidence exhibited in the frame.

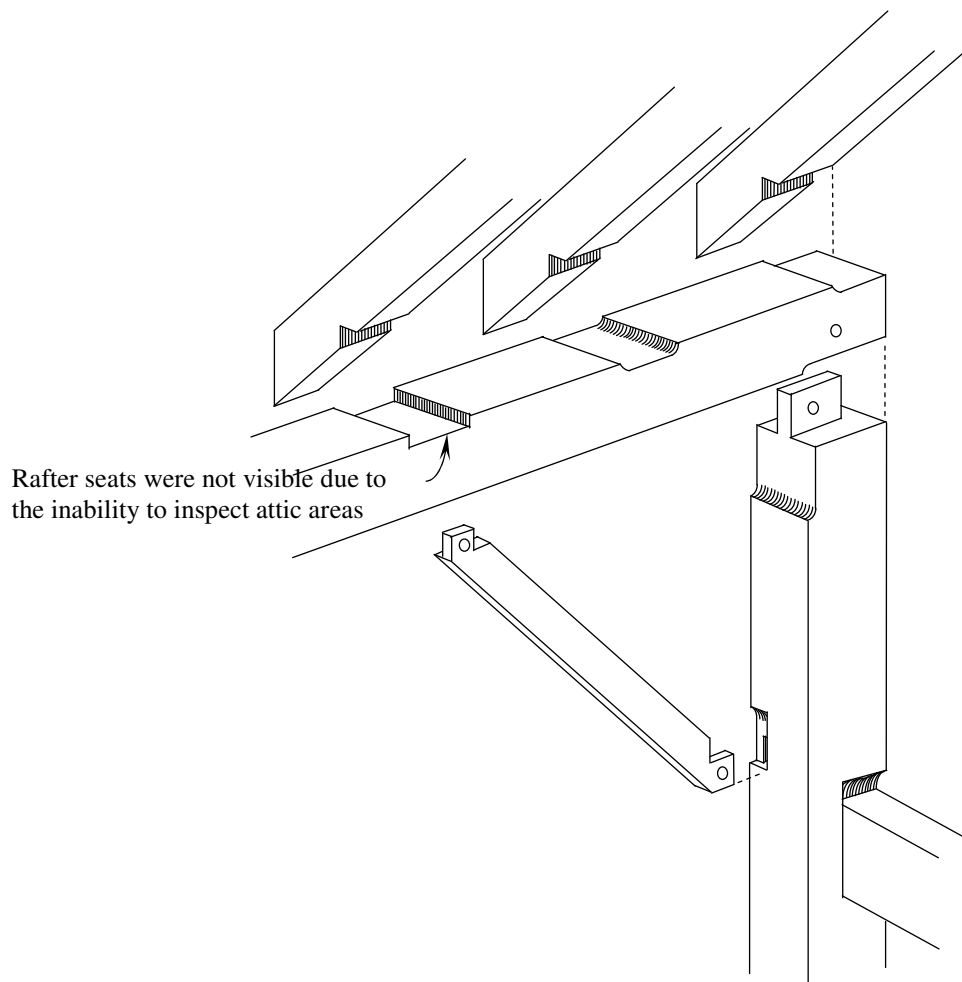
As far as can be seen, given the degree to which the building frame is covered by modern materials, the same construction seen on the main floor remains consistent on the floor below. In this area of the building, sawn members continue down to the building sills, defining two-story structural bays.

The next frame to the north (the northernmost section of the older "building") is composed of hewn members supporting sawn three-inch-wide joists, placed 28" to 30" on centers. This frame is covered with ship-lapped exterior sheathing, sawn on an upright saw and originally covered with clapboards. The use of jointed and ship lapped exterior sheathing contrasts with the common practice of covering a frame with bevel-edged sheathing finished with a drawknife.

The more careful and painstaking method employed in this building was probably chosen because the sheathing and clapboards were the only covering on the frame until modern gypsum board interior finish was applied. The lapped joints in the sheathing board would have provided superior resistance to air infiltration in an unplastered building. The coloration of the wall posts, studs, braces, and sheathing boards in this building is uniformly dark, and suggests that oxidation of the wood took place evenly and over a long period, and that there was no interior wall covering until recent years.

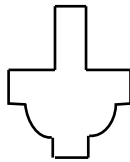
This hewn building frame appears to extend for a length of about 28 feet, keeping the width of about twenty feet seen in the sections to the south. This frame bears the recessed seats at each joint that are attributes of “square rule” framing. This method of framing, introduced in New Hampshire around 1820, produced frames that tended toward standardization of parts. In this framing method, carpenters prepared patterns for each type of joint, applying the patterns so that all mortises, tenons, pin holes, and other features of joints of the same type would be interchangeable. The hewn timbers in such a frame might not be of uniform width and depth, but carpenters using the square rule applied their patterns in such away that each joint bore an identical relationship to others in the frame, even if the timbers varied somewhat in their dimensions.

Square rule framing required that the seat of each joint be chiseled down below the irregular surface of the timber so that all seats would lie along the surface plane of an imaginary, perfect member that lay within the actual timber. The result is a noticeable cutting away of the outer surface of the timber at each joint, as shown in the diagram below:



The frame of this northernmost section of the older portion of the Pierce shops is well braced. The frame has braces (or mortises for braces that have been removed) in the planes of the exterior walls and also from the wall posts to the tie beams or interior cross girts at the lower level. The frame is further strengthened by iron dogs or staples that clinch together the posts and their intersecting girts. The use of iron dogs in framing joints is unusual, and the provision for added tensile strength at each joint may denote the fact that the frame was intended to enclose large, open rooms on each floor, with little interior support at intermediate points.

Because the square rule method of framing was introduced around 1820, it appears that this northernmost section of the older “building” was constructed at about that date or later. The date of this section of the structure seems to be corroborated by the muntin pattern of the window sashes in this section of the structure. The sashes here differ in style from those seen in the section of the building to the south, with its all-sawn frame. The sashes in this northerly portion of the older set of frames are mostly of the eight-over-twelve pattern that is favored in western New Hampshire during the early 1800s. Their muntin profile, however, is of the pattern shown below:



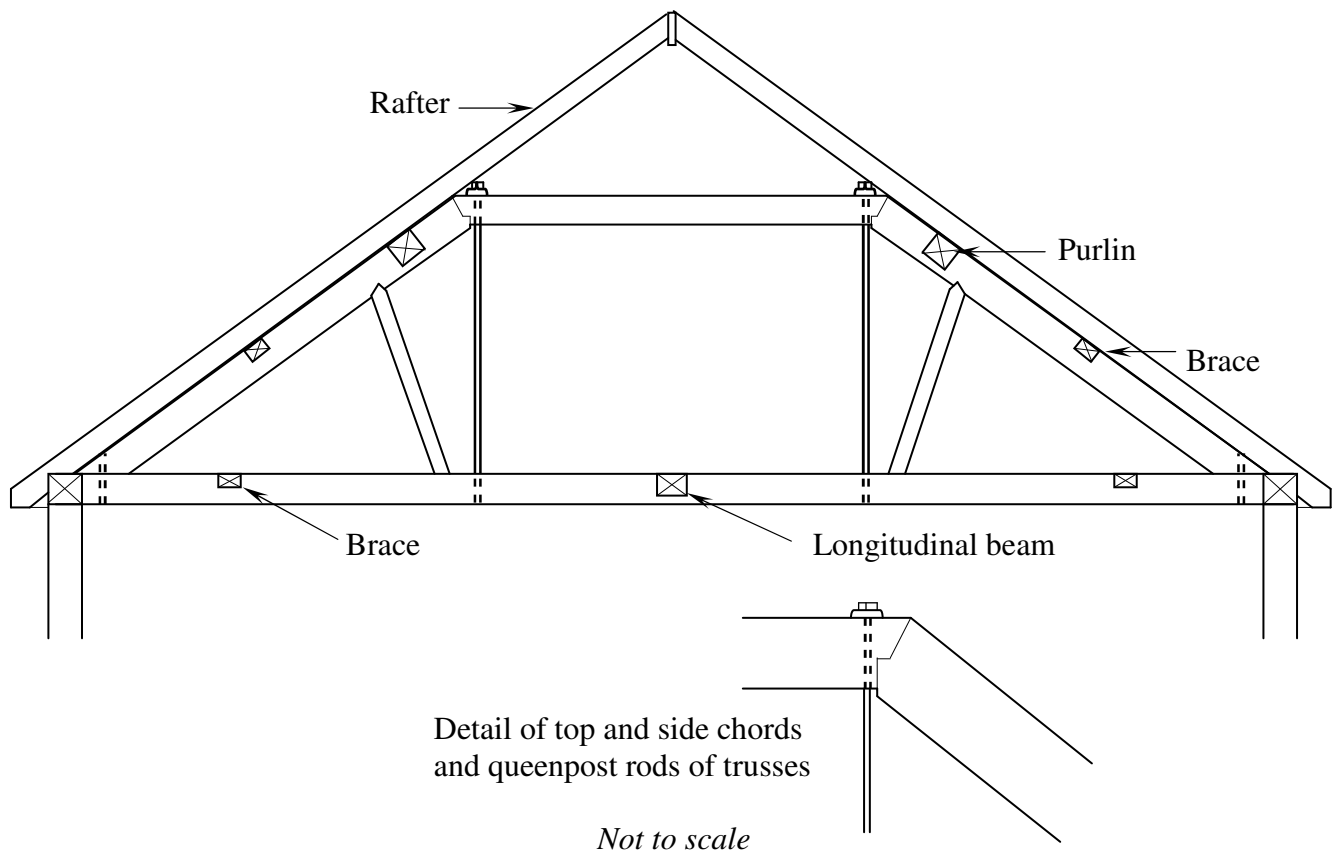
This muntin pattern, with slight variations, persisted from the 1790s until about 1830. The correlation between a framing method that was introduced about 1820 and a muntin pattern that was widely supplanted by other designs about 1830 suggests that this section of the building dates from about 1830. A more exact date might be estimated if we knew more about the evolution of framing practices, and especially about the general adoption of square rule framing, in the Chesterfield area.

In summary, the older “building” of the Pierce Shops is actually composed of two old building frames, and one newer section, apparently constructed of reused timbers, at the front, nearest the road. Of the two older portions of the structure, the middle section, with its all-sawn frame, appears from technological and stylistic evidence to date from about 1850. The longer northern section, with a frame having hewn principal members yet exhibiting evidence of the square rule method of layout, appears to date from technological and stylistic evidence from about 1830. It may not be possible to ascertain the integrity or the full design intent of the two older frames embedded in the front section of the Pierce Shops without the removal of more gypsum board and other modern materials that obscure the frame.

The newer building of the Pierce Shops is a single, large structure standing at the rear (north) of the complex. This structure measures 44 feet long by 32 feet wide, and is two stories high. Its side walls are framed with seven structural bents (including the two end walls), placed about seven feet on centers. The frame of this building is entirely circular sawn (as is the wall and floor boarding), and the framing members are of large dimensions and carefully assembled into a building of great strength and rigidity. The frame of this newer building is strongly braced by 3”

by 5" sawn braces in the wall planes, and also by diagonal braces in the planes of the floors. The latter connect the tie beams or floor girders with the longitudinal wall plates or girts, imparting great resistance to racking under wind loading. Additional staunchness is imparted to this building by the thickness of its plank floors. The floor planks of the first story (above the crawl space) measure 3" by 8" at the stairway, and the floor planks of the second story measure 5½" by 8," evidently having been given this massive depth to support the weight of machinery and to damp vibration. There is ample evidence in the floor and ceiling framing of lines of former power transmission shafting and of anchorage for numerous machines.

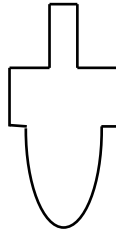
This building was intended to have an entirely open second story. Support of the 44- by 32-foot attic floor above this unencumbered space was accomplished through the use of two heavy Howe-type (wood and iron) queenpost trusses in the attic. Since these queenpost trusses could support only the tie beams or bottom chords over which they are placed, some means had to be found to support the three alternate tie beams, which lie on each side of the two trusses. This was accomplished by running a longitudinal floor beam along the center of the building, below the ridgepole. The longitudinal beam appears to lap over the tops of the bottom chords of the trusses and the otherwise unsupported tie beams. The means of connecting this longitudinal supporting member to the tie beams was not observed, but the joints may be supposed to be bolted. The truss system is designed in this fashion:



It is clear from the massive framing members and the heavy floors that this building was intended to support heavy floor loads and to resist the vibration of machinery. In many respects, this building is a wood-framed equivalent to a masonry-walled mill building of the mid-1800s. Like masonry mills, this structure utilizes heavy wooden floor planks to span the six-foot distance between widely spaced joists, themselves of heavy 8" by 8" cross-sections.

On both the first and second floors, longitudinal trestles have been placed through the central three or four structural bays beneath the longitudinal floor beam. These trestles support a secondary longitudinal beam below the upper beam, offering additional support in the center of the structure. At one point below the attic floor, it appears that a tie beam may have split at its intersection with the longitudinal floor beam. Such failures may have required the addition of these trestles on each floor, or the trestles may possibly have been original. Further careful inspection should reveal whether these trestles date after the main frame.

Because this building employs wood-and-iron roof trusses, a structural system devised in the 1840s and widely adopted in the 1850s, it may be surmised that the building dates from the 1850s or later. One stylistic clue to the date of the structure is offered by the window sashes. Although the older sashes have been replaced on the lower floor of the building, original six-over-six windows remain largely intact on the second or main floor. These sashes have a muntin pattern that generally denotes a date range between 1835 and 1870:



Because of its sophisticated engineering and massive framing, the date of the northernmost of the surviving Pierce Shops may be estimated to date from about 1860. If it is true that Frederick Benjamin Pierce's handle shop was another building, then this building may have been constructed to support the increased manufacture of wheel heads that characterized the period around the Civil War.

It is clear that this northernmost building represents considerable investment of planning, capital, and workmanship. The structure is an important example of Civil War-era wooden design and framing and, further, is associated with a manufacturing enterprise that attained national significance. Because of the complexity and sophistication of its design, this building, like the two older frames to its south, deserves careful study and recordation.