

NATIONAL HISTORIC LANDMARK NOMINATION

NPS Form 10-900

USDI/NPS NRHP Registration Form (Rev. 8-86)

OMB No. 1024-0018

The Baltimore and Ohio Railroad Martinsburg Shops

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United States Department of the Interior, National Park Service

National Register of Historic Places Registration Form

1. NAME OF PROPERTY

Historic Name: The Baltimore and Ohio Railroad Martinsburg Shops

Other Name/Site Number: N/A

2. LOCATION

Street & Number: 300 East Martin Street

Not for publication: \_\_

City/Town: Martinsburg

Vicinity: \_\_

State: West Virginia County: Berkeley Code: 003 Zip Code: 25401

3. CLASSIFICATION

Ownership of Property

Private: \_\_
Public-Local: X
Public-State: \_\_
Public-Federal: \_\_

Category of Property

Building(s): X
District: \_\_
Site: \_\_
Structure: \_\_
Object: \_\_

Number of Resources within Property

Contributing

3
\_\_
\_\_
\_\_
3

Noncontributing

1 buildings
1 site
3 structures
1 objects
6 Total

Number of Contributing Resources Previously Listed in the National Register: 16

Name of Related Multiple Property Listing: The Baltimore and Ohio Railroad Complex; Baltimore and Ohio Railroad and Related Industries Historic District

**The Baltimore and Ohio Railroad Martinsburg Shops**

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**4. STATE/FEDERAL AGENCY CERTIFICATION**

As the designated authority under the National Historic Preservation Act of 1966, as amended, I hereby certify that this \_\_\_ nomination \_\_\_ request for determination of eligibility meets the documentation standards for registering properties in the National Register of Historic Places and meets the procedural and professional requirements set forth in 36 CFR Part 60. In my opinion, the property \_\_\_ meets \_\_\_ does not meet the National Register Criteria.

Signature of Certifying Official

Date

State or Federal Agency and Bureau

In my opinion, the property \_\_\_ meets \_\_\_ does not meet the National Register criteria.

Signature of Commenting or Other Official

Date

State or Federal Agency and Bureau

**5. NATIONAL PARK SERVICE CERTIFICATION**

I hereby certify that this property is:

- \_\_\_ Entered in the National Register \_\_\_\_\_
- \_\_\_ Determined eligible for the National Register \_\_\_\_\_
- \_\_\_ Determined not eligible for the National Register \_\_\_\_\_
- \_\_\_ Removed from the National Register \_\_\_\_\_
- \_\_\_ Other (explain): \_\_\_\_\_

Signature of Keeper

Date of Action

**The Baltimore and Ohio Railroad Martinsburg Shops**

**6. FUNCTION OR USE**

Historic: Transportation                      Sub: Rail-related

Current: Work in progress                      Sub:

**7. DESCRIPTION**

ARCHITECTURAL CLASSIFICATION: Industrial

**MATERIALS:**

Foundation: Stone

Walls: Brick

Roof: Wood, asphalt paper

Other: Internal cast-iron skeletal frame, wood-and-iron trusses

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**Describe Present and Historic Physical Appearance.**

The Baltimore and Ohio Railroad Martinsburg shops sit in a shallow valley, on a crescent-shaped parcel of land along the banks of Tuscarora Creek, in Martinsburg, West Virginia.<sup>1</sup> The shops (figures 1,2, and 8) are bounded on the east by the Tuscarora, and to the west by the former main line of the Baltimore and Ohio (B&O) Railroad--which runs north-south at this location.<sup>2</sup> Immediately west across the main line tracks stands the former B&O depot/hotel, with the city's commercial district extending up the hillside behind.<sup>3</sup> Eastward across Tuscarora Creek is a hillside neighborhood of nineteenth century workers' housing. The areas north and south of the site are level and devoid of buildings, where railroad tracks (marshaling yards, passing sidings, and spurs running into the shops) once existed. Eastward, between the shops and the creek, are the ruins of six twentieth-century structures. To the west, between the shops and main line, is an open area interrupted only by three small fire-hydrant sheds and a ca. 1930 caboose on display.

As nominated, the B&O shop maintenance complex was constructed in 1866 and consists of three contributing buildings. From north to south, these are: (1) the Machine and Woodworking Shop, (2) the West Roundhouse, and (3) the Car Shop (begun in 1866, but probably not completed until early 1867). Their names and functions changed over time, and today these buildings are usually referred to as the Bridge and Machine Shop, the West Roundhouse, and the Frog and Switch Shop. CSX, the modern owner of the historic B&O, closed the shops in 1985 and maintained ownership until 1999. In 1999, the complex and its surrounding property were purchased by the Berkely County Roundhouse Authority, a local public entity. In 2001, the complex is undergoing stabilization in preparation for restoration and adaptive reuse. Overall, the shops exhibit a masterful combination of "form-follows-function" utilitarianism and aesthetically pleasing architecture. Architectural touches such as detailed brickwork, cast- and wrought-iron structural components, and rhythmic placement of doors and windows are repeated throughout the buildings.

The visual effect of the buildings and their surrounding viewshed still evokes a strong relationship to

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<sup>1</sup>The city of Martinsburg is located in West Virginia's eastern panhandle, approximately 100 miles west of Baltimore, Maryland, and 80 miles northwest of Washington, DC. Its population is about 20,000 in 2001. The crescent-shaped parcel of land (only a portion of which is nominated) consists of approximately 13 acres. The historic B&O Railroad lost its corporate identity in the early 1980s and became part of the CSX Corporation.

<sup>2</sup>An important note concerning directional references: While the rail line runs north-south at this location, the B&O main line was ultimately an east-west railroad. Historically, the B&O, its workers, and persons familiar with the railroad used a directional convention based on east-west terms when referring to B&O-related matters, regardless of the actual compass direction at a certain point along the line. For instance, in the following narrative if a train is said to "move west from the Martinsburg shops," it is actually traveling north in true compass terms; likewise, the Martinsburg "West Roundhouse" (its historical name) would be, if cardinal points were followed literally, the "north roundhouse." An effort has been made to minimize confusion between cardinal points and "B&O east-west" in the narrative, but at times the reader must rely on the narrative context surrounding directional references.

<sup>3</sup>The shops, depot, and numerous B&O-related buildings and structures in the area are listed in the National Register of Historic Places as *Baltimore and Ohio and Related Industries Historic District*. In 2001, the complex was recognized by the American Society of Civil Engineers with an ASCE Historic Civil Engineering Landmark designation. The depot was constructed ca. 1849 as a hotel by a private individual. After the B&O's own depot was destroyed in the Civil War, the railroad leased (and in 1866 purchased) this building and thereafter operated it as a combined depot/hotel. The depot was purchased from CSX by the city of Martinsburg in the mid-1990s and underwent restoration and the addition of a new wing. In 2001, the depot is called the Gaston Caperton Intermodal Transportation Center and is used by rail passengers and a private business. The building's fabric has been heavily altered since the periods of significance (1866 and 1877) encompassed in this nomination. Also, while portions of the building played a role in the Great Rail Strike of 1877, it does not relate to the technological significance of the 1866 shop complex. For these reasons it is not included in this nomination. The downtown commercial area is listed as a separate National Register of Historic Places historic district.

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nineteenth-century railroading and industrial development (photo 1).<sup>4</sup> The three 1866 shop buildings, while superficially deteriorated, maintain their overall historic appearance and dominate the scene. However, some secondary nineteenth-century buildings and wayside structures that once existed in the immediate area (a sand house, a coal bunker, a water tank, penstocks, miscellaneous storage sheds, and an oil house<sup>5</sup>) were removed or relocated as the shops and yards evolved--a common occurrence in railroad operations. Most notably, one large building--the East Roundhouse, built in 1872-73 just south of the Car Shop--was destroyed by fire on May 14, 1990. The East Roundhouse's concrete floor and standing portions of the brick sidewalls remain within the nomination boundary, and are considered a non-contributing resource. There is also a small, rectangular, twentieth-century building (which housed a metal-cutting saw) between the East Roundhouse ruins and Car Shop and inside the boundary, but it is considered a non-contributing resource.

While the main tracks still follow the B&O's original 1842-constructed grade (approximately 75' west of the shops), the secondary track layout around the shops is gone. These tracks and spurs were scrapped by CSX in the late 1980s and today the site is surrounded by flat, graveled areas. In 2001, a short section of track was re-laid outside of the West Roundhouse and a historic B&O caboose (ca. 1930) put on display. The two-track main line (and a passing siding for the depot) west of the shops (and outside the proposed NHL boundary) is still heavily used by freight and passenger trains. A chain-link security fence erected in 1999 surrounds the site.

The Historic American Engineering Record documented the complex in 1970, focusing on the roundhouses. Figures 3-7 show the West Roundhouse drawings.

**The Machine and Woodworking Shop**

The Machine and Woodworking (M&W) Shop is a rectangular, two-story, red-brick building (photos 2-3). It is 184' long and 60' wide, with its long axis lying on an approximate northwest-southeast tangent.<sup>6</sup> The building's facade is pierced by windows and doors on all sides, including railroad rolling-stock doors on the north and south gable ends. The building has a ridge roof covered with deteriorated twentieth-century asphalt paper.<sup>7</sup> Originally, a rectangular ventilation "lantern" approximately 10' tall and topped with a weathervane was centered on the roof peak, but was removed in the early twentieth century. At the south gable end (east of the rolling-stock door) is a small, rectangular, one-story brick addition (approximately 10' x 10', photo 4).<sup>8</sup> Along

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<sup>4</sup>More railroad-related buildings in the historic district, most notably two late nineteenth-century freight houses, a number of masonry culverts and retaining walls and two short bridges are within a half-mile of the shops. While enhancing the viewshed and historical tone, they post-date the periods of national significance encompassed in this nomination. Numerous other small railroad-related structures built within the last fifty years exist outside the nomination boundary.

<sup>5</sup>The oil house, built in 1866, was located northwest of the Machine and Woodworking Shop. It was a small, single-story brick structure which mimicked the architectural style of the three other 1866 buildings. The oil house was removed ca. 1910.

<sup>6</sup>These are the measurements of the core structure--additions not included. Measurements are from: John Hankey, "The Baltimore and Ohio Railroad Martinsburg Shop Complex Historic Structure Report," prepared for The Berkeley County Roundhouse Authority, August 2000; and *Baltimore and Ohio Railroad: Martinsburg Repair Shops* (Historic American Engineering Record, WV-1, 1970). Measurements not represented in these sources are approximated.

<sup>7</sup>The roof is sheathed with 1"-thick boards. The cornice overhangs 3', with 8"-tall crown molding, 4" x 4" outriggers, and tongue-and-groove board soffits. The roof is pierced by one small chimney on each side of the roof, in different positions than an early (ca. 1870) photo shows. This photo also shows three other small metal chimneys located on the west slope, and three other similar chimneys were probably located on the east slope. The roof covering is not original, and certain details were removed at an unknown time. On the north end, the original 3' overhang was removed and the roof made nearly flush with the gable wall. On both ends, the original cornice returns were removed. The current roof materials date to the twentieth century.

<sup>8</sup>This was the "plant manager" office, accessible via a door in the south wall from the interior office in the southeast corner of the building.

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the east facade's southern portion there are two small one-story additions--the southernmost of brick and sheet metal (approximately 10' x 50'),<sup>9</sup> the northernmost of sheet metal only (approximately 7' x 7').<sup>10</sup> These brick additions were constructed between 1913 and 1919, while the metal portion was probably constructed post-1950. North of these additions are the minimal ruins of another small post-1950 brick addition which housed punch and shear machines.

The core building's facade exhibits near-exact symmetry and a rhythmic placement of window and door openings--although the twentieth-century additions on the south and east facades detract somewhat from this aspect. The east and west (184' long) facades are divided into fifteen bays.<sup>11</sup> All are window bays<sup>12</sup> except the 3rd, 8th, and 13th bays (numbered north to south), which possess swinging, double freight doors allowing materials to be transferred into the first-floor Machine Shop.<sup>13</sup> The middle (13th) bay has similar freight doors on the second level for loading material directly into and out of the second-floor Woodworking Shop via a hoist. This twentieth-century steel hoisting beam protrudes from above the west side door and continues through the width of the building's interior, mounted to the roof trusses. Along the facades, pilasters 26"-thick (located on 12'-4" centers) separate the bays, while the bays' brick infills are 22" thick.<sup>14</sup> A horizontal corbel extends along the facades between the first and second floor.

The north and south gable ends (60' wide) are each divided into five bays, with the 3rd (central) bay consisting of double rolling-stock doors on the lower level and double freight doors on the second level. Like the sidewalls, these bays are divided by pilasters, and the infills are pierced by large windows on both levels. Horizontal corbels extend along the facade between the first and second stories and above the second-story

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<sup>9</sup>The sheet metal section is undoubtedly newer than the brick section, as a portion of the sheet metal section encompasses another earlier, smaller brick addition built between 1913 and 1919. The addition is accessible from two locations in the building's southeast corner: the first-floor office and the shop floor. The southernmost addition (accessible from the main office) housed records, a locker area, and a single-stall restroom. The second, enclosed, brick section housed a five-stall restroom accessible only from the shop floor. The newer sheet-metal section enclosing the shop-floor restrooms was a boiler room accessible only through an exterior door.

<sup>10</sup>A vented storage shed for paints and chemicals accessible from the shop floor.

<sup>11</sup>Walls: The brick sidewalls are 31'-1" high to the roof truss bearings, with a 17'-4" tall first floor. The roof peak is 47'-6" high. The brickwork (common bond with a header course every 6<sup>th</sup> row) exhibits localized moisture damage and poor (or missing) repointing in many places--along with miscellaneous deteriorated metalwork, brackets, downspouts, electrical conduits and circuit boxes, compressed air lines, etc., mounted to the brickwork in the twentieth century, ca. 1920-1950.

<sup>12</sup>Windows and doors: Most of the window glazing is original, although the first floor's gable-end windows are twentieth century steel-frame replacements. A large percentage of window lights are broken or missing. Each second-floor window opening possesses twin nine-over-nine-lights-per-sash, double-hung windows centrally mounted in 8'-wide openings in the bays. The first-floor windows are centrally mounted in each bay, but are taller than the second-floor windows. On the east and west facades each window opening possesses a two-part window: the upper portion consists of twin, single-hung, fifteen-lights-per-sash windows, while the lower portions are twin, nine-over-nine, double-hung windows. On the gable ends, the second-floor windows have nine-over-nine-lights-per-sash, while the first floor's steel replacement windows have thirty-five lights mounted in one large sash, which has an operable center portion. Lintels are cast iron (original); corbels are each a single stone (original). Each swinging rolling-stock door is subdivided to allow opening of only the lower section of the door for low-clearance hand carts. Each door has twin nine-over-nine-light windows in its lower section, and twin twelve-light sashes in the upper section. In general, the window and door framing ranges in condition from excellent to deteriorated to, in some cases, missing. Many of the pedestrian wood doors and the large, swinging freight doors may be original. If not, historic photos indicate they are nearly exact copies of the originals. All first-floor openings are covered by twentieth-century steel "gates" mounted into the brickwork.

<sup>13</sup>Along the east side, the additions cover the first floor of five southern-end bays.

<sup>14</sup>The pilasters, while adding to the building's aesthetic quality, bear the weight of the interior roof trussing.

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windows. In each gable, an approximately 5'-diameter round window opening is centered in the 3rd bay--the gables' other four bays are solid brick. In the north facade's gable, the circular window's wood framing and panes are missing, but they remain on the south end. The brickwork on the gable ends is particularly dramatic, following the roofline's rise with dentilation set in relief (the dentilated brickwork extends approximately 4' out from the panel infill). Two courses of rowlock brickwork surround the round windows. Historically, entry to the second floor was provided by exterior wood steps built against the north gable end, leading up from the northwest corner of the building. The original wood steps were replaced by a steel version in the twentieth century, but the steel stairway was removed after the building's abandonment in the 1980s.<sup>15</sup>

The building's interior is dominated by open space (photo 5). The first-floor Machine Shop is completely unobstructed by roof supports. Three vertical steel I-beams mounted in the floor remain from twentieth-century hoisting cranes, but they are not structural support members. The shop floor is bisected longitudinally by a standard gauge railroad track. These rails enter through the building's north end rolling-stock doors, exit the south end rolling-stock doors, and proceed toward the West Roundhouse. A third rail which exists parallel to the standard-gauge track allowed narrow-gauge hand cars to be used along the same trackway. A short length of narrow gauge track also runs along the west side of the central track.

On either side of the M&W Shop's interior tracks, mounts for metal-working machines such as lathes, drill presses, metal shears, grinders, etc., remain in the floor, but the machines are gone except for a "rivet header" located against the west wall. The shop's original machinery configuration is unknown. Sanborn maps show that a 60-horsepower stationary steam engine and boiler originally sat in the southwestern corner. The original machinery was most likely powered by this engine via an overhead lineshaft/pulley-and-belt power supply system removed by the mid twentieth century. Other than the machinery mounts, the floor consists of tightly fitted wood blocks exhibiting localized water damage. In the southeastern corner is a "Pullmanesque" wood-framed office space with a curved northwest corner. The office walls are pierced by one doorway (in the west wall) and eleven closely spaced window openings with single-hung, one-over-one sashes.

Along the ceiling, fourteen mated pairs of 8" x 17"-thick, 58'-long, single-piece beams are evenly spaced to support the second floor. Along each beam, 1-3/4"-diameter wrought-iron suspension rods extend through the ceiling from the second floor (dividing the beams into thirds) and support the beams with cast-iron plates locked in place against their underside with nuts. These rods extend down from the roof trusses above the second floor and allow unobstructed first-floor space. The beams also support numerous twentieth-century electrical conduits, compressed air pipes, fluorescent light fixtures, and miscellaneous metalwork. Numerous steel I-beams (dates unknown) used for hoisting are mounted to the underside of the wood beams.

The second-floor is open except for a small office space in the southeastern corner and two small rooms (wood-framed) along the east wall, both likely added during the twentieth century. The open space is interrupted only by the wrought-iron rods hanging from the exposed roof trusses above. The rods pierce the floor and support the floor beams below. The room originally held wood-working machines. During the twentieth century it was filled with storage racks, but nothing remains.

The fourteen roof trusses are pairs of rough-sawn 8" x 17"-thick timbers, each with a tie-beam timber approximately 60' long, arranged in a wood- and wrought-iron queenpost truss layout. The wood beams are compression members, and the wrought-iron rods are tension members. The wrought-iron tension members are

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<sup>15</sup>This was evidently the only entryway to the second floor during the nineteenth century. Remains of a twentieth-century steel stairway remain on the east facade's southern end, leading to a second story-doorway built into a former window opening. In 2001 there is no functioning stairway to the second floor.

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attached to the wood components by rectangular cast-iron plates held in place by nuts threaded onto the rods. The truss bearing-ends are wedged into cast-iron shoes resting upon corbels extending from the facades' pilasters. At an unknown date, probably in the mid twentieth century, each truss was reinforced with a wrought-iron tension member added along the tie beam's lower surface and secured into a short, steel I-beam addition to the outer side of the bearing shoes. A turnbuckle along the rod allows for adjustment. Electrical conduits and ca. 1930 light fixtures are suspended from the trusses.

The roof trusses also support eight wood platforms, resting upon the tie beams, in the northwestern portion of the building. Another wood platform exists in the building's southwestern corner. These were used for storage.

Beneath the location of the former central roof lantern, in the uppermost portion of the trusswork, is a small platform that allowed access into the lantern--a ladder leads here from the lower portion of the truss.

**The West Roundhouse**

The West Roundhouse (photo 6) is a polygonal, sixteen-sided building with a diameter of 177' feet and a domed roof 68'-6" tall.<sup>16</sup> It houses a central 50' diameter turntable and (originally) sixteen locomotive bays. Viewed in elevation, the single-story brick facade<sup>17</sup> deceptively appears to support an asphalt shingle roof which slopes gently toward an encircling clerestory, above which a conical, bell-shaped roof slopes sharply up to a small ventilation cupola topped by a 15'-tall weathervane. With its striking silhouette, the West Roundhouse defines the site's historic role as a railroad complex--it is the heart of the site's character and historical significance.

The core building's facade exhibits rhythmic fenestration and functional--yet aesthetic--architectural touches, and generally maintains its overall historical appearance relating to the period of significance. However, a twentieth-century connection between the roundhouse's southern facade and the Car Shop altered the southern facade's original first-floor appearance. This connection covers bays 1, 15, and 16. Also, a small, single-story brick addition (ca. 1910, 17' x 20') with a ridge roof, is appended to the 3rd bay's facade (photo 7). The roundhouse's brickwork is deteriorated in many places, exhibiting localized water damage, missing bricks, and twentieth-century brick repairs and repointing.<sup>18</sup> Miscellaneous metal brackets, downspouts, conduits, and electrical connections added throughout the twentieth century are attached to the brickwork.

The brick facade underwent modifications during the twentieth century affecting portions of the fenestration--windows were altered into pedestrian/handcart doorways in some cases, bricked-in in others, and the addition of the connection to the Car Shop covered bays 1, 15, and 16. The sixteen bays were originally divided into only two types: window bays (totaling twelve) and locomotive door bays (four). Both types exhibited a tripartite collection of evenly spaced openings with the central opening framed by pilasters topped by a segmental arch. Window bays<sup>19</sup> originally possessed three double-hung, sixteen-over-sixteen window units, while the

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<sup>16</sup>Measurements are of the original core structure only. For discussion purposes, the sixteen bays are numbered starting from the south bay (bay 1) which connects to the Car Shop and continuing clockwise around the building to the 16th bay. This numbering convention apparently began with the 1970 HAER report--the historical numbering convention is unknown.

<sup>17</sup>Walls: Solid red-brick bearing walls, 19'3" high, laid in common bond with a bonding course every 8th row and topped with a dentilated brick corbel. Brick pilasters and corbels protruding approximately 4" outline each bay section. The center third of each bay section is framed by pilasters topped by a segmental relieving arch. The relieving arch (or "jack arch") would support the wall if a locomotive accidentally ran through it. Pilasters are 17" thick and infill is 13" thick.

<sup>18</sup>The bricks are handmade and semi-porous. Where bricks were exposed to excessive water, either by failed gutters or poor drainage, localized areas are damaged or have disintegrated.

<sup>19</sup>Windows: Bays 3, 4, 5, 6, 8, 9, 10, 11, 12, 14, 15 and 16 were originally window bays. Bays 4, 5, 6, 10, 12, and 14 remain unaltered, while bays 3, 8, 9, 11, 15, and 16 have window openings modified into doorways or window openings bricked-in (twentieth century alterations). Openings have cast-iron sills and rowlock brickwork lintels. On original windows, many lights are broken, but



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locomotive-door bays<sup>20</sup> exhibited large double-doors in the center, with a window opening on each side. The remaining window units (except for the 16th bay's--a two-over-two replacement) are original. Two of the three remaining locomotive doors (bays 2 and 13) are original.

The roof is covered with asphalt shingles installed in 1983.<sup>21</sup> Originally (and during the period of significance), the roof exhibited a combination of soldered metal sheeting and slate tiles. Slate tiles covered the cupola and dome except for soldered metal sheeting on the lowest portion of the dome (just above the clerestory). The low shed roof was a combination of slate tiles (on the upper portion) and soldered metal sheeting on the remainder. The original roof covering was first replaced ca. 1920 by asphalt paper. During this overhaul the original cupola was replaced by the current smaller version. The cupola is topped by a nearly 15'-tall weathervane/lightning rod, salvaged during the overhaul and probably original, braced by guy wires anchored to the cupola roof.

Inside the West Roundhouse, the open floorspace around the central turntable<sup>22</sup> and the dome's sheer vertical height over the turntable dominate the view (photo 8). Originally an open floorspace of over 20,000 square feet, nine of the original locomotive bays were, ca. 1920, filled by wood-frame construction to create a two-

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most of the original framing remains. The windows are wood-framed, 4'-1" wide x 8'-8" tall, double-hung with sixteen-over-sixteen lights per sash. The first floor's window openings are, in 2001, covered with plywood. The six original bays have a central window framed by pilasters topped by a segmental arch protruding 4" with another window on each side. Bays 8, 9, and 11 have twentieth-century, hinged, wood, double-doors for personnel and handcars. Each of the roof's sixteen clerestory bays contains seven single-hung sashes exhibiting two-over-four lights.

<sup>20</sup>Doors: Locomotive doors are situated in the 2nd, 7th, and 13th bays, with bays 2 and 13 possessing original doors. Bay 1 originally had a locomotive door, but it was removed and the opening altered when the roundhouse and Car Shop were connected. Original doors are wood, divided down the middle into two sections, and have secondary (hinged) double-doors for personnel and handcars. Each door section rolls sideways on two 12"-diameter cast-iron rollers riding a horizontal wood beam mounted above the opening. The doors and rollers are situated against the interior walls so the door slides parallel and adjacent to the wall. Each locomotive door is fenestrated in its upper half by four single-hung windows (two over two), with each window containing three-over-three lights. The uppermost windows have an arched head concentric with the segmental brick arch above. Original door openings are framed by pilasters topped by a segmental arch (protruding approximately 4") similar to those in the window bays. Metal gates are mounted into the brickwork in front of the original doors. The 7th bay was the last operating locomotive entrance and was enlarged by the mid-twentieth century to facilitate larger locomotives. During enlargement the pilasters were removed, the segmental arch was replaced by a horizontal steel beam, the brickwork immediately around the door was rebuilt, and metal-sheathed doors (with two small windows in each door panel) were installed.

<sup>21</sup>The 3' roof overhang is supported by a wooden bracket returned to the brickwork at the corner of each bay.

<sup>22</sup>The pit is approximately 8' deep. The lower portion of the turntable pit's masonry is likely a remnant of the 1848 turntable destroyed by Stonewall Jackson's troops during the Civil War. The pit walls are a composite of stone, brick, and concrete. Drainage pipes lead off from the turntable pit floor. A single railroad rail mounted upon a mid-level step in the pit's masonry supports rollers mounted to the outer ends of the turntable. The turntable's central support post rotates upon a bearing journal incorporating large conical bearings. The central support unit is fitted into an approximately 4'-diameter, 3'-thick, circular stone (possibly recycled from the pre-Civil War roundhouse). This round stone in-turn sits on a square stone floor mount (also possibly recycled from the pre-Civil War roundhouse) embedded in the floor. The turntable's "bridge" consists of two 50'-long riveted fishbelly-shaped (the upper flange is horizontal, the lower flange thin at the ends and thick at the middle) steel girders interconnected by steel bracing. The bridge is probably not original, likely dating to the early twentieth century. It was probably manufactured ca. 1900, and relocated here after use at a different location. The remains of a twentieth century winding engine (used to pull unpowered rolling stock onto the turntable) are mounted between the girders. Wood ties resting on the girders' upper flanges in turn support the tracks. There is wood flooring between the tracks and extending for approximately 3' on either side of the rails. A small stairway leads off the turntable deck and down into the pit. The turntable's girders also carry a twentieth-century metal support framework (three small I-beam trusses attached perpendicularly across the girders) extending out to the pit wall. A utilitarian metal safety railing is attached to this framework. The framework and railing, being an extension of the turntable's girders, rotates with the turntable. Precisely balanced, the turntable is manually operated and requires little effort to turn.

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story honeycomb of storage and work rooms.<sup>23</sup> The floor (probably not original) is concrete with inlaid standard-gauge railroad track (bays 4, 11, and 16 exhibit standard gauge only; bays 1, 2, 5, 7, 8, 9, and 13 have a third rail for narrow-gauge handcars) radiating out from a central turntable and into all bays except bays 3, 6, and 11. The floor and tracks probably date to ca. 1920-30. Bay 4 has a mid twentieth-century weight scale mounted in the floor. Bay 13 has a small, rectangular, concrete cistern. Bays 11, 14, 15, and 16, have approximately 4'-deep "drop pits" (date unknown) between the tracks where workers inspected and maintained locomotive undercarriages. In bays 1, 2, 14, 15, and 16 there are non-structural, twentieth-century steel beams used to support overhead hoists.<sup>24</sup> The interior brickwork carries an assortment of twentieth-century metal conduits, electrical connections and switch boxes, compressed-air pipes, miscellaneous metal brackets and fixtures.

Only from inside the roundhouse can one see the intricate cast-iron framework that supports the building's roof (photo 9). The iron framework, in plan view, resembles a spider's web. The octagonal support columns are aligned in sixteen rows radiating from the central turntable and interconnected by lateral beams. Twentieth-century steel electrical conduits and compressed-air pipes weave through the iron framework. Hanging from the ironwork over the bays is a random combination of ca. 1930 bulb and ca. 1980 fluorescent-tube light fixtures. There are also occasional repair "splints" added to the original frame. The iron framing, for discussion purposes, can be divided into two major sections, the portion supporting the shed roof and the portion supporting the central dome.<sup>25</sup>

The lower shed roof covering the engine stalls is supported by vertical, cast-iron columns (the exterior walls support only themselves and the outermost few feet of the lower shed roof). These octagonal, hollow columns are placed between engine stalls in three concentric rings surrounding the turntable. The columns in each ring are laterally connected by cast-iron trusses (or girders). Each lateral truss is a single casting with an arched bottom flange and flat upper flange, with the web pierced by triangular openings. The upper flange supports longitudinal, 3" x 6" wooden rafters which in turn support the wood roof sheathing. Rafters are attached to the ironwork with wrought-iron clips encircling a small "lip" cast into the beams nailed to the wood.

The outermost (largest diameter) iron ring, located 11' inside the exterior brick wall, is structurally independent from the remainder of the iron framework. The two innermost column rings are structurally connected to the

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<sup>23</sup>The wooden additions do not connect into, or support, the cast-iron framework (the upper ends of the vertical framing are nailed into roof rafters). These wood-frame additions are roughly built and were probably constructed in two phases. First the railroad built the units in bays 3, 4, 5, and 6 (ca. 1915). Bays 8, 9, 10, 11, and 12 were likely enclosed by ca. 1930. The wood sections have handcart openings leading to the turntable, and randomly placed windows overlooking the turntable. The wood-frame areas contain wood shelves and storage bins and numerous secondary rooms. Deteriorated stairways lead from the first floor to the second floor.

<sup>24</sup>The steel hoisting beams do not connect into, or support, the cast-iron framework. The vertical beams are set into the floor beside the main inclined iron columns, and a single horizontal beam spans the width of each locomotive bay just below the lateral cast-iron bracing. These steel hoisting units were probably built in phases. Bay 14 possesses a hoisting beam mounted on two steel riveted-lattice pylons (ca. 1910); bays 15, 16, and 1 and 2 use vertical steel I-beams (ca. 1930); bay 5 has a single vertical I-beam (late twentieth century) located near the exterior wall supporting a pivoting horizontal hoisting beam. The hoisting frames in bays 14, 15, 16, 1 and 2 are tied back into the exterior brick walls by horizontal steel I-beams which actually pierce the wall and extend a few inches outside the building.

<sup>25</sup>All major cast-iron structural members are connected with mortise-and-tenon joints, held together by pins (threaded on both ends and secured with nuts). All of the approximately 8"-diameter cast-iron columns exhibit a Doric base and capitol style. Each column rests on a stone base mounted in the floor. The columns are cast in segments, and each segment exhibits an identification letter cast into its surface to aid in the framework's assembly. In engineering terms, the cast-iron framework is built wholly of compression members. The structure's conical shape inherently applies compressive forces on the various columns and braces, helping lock the mortise-and-tenon joints into place and ensuring the building's stability.

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central framing system, including the inclined columns supporting the central conical dome. Vertical columns in the second ring (74'-10" from the turntable's center) share their bases with the inclined columns, while the innermost ring of vertical columns (62' 7-1/2" from the turntable's center) attach directly to the inclined columns at a point 15'-8" above the roundhouse floor.

The central dome is supported by sixteen columns inclined at a 42-degree angle (photo 10). Each inclined column is made up of four sections connected by mortise-and-tenon joints. The inclined columns are laterally connected at three levels by horizontal cast-iron bracing beams similar in cross-section to the inclined columns. Curved cast-iron brackets reinforce the connections between the inclined columns and horizontal braces at these three levels. Each bracket is a single solid casting. During the twentieth century, the lowest-level lateral beams in bays 3 and 7 were replaced by steel railroad rail and the cast-iron support brackets were removed. This was done to facilitate larger locomotives.

The tops of the inclined columns are laterally connected as well, but with a different type of structural component than the lower levels. Each topmost lateral brace is a single casting combining an octagonal, hollow beam as its uppermost flange, and a solid, arched lower flange. The web is pierced by both triangular and circular openings. These components are connected to the inclined columns similarly to the other lateral braces, i.e., pinned mortise-and-tenon joints. The result is a crown of sixteen iron arches forming the upper boundary of the iron framework.

The top of the iron framework supports a wood-frame cupola created by a radial system of triangular wood trusses. Large, twin wood beams span the distance across the circle's diameter. A center post rises from the beams to the roof's apex, to which the uppermost framing of the cupola is joined. The cupola is not original, having replaced a much larger cast-iron-framed ventilation cupola after the roundhouse was removed from locomotive service, ca. 1920.

The frame's numerous cast-iron lateral braces support wooden rafters running longitudinally between the main inclined columns. The plywood roof sheathing is bare on the interior (except for the remains of a light coat of ca. 1975 white spray paint) and covered with asphalt paper and shingles on the exterior. The sheathing is nailed to the wood rafters, which are "clipped" to the ironwork. The plywood roof dates to ca. 1975, and replaced the original wood-board roof. The clerestory bay is wood framing attached to the rafters. Wood beams (approximately 4" x 12") laterally bridge the main iron columns, anchoring the clerestory framing and rafters.

**The Car Shop**

The Car Shop (photo 11) is a rectangular, one story, red-brick building 100'-9" wide by 200'-10" long, with a ridge roof and gabled ends.<sup>26</sup> The building's long axis lies on an east-west tangent, with the building's west gable facing the railroad's main line, and the east gable facing Tuscarora Creek. Windows pierce the facades on all sides. Three rolling-stock doors are located in each long facade, and a single rolling-stock door is centered in each gable-end facade. The building was connected, ca. 1915, to the West Roundhouse by brick walls constructed between the southwest corner of the building and the roundhouse. This short intervening connection created four small rooms and a rolling-stock passageway, and covers the western half of the north facade. The remains of a ca. 1940 brick-walled connection to the (former) East Roundhouse, which created two small rooms, exist at the west end of the south facade. A small, rectangular, half-story framed addition (approximately 12' x 10') dating to the early twentieth century exists near the center of the south facade. Having been damaged by water penetration in the late twentieth century, the roof sheathing, secondary rafters,

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<sup>26</sup>Measurements are of the core structure--additions not included.

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and trusses have been undergoing stabilization since early 2000.<sup>27</sup>

During the period of significance, an approximately 40' long, elevated, skylight/ventilation monitor (topped by a ridge roof and two short metal chimneys) existed along the roof peak at the building's east end, but was removed ca. 1920.<sup>28</sup> Also, sixteen short brick chimneys (eight per side) pierced the roof along the north and south eaves, but only eleven superstructures remain.<sup>29</sup> Four other similar brick chimneys originally existed along the east gable end, but none of their superstructures remain. All of these brick chimneys had flues (which remain) hidden inside the facades' pilasters. Two round metal chimneys (not original) pierce the roof's north slope in the building's easternmost section. At the roof's east end, two horizontal steel I-beams (date unknown) pierce the roof and are tied into the east gable wall and the interior firewall. These brace a vertical I-beam standing beside the southeastern facade and used for an unknown purpose.

Stylistically, the Car Shop shares many architectural features with the Machine and Woodworking shop, exhibiting rhythmic fenestration and detailed gable ends. The north and south facades are rhythmically divided into thirteen bays.<sup>30</sup> All are window<sup>31</sup> bays except the (numbered west to east) 2nd, 7th, and 12th, which are pierced by rolling-stock doors. The bays are divided by 26"-thick pilasters, and 22"-thick infills. Alternating pilasters enclose small chimney flues originally used for pot-belly stoves located along the shop floor. However, the twentieth-century connection to the West Roundhouse on the north facade covers the western six bays. As a result of this addition, four window bays (the 1st, 3rd, 4th, and 5th) are bricked in, and the 6th window bay was converted into a doorway. The south facade's connection to the (former) East Roundhouse hides the 1st window bay (which was converted to a doorway), while the small half-story addition midway along the facade partially covers the 8th and 9th bays and their intervening pilaster.

Each gable end is divided into seven bays, with large rolling-stock doors centered in the central (4th) bay, and window openings piercing the first floor of the 1st, 2nd, 3rd, 5th, 6th, and 7th bays. Each gable also has upper-level window openings in the 3rd, 4th, and 5th bays. The central (3rd) bay exhibits a Palladian-style window

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<sup>27</sup>Approximately 20 percent of the rafters and 25 percent of the sheathing were replaced with equivalent size, species, and grade wood as previously existed. The outermost covering was originally slate tile and probably remained so into the early twentieth century. The new covering installed in 2001 consists of vinyl tiles molded to replicate slate.

<sup>28</sup>The outer roof underwent at least two major overhauls during the twentieth century. Ca. 1920, the raised skylight/ventilation monitor structure was replaced by approximately eight closely spaced, metal, ventilation chimneys. Four similar metal ventilation chimneys were installed--evenly spaced along the remainder of the roof peak. These metal chimneys were removed by ca. 1960, leaving no chimney openings along the roof peak. Ca. 1950, the roof's secondary rafters (and probably the entire sheathing) were replaced.

<sup>29</sup>Five brick chimneys remain on the north slope, six on the south. One brick chimney superstructure in the building's southeast corner (related to the blacksmith shop) was replaced during the twentieth century by the existing round metal chimney. Originally, the brick chimneys were topped by vaulted brickwork--none of these vaulted coverings remain.

<sup>30</sup>Walls: The sidewalls are 22'-8" tall, and the gable-end peak is 48'-8" high. The brickwork (common bond with a header course every 8th row) exhibits external localized moisture damage and deteriorated pointing--along with miscellaneous twentieth-century metalwork, brackets, downspouts, electrical conduits and circuit boxes, etc., mounted to the brickwork. Inside, the walls are similarly adorned with twentieth century metalwork, electrical conduits, and circuit boxes.

<sup>31</sup>Windows and doors: Most of the first-floor windows are twentieth-century replacements. The replacements are fifteen-over-fifteen-light, steel-frame windows. In the north facade, the 1st and 6th bays retain original windows, while in the south facade the original 1st-bay windows remain. The original windows are twin, double-hung units with fifteen-over-fifteen-lights in each sash. The original large, sliding, rolling-stock doors are twin doors, made of wood and horizontally divided into three levels. The upper level has an arched opening filled by four nine-light, single-hung sashes; the middle level consists of four rectangular nine-light, single-hung openings; the lowest level has secondary handcart doors.

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opening with additional arched window openings on either side. Above the Palladian window in the central bay is an approximately 6'-diameter round window opening.<sup>32</sup> The circular window is encircled by two courses of rowlock brickwork. In both ends the circular windows were replaced by a vent panel during the twentieth century.

Like the M&W shop and the West Roundhouse, the Car Shop's interior (photo 12) is dominated by open space; however, an interior brick wall bisects the Car Shop approximately 45' from the east end (between the 10th and 11th bays). An original feature, this firewall divides a blacksmith shop in the east end from the rest of the building.<sup>33</sup> In the main shop room, a small, rectangular, wood frame office space (ca. 1960s) is located along the south wall, built against the 8th and 9th window bays.

The shop's original machinery configuration is unknown, although an 1885 Sanborn map shows a 60-horsepower steam boiler/engine in the building's northeast section within the blacksmith's shop. This power unit was replaced by two steam boilers ca. 1910, which were in-turn most likely removed by the mid twentieth century.

The blacksmith shop (photo 13), located within the 11th, 12th, and 13th bays, accounts for many features originally present on the roof's eastern portion (the numerous chimneys and skylight/ventilation monitor) as well as the more modern metal chimneys still present at this end of the building. Two forge furnaces (of unknown date) remain in the blacksmith area (one in the northeast corner, the other in the southwestern corner). There is also a metal chimney-support stand in the room's north half topped by a round metal flue that extends upward and pierces the ceiling. A fan which forced air through metal pipes along the walls and into the forges remains on a metal-bracketed shelf mounted to the shop's west wall. Vertical I-beams (twentieth century) bracket the east-west entries into the blacksmith shop. These four vertical beams support two horizontal I-beams running east-west just below the roof trusses. The horizontal beams in-turn support a set of smaller I-beams (running north-south, with hoisting blocks still attached). While the horizontal I-beams aided in hoisting heavy material in the shop, they also helped support the two trusses over this room. In the blacksmith shop's southern section, there is a rectangular concrete cistern in the floor used to hold water for quenching hot steel. There is an approximately 5' x 5' hole in the floor where a large steam hammer (now sitting disassembled beside the hole) was mounted.

The building's floor is a combination of concrete machinery mounts, tightly fitted wood blocks (exhibiting areas of water damage), bricks, and railroad tracks, all of unknown date. A narrow-gauge railroad track (with rails inset in the floor) runs longitudinally along the building's east-west axis from the east gable's rolling-stock door, through the opening in the firewall and into the blacksmith shop, and out through the west gable's rolling-stock door. In the shop's western portion a short passing track parallels (and then connects into) this "main" east-west track. Two sets of tracks bisect the building north to south between the rolling-stock doors located in the 2nd and 7th bays.<sup>34</sup> The 2nd bay track connected the two roundhouses, and possesses two sets of closely

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<sup>32</sup>On the gable ends' first floor, the windows are twentieth-century steel replacements like those along the facades. However, on both ends the second-level gable windows are original. The Palladian-style window unit consists of four double-hung windows. The outer two exhibit twelve-over-twelve-lights per sash, while the inner two (with an arched lintel) exhibit twelve-over-nine-lights per sash. The window units in the 3rd and 5th bays are each twin, double-hung, twelve-over-nine windows with arched lintels.

<sup>33</sup>This is a 17'-thick load-bearing firewall which extends up to the roof, and located where otherwise a roof truss would exist. Originally, the wall was pierced in the center by an arched rolling-stock door, but at an unknown date (probably in the early twentieth century) the upper half of the opening was bricked in and this is now an approximately 6'-6" wide x 7' tall rectangular opening. Hardware for a hanging roller door is present, but the door is missing.

<sup>34</sup>There was no north-south track between the 12th bay even though there are rolling-stock doors in this bay. Also, there is a

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spaced rails which allowed both narrow- and standard-gauge rolling stock to pass through the western part of the building. The 7th bay track, which bisects the center of the building north to south between the 7th bay's rolling-stock doors, is a narrow-gauge track. In the shop floor's center, at the meeting of the 7th bay north-south track and the east-west track running between the gable ends, there is a manually operated narrow-gauge handcart turntable, approximately 5' in diameter and possibly original. Over a dozen handcarts still remain in the building.

While slightly taller than the M&W shop, the Car Shop is technically a single-story building. This is because over half of the Car Shop's height is taken up by the eleven massive wood-and-iron roof trusses spanning the 96' of open interior between the north and south facades (photo 14). The trusses are spaced evenly along the building's length, although the distance between trusses is slightly wider over the rolling-stock bays. Brick corbels built into the top of each pilaster support the ends of the roof trusses. The trusses are wood-and-iron modified-queenpost trusses with wrought-iron vertical tension members, and wood horizontal and diagonal compression members.<sup>35</sup> The truss bearing ends are wedged into cast-iron shoes resting upon the brick corbels, and the original panel members connect into cast-iron shoes and brackets along the surfaces of the chords. The vertical iron tension rods are locked against the chords' outer surfaces by nuts threaded onto the ends of the rods and tightened against a cast-iron support bracket.

Like the trusses in the M&W shop, the Car Shop trusses were reinforced during the twentieth century. In the Car Shop's case, two wrought-iron tension bars were added along the sides of each tie beam (the lower chord). These wrought-iron rods have adjusting turnbuckles, and are anchored against the truss ends' original cast-iron shoes by nuts tightened against a short length of steel rail. The tie beams support numerous hoisting rails used to lift and move heavy materials, all apparently dating to the twentieth century, as well as lesser electrical conduits, ca. 1930 lighting fixtures, and wood-plank catwalks and storage platforms. The blacksmith room's two roof trusses were further reinforced (by the mid-twentieth century) with extra diagonal wood braces. Circa 1950, the roof's secondary rafters (and very likely the roof sheathing) supported by the trusses were replaced. The trusses, secondary rafters, and roof sheathing, as noted above, are undergoing restoration in 2001.

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short, unconnected narrow-gauge track that parallels the 2nd bay track

<sup>35</sup>Chords and secondary diagonals are wood, verticals are wrought-iron rods. On each truss, the lower chords are made up of two approximately 8" x 12"-thick timbers, with the single (approximately 8" x 8") top chord mounted between the outer lower chord members. Along the length of the truss, diagonal (wood) secondary members are single pieces, approximately 8" x 8" inches. Seven vertical iron tension rods (approximately 1" diameter) divide each truss into eight panels. The trusses over the blacksmith shop have wood vertical members on either side of the two central panels, where on the other trusses these are wrought-iron rods. This was probably the result of a twentieth-century modification.

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**8. STATEMENT OF SIGNIFICANCE**

Certifying official has considered the significance of this property in relation to other properties:  
 Nationally: X Statewide:    Locally:   

## Applicable National

Register Criteria: A X B    C X D   

## Criteria Considerations

(Exceptions): A    B    C    D    E    F    G   

NHL Criteria: 1, 4

NHL Criteria Exclusions: N/A

NHL Theme(s): V. Developing the American Economy  
 5. Labor organizations and protests

VI. Expanding Science and Technology  
 2. Technical Applications

Areas of Significance: Transportation  
 Engineering  
 Architecture  
 Invention  
 Social History

Period(s) of Significance: 1866-1872 (engineering), 1877 (social history)

Significant Dates: 1866, 1877

Significant Person(s): N/A

Cultural Affiliation: N/A

Architect/Builder: Fink, Albert (West Roundhouse), Niernsee, Johann (Machine/Woodworking Shop  
 and Car Shop)

NHL Comparative Categories: XIV.E Transportation: Railroads  
 XVIII.B Technology: Transportation  
 XVIII.H Technology: Construction  
 XXXI.H Social and Humanitarian Movements: Labor Organizations

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**State Significance of Property, and Justify Criteria, Criteria Considerations, and Areas and Periods of Significance Noted Above.****Statement of Significance**

The B&O Railroad Martinsburg complex is one of the most important railroad sites in the United States. It possesses national significance in not one, but two distinct areas.

First, the shops are a unique example of innovative nineteenth-century engineering and industrial architecture. In particular, the West Roundhouse possesses an early cast-iron framing system devised by renowned nineteenth-century civil engineer, railroad manager and economist Albert Fink. It is also the oldest fully covered roundhouse in the United States. The two auxiliary shop buildings, the Machine/Woodworking Shop and Car Shop, were designed by nineteenth-century architect Johann Niernsee and are among the B&O's most significant remaining structures from the post-Civil War period. Individually the buildings are significant from an engineering standpoint, but as a group these three structures form a stellar collection of nineteenth-century railroad buildings.

Second, the shops played a major role in the first days of "The Great Railway Strike of 1877," a pivotal episode in American labor history. Following an aborted work stoppage by a handful of B&O employees in Baltimore on the morning of July 16, 1877, railroad workers at the Martinsburg shops stopped work en-masse. The killing of a striker outside the Martinsburg Shops the next morning helped spark and solidify the violent nationwide protest against the low wages paid industrial workers. At Martinsburg, the strike unfolded in and around the shops, yet the complex escaped the destruction that occurred at many other railroad centers where strike activity occurred.

The combination of two areas of significance requires an extended examination of the complex's importance. In the narrative below, the technological significance of the shops is discussed first and the labor significance of the shops second.

**Introduction**

Chartered in 1827, the Baltimore and Ohio Railroad was the first common-carrier railroad in the United States and has routinely been given the accolades of "America's first railroad" and "America's railroad university" by historians since the late nineteenth century. In 1827 Baltimore's wealthy merchants formed the B&O to answer the economic threat suddenly produced by New York's Erie Canal (finished in 1825) which had become an immediate success by bridging the Appalachian Mountains and opening up trade to the Ohio and Mississippi river valleys. Soon, most eastern port cities began making plans for east-west links to the early frontier. Most considered canals following major east-west river valleys as the only solution, but Baltimore--lacking a suitable water route west from the city's immediate environs and threatened by the imminent construction of the Chesapeake and Ohio Canal along the Potomac River<sup>36</sup>--put its faith in the newest technology of the time: the railroad. The newness of railroads in general combined with the incredibly difficult terrain presented by the central Appalachian Mountains made the Baltimore and Ohio "mainstem" (as the original east-west main line was called) a hotbed of technological innovation. It was one of the largest civil engineering projects of the mid-nineteenth century and the B&O's innovations in track, rolling stock, locomotives, and civil engineering are

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<sup>36</sup>Once the B&O reached the Potomac River Valley in the early 1830s some 70 miles west from Baltimore, it followed the Potomac west toward Cumberland often side-by-side (and in competition) with the C&O Canal. The C&O Canal terminated in Cumberland on the eastern side of the mountains, never reaching its goal of the Mississippi River system.



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legendary. By 1850, American and European engineers viewed the B&O as one of the world's foremost "case studies" in railroad construction. Construction began on July 4, 1828, and the B&O reached its destination (first stated in 1827) of Wheeling, West Virginia<sup>37</sup> on the Ohio River in 1852--twenty-five years after its inception. The B&O was constructed in three phases: Baltimore to Harpers Ferry (1828-34), Harpers Ferry to Cumberland (1841-42), and Cumberland to Wheeling (1849-52).<sup>38</sup> Most relevant to this nomination, during the 1850s and 1860s, the B&O was in the forefront of using structural cast and wrought iron for bridges, trestles, roof systems, tunnel linings, and (as illustrated by the Martinsburg's West Roundhouse) roundhouse framing.

From the moment the railroad reached Martinsburg on May 21, 1842 the town was vitally important to the B&O. It was the largest town along the B&O between Harpers Ferry and Cumberland and provided much-needed passengers and freight (especially agricultural products) for the new line. Located 100 miles from Baltimore, it became a "division point," and during much of the steam railroading era train crews from Baltimore were replaced here.<sup>39</sup> In 1842 the B&O erected a small depot. By 1849, William Kroeson had built a hotel to cater to the passengers and railroad employees, a portion of which is incorporated into the present-day depot located across the tracks from the shops.

In 1848, the railroad began expanding facilities at Martinsburg making it the central maintenance area between Baltimore and Cumberland. Expansion began with a rectangular engine shed in 1848 on the site of the present shops. The purchase of additional acreage around the nominated buildings occurred in 1852, with the subsequent construction of a machine shop. A circular roundhouse was constructed (on the site of the present West Roundhouse) in 1854.

With the onset of the Civil War, the B&O (and consequently Martinsburg) became a strategic target, as the railroad traversed the east-west boundary between the North and South. The original Martinsburg railroad shops, roundhouse and depot were destroyed by Confederate troops under the control of Stonewall Jackson in mid-1861. During the famous raid, Jackson's troops commandeered over a dozen B&O locomotives, outfitted them with "road wheels" and, using horses, towed them over the dirt roads into Virginia for use on the South's railroads. Kroeson's Hotel was spared from destruction, and the B&O immediately leased it for use as a depot/hotel. Making the best of the situation until the war's end, the B&O used the still-functioning turntable within the charred remains of the first roundhouse. On a political level, West Virginia's eastern panhandle was, in 1863, incorporated into the new state "West Virginia" largely because of the B&O's presence in Berkeley, Hampshire, Jefferson, Morgan, and Mineral counties.<sup>40</sup>

While during the Civil War the B&O suffered constant attacks, destruction of key wayside facilities, bridges, and hundreds of miles of track, the end of the Civil War brought about a period of reconstruction and expansion for the railroad and the country's infrastructure. All along the B&O new bridges, shops, heavier track, and new rolling stock brought the railroad into the post-Civil War era. Traffic increased as the B&O extended its lines

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<sup>37</sup>In 1863, during the Civil War, the state of West Virginia was carved away from Virginia. The term "West Virginia" is used throughout this narrative, including events occurring before the state's formation when it was still a part of Virginia.

<sup>38</sup>Unfortunately, researching the B&O's pre-1900 engineering is particularly difficult as the entire files of the B&O's engineering department were lost in the great Baltimore fire of 1902.

<sup>39</sup>This led to the 100-mile working day, which came to dominate the labor practice of American train crews for over a hundred years. Martinsburg was the dividing point between the B&O's first and second divisions (Baltimore and Martinsburg, and Martinsburg and Cumberland, respectively).

<sup>40</sup>Mineral County was established in 1866 when it was split from Hampshire County.

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farther west to Chicago and St. Louis. North-south branch lines began connecting into the B&O main line, creating a vast system of railroads feeding traffic to the main line.

At Martinsburg in 1866, the B&O built the West Roundhouse, Machine and Woodworking Shop, and Car Shop to replace the maintenance facilities destroyed during the war. These three buildings possess national significance in the realm of American railroad shops and roundhouses. Therefore, the following context discusses this theme relevant to the Martinsburg shops.

**A Context for American Engine Sheds, Shops, and Roundhouses**

In the very early years of American railroads (prior to ca. 1830), while still relying on horses to pull trains, railways needed barns to house the animals at night. The "iron horse" needed a similar barn, so engine sheds (or engine houses) became an inherent feature of railroads with the swift adoption of steam-powered locomotives. Sheds protected the valuable and often ornate locomotives during "down time" and provided a sheltered area for workers to inspect locomotives and make light repairs. As railroads evolved and extended westward between 1830-1850, engine sheds were built at strategic points like major junctions, bases of steep grades where helper engines were kept ready, and far-flung points of the line where an engine would have to "lay over." They became an essential part of railroads and remain so.

At particularly important points auxiliary repair shops (sometimes called back shops) for more serious repairs or even rolling stock fabrication were located next to the engine house. These shops included, for instance, drop-pits where wheels and axles could be examined and repaired, ashpits where fireboxes were emptied and washed, cranes for lifting, moving, and assembling locomotive and rolling-stock components, machine tools used to turn metal "blanks" into detailed machine parts, and forges where parts were repaired or fabricated. Other smaller buildings and structures were usually present such as carpenters shops, oil houses, sanding houses, water tanks, penstocks, and fueling stations which supplied wood or coal.

Early engine sheds and auxiliary shops were invariably rectangular in plan and usually quite small. From ca. 1830-1850, simple engine sheds were sufficient for the relatively light traffic and simple operations on American railroads. A good example is the B&O's 1831 Ellicott City station, a National Historic Landmark and the oldest railroad depot/engine shed in the country. It is located along the B&O's mainstem thirteen miles west of Baltimore and was the railroad's first temporary western terminus. The shed is a small rectangular stall built into the depot, and just large enough to house a single diminutive 3-ton "Grasshopper" locomotive.<sup>41</sup> Engine sheds grew during the 1830s and 1840s to hold four or five locomotives along parallel tracks. Switches simply directed locomotives off the main line track and onto one of the tracks leading into the shed. Locomotive turning and track changes were performed with "wyes" (Y-shaped track layouts) or in some cases transfer tables (a laterally moving track section which moved an engine between parallel tracks) located near the shed.

As railroads matured and traffic expanded in response to America's expanding industrial output, by 1850 a more efficient method of locomotive handling and maintenance was necessary. The turntable and "roundhouse" were the answer.<sup>42</sup> In the early 1850s, major railroads began building turntables and roundhouses at most large

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<sup>41</sup>The Ellicott City depot has cut-stone side walls and a peak roof.

<sup>42</sup>Detailed analysis on the development of early shops, roundhouses and turntables is very scarce. For example, it is as yet unknown where the first American roundhouse was constructed, or the first turntable. Most historical/architectural investigations into railroad architecture focus on depots and/or post-1880 passenger sheds instead of maintenance facilities. Passenger sheds housed numerous parallel (dead end) tracks, were invariably oblong and rectangular in plan (as entire trains were brought in for passenger

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maintenance facilities. Roundhouses, one of the few types of utilitarian railroad buildings to break away from rectangular construction, always incorporated a central turntable as it was the impetus behind their shape. Typically, workers inspected, oiled, and fueled each locomotive at the end of a run and brought it to the turntable to be turned. If in need of light maintenance, the engine was sent onto one of the surrounding work bay tracks. If not, it was moved out of the roundhouse to a storage track to await the next run. If major overhauls were needed (often requiring weeks of downtime) the locomotive was moved to the "back shop." While smaller facilities where fewer engines were maintained still used rectangular engine sheds, larger facilities almost invariably possessed a roundhouse and turntable after 1850.

However, the term "roundhouse" is terribly misleading. In the late nineteenth century "roundhouse" became a catch-all term for a variety of engine shed types of very different construction. The "pigeonholing" of these buildings has clouded the historical record, requiring clarification in order to understand the importance of Martinsburg's roundhouse.

Over the 100 years American railroads built roundhouses, the vast majority of "roundhouses" actually exhibited a segmental "(" shape or semi-circular "C" shape with a turntable centered on the diameter of an uncompleted circle. In these cases, the turntable was not covered and sat some distance outside the building. Fewer roundhouses exhibited a fully circular "O" shape, but these too usually left the central turntable uncovered giving the roundhouse a "doughnut" shape.<sup>43</sup> Completely circular roundhouses with covered internal turntables such as the Martinsburg West Roundhouse and the B&O's later Mt. Clare roundhouse were the rarest, and the least studied by modern historians. "Domed" roundhouses like these were built in the United States ca. 1850-1884.

In Europe, semi-circular, doughnut-shaped, and domed roundhouses were apparently in use by ca. 1850. Turntables were used on early European tramways (the precursor to railroads) in the 1700s and were well-known by early nineteenth-century American railroad engineers. Yet in America simple track switches and wyes served the purposes of the country's early, cheaply built railroads. In America, turntables and their accompanying roundhouses evidently appeared in the 1840s, but their origins are as yet shrouded in mystery. It is logical to assume that small turntables were in use on American railroads by the early 1840s, and that small, four- or five-stall, semi-circular roundhouses appeared simultaneously, followed by doughnut-shaped

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loading) and usually the roof was formed by steel-arch "ribs" providing vast amounts of uninterrupted space and copious light. The public nature of depots and passenger sheds and their monumental construction undoubtedly helped their popularity among historians. The usually off-limits maintenance facilities like roundhouses and the unglamorous work going on remained largely unstudied. One of the few contemporary nineteenth-century roundhouse overviews is by Walter G. Berge, *Structures of American Railroads*, (New York, John Wiley & Sons, 1893), pp. 166-201. Two informative works which detail sheds, roundhouses and maintenance shops in the early twentieth century are: Thurman W. and Russel G. Van Metre, *Trains, Tracks, and Travel*, (New York, Simmons-Boardman Publishing Corporation, 1927); and Robert S. Henry, *This Fascinating Railroad Business*, (New York The Bobbs-Merrill Company, 1946). For modern historical analysis, historian John Hankey's unpublished structures report (produced in 2000) for the Martinsburg shop complex contains a masterful account of the origins and evolution of American railroad shops, engine sheds, roundhouses and their working conditions. Hankey, a former curator of the B&O Railroad Museum, is one of the foremost railroad historians in the United States and his work on the Martinsburg shops has greatly aided preparation of this nomination. Other conclusions reached in this context are the result of research and analysis by nomination author Michael Caplinger, a specialist in the history of early railroad structures at West Virginia University's Institute for the History of Technology and Industrial Archaeology.

<sup>43</sup>The country's oldest remaining "doughnut-shaped" roundhouse (with an uncovered turntable) is in Chicago, Illinois. Built by the Chicago, Burlington, and Quincy Railroad, and called the Aurora roundhouse, it was begun in 1856 as a twenty-two-stall semi-circle. It was constructed with cut-limestone walls and wood and iron roof trusses. In 1859 eight stalls were added, and in 1865 the addition of another ten stalls completed the forty-stall circle. In 2001, it is the "Walter Peyton" entertainment and shopping complex. At very large late nineteenth century complexes, two or even three doughnut roundhouses like this with room for over 100 locomotives might be present.

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roundhouses and finally domed roundhouses by 1852. There is also the possibility of a technology transfer from Europe to the B&O's early domed roundhouses.<sup>44</sup>

The B&O apparently built the first American domed roundhouse. During the B&O mainstem's final phase of construction between 1849-1853, a young German B&O engineer named Albert Fink designed a domed roundhouse for the B&O, built at Piedmont, West Virginia in 1852. Evidently the first domed roundhouse in the United States, it incorporated a cast-iron frame supporting a high, bell-shaped dome over the central turntable. The railroad built a similar B&O roundhouse at Grafton, West Virginia, later that year.<sup>45</sup> Two years later Austrian B&O engineer Johann "John" Rudolph Niernsee designed a simpler wood-and-iron-frame domed roundhouse for the B&O.<sup>46</sup> Interestingly, the first Niernsee roundhouse was built at Martinsburg in 1854, but destroyed by Stonewall Jackson's troops during the Civil War.<sup>47</sup> By 1855 other railroads were building domed roundhouses exhibiting a silhouette combining the attributes of the Fink and Niernsee roundhouses.<sup>48</sup> This intermediate (and ultimately most widely used) domed roundhouse-type exhibited a smooth shed roof over the locomotive bays topped by a clerestory and low dome roof supported by wood-and-iron roof trusses.

Regardless of the building type, the primary requirements for engine sheds were ease and efficiency of locomotive movement, economy of structural materials, fire resistance, sufficient working space<sup>49</sup> and lighting,

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<sup>44</sup>The HAER report for Fink's Tray Run viaduct (WV-18, p. 18) notes a ca. 1850, similar-looking roundhouse on the Paris-Orleans Railway at Etampes, France. The European influence on the B&O's engineering staff (especially Albert Fink and John Neimsee) during the 1840s and 1850s reinforces the scenario of a trans-Atlantic technology transfer to the B&O. An interior photo of a ca. 1865 domed iron-frame roundhouse at Nevers, France is included in: J. S. Snell, *Early Railways*, (London, Octopus Books Limited, 1972), p. 48. The photo indicates the Nevers roundhouse had sixteen stalls and brick sidewalls with tripartite window openings in each locomotive bay wall. Vertical metal beams supported inclined metal latticework "ribs" forming the dome. The dome possessed an intermediate clerestory, and yet another clerestory surrounding an open oculus which vented locomotive smoke. The silhouette is much less angular, but the design shares similarities with the Fink roundhouses. Further research into the European/American transfer of railroad technology is needed to confirm this possibility of a technology transfer. The destruction wrought upon European railroad centers during World Wars I and II, combined with the standard demolition of steam-era maintenance facilities apparently removed all nineteenth century examples of domed roundhouses in Europe.

<sup>45</sup>As described in more detail below, Fink became vice-president of the Louisville and Nashville Road just prior to the Civil War and built two similar roundhouses on that railroad ca. 1860. Beginning fourteen years later with the 1866 Martinsburg West Roundhouse, the B&O built "copies" of the Piedmont roundhouse at various locations. These copies included an additional roundhouse built at Martinsburg in 1872--the East Roundhouse-- now in ruins.

<sup>46</sup>The Niernsee roundhouse design was circular, fully enclosed with a central turntable. Because of its numerous gables it is often referred to as a Gothic-style building. It had masonry sidewalls, a clerestory, and wood-and-iron roof trusses. Eleven engine stalls, each with a ridge roof and gable end, radiated from the central dome. Inside, vertical timbers placed around the turntable's circumference supported a low-silhouette dome and vent cupola over the turntable. Niernsee spanned the space over the turntable with a radial wood-and-iron truss system supported by the vertical timbers. Enclosed roundhouses using a composite wood-and-iron truss system supporting a low dome and cupola were soon built on many large railroads. However, no examples of domed roundhouses with wood-and-iron roof trusses remain anywhere in the United States or, apparently, Europe.

<sup>47</sup>The second was built in Cumberland in 1854. It survived the Civil War, but the B&O demolished it in the late nineteenth century.

<sup>48</sup>Evidence of this is beautifully represented in George Inness's 1855 painting "The Lackawanna Valley"--Inness is an acclaimed member of the "Hudson School" of nineteenth-century landscape painters.

<sup>49</sup>Within the category of fully circular, domed roundhouses, the maximization of floorspace and working room between roof support members was a primary concern. Opposed to wood-and-iron support systems placed close to the turntable, the Fink roundhouse system first demonstrated at Piedmont allowed vast unobstructed working space around the central turntable and locomotive bays.

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ventilation of locomotive smoke, and drainage from the work floor.<sup>50</sup> Whether rectangular, segmental, semi- or fully circular, smaller American engine shops and engine houses were often built using simple techniques incorporating wood framing covered with board-and-batten siding. On larger structures sidewalls were always brick or cut stone, and by the late nineteenth century masonry construction was normal for all larger buildings. The same holds true for auxiliary shop buildings.

However, roof systems spanning the large open spaces required in shops and engine sheds required more intricate engineering. Roof trusses are bridges, not to carry people or vehicles, but the forces of wind, rain and snow upon the roof sheathing. They often incorporated contemporary developments in the bridge-building field. During the nineteenth century bridge construction was a primary concern to civil engineers. The desire to build ever longer, stronger bridges (driven by the needs of railroads) drove the adoption of iron, first in the form of composite wood-and-iron truss bridges, and by ca. 1850 all-iron truss bridges. From the 1850s to ca. 1930, the roof support systems of these intermediate roundhouse types usually relied on heavy, vertical timber beams (later vertical cast-iron posts, and by the 1880s vertical rolled-steel beams) supporting a wide variety of wood-and-iron roof truss types. The trusses and their vertical supports were usually arranged in a radial pattern around the turntable.

Since engine smoke was always present in engine sheds, adequate ventilation was a priority. Another priority was natural light, as kerosene lanterns could not illuminate such large working spaces. Engine smoke corroded structural materials and also made for poor working conditions, so both rectangular and semi-circular engine sheds routinely used smoke hoods--funnel-shaped metal fixtures that could be lowered over the locomotive smokestack--to remove smoke. Windows, clerestories, or sawtooth roofs provided light and ventilation.

While different locomotive shed designs possessed different advantages and drawbacks which had to be weighed against the individual situation, there were definite benefits to domed roundhouses: where land was limited an enclosed roundhouse allowed locomotive turning and maintenance facilities in the smallest possible area; supervision of workers was easier; the roof's dome shape funneled smoke toward the clerestory and upward to a vented cupola (the comparison to the smoke-removing nature of Native-American teepees naturally comes to mind); windows in the walls and roof provided natural light and ventilation from 360 degrees (an important consideration before electric lighting); and, in wintery climates locomotives, workers, and the central turntable machinery were well-protected from the elements.

On the other hand, completely enclosed and covered roundhouses had one major flaw--a fire in the building could quickly render the turntable useless, trapping the engines in their bays. According to nineteenth century historian and civil engineer Walter Berge, "A closed roundhouse, even under the best conditions, is not much better than a firetrap."<sup>51</sup> Likewise, a simple mechanical breakdown of the turntable or an engine on an exit track caused costly delays. Semi-circular and doughnut-shaped roundhouses were safer for the locomotives, and often incorporated interior firewalls. During a fire in semi-circular and doughnut-shaped structures the engines could be run out of the shed to the safe section of track between the shed and the turntable. In the realm of domed roundhouses, Fink's all-iron frame was safer than wood-and-iron trusses.

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<sup>50</sup>The interior floors of shops were either dirt, cinders, wood, or later in the nineteenth century, cement. Proper drainage of the shop floor was always a necessity as the locomotives and their boilers were washed here and in winter, they could enter the house bearing snow. Heating in roundhouses was usually provided by potbelly stoves, although by the early twentieth century steam heat piped from a central boiler was often used.

<sup>51</sup>Walter G. Berge, *Structures of American Railroads* (New York: John Wiley & Sons, 1893), p. 169.

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The fatal drawback to domed roundhouses was their size limitation. Semi-circular roundhouses could begin with just a few stalls built along a segment of a wide semi-circle. As locomotive service requirements increased, more stalls could be added to the semi-circle without interrupting activity in the already functioning section. A semi-circular roundhouse could even be incrementally expanded until it was a fully circular doughnut shape. With no overarching roof covering the turntable (and no elaborate structural system needed to support it) semi-circles and doughnut circles could be built with much larger diameters--thus more engine stalls. As ever-larger and longer locomotives were adopted (along with the larger turntables needed to turn them) the cost, difficulties, and drawbacks of spanning large open areas around the turntable ended the use of domed structures in favor of semi-circular, doughnut-shaped, and rectangular locomotive sheds.

Domed American roundhouses found their penultimate form in the B&O's 1884 Mt. Clare roundhouse. The Mt. Clare roundhouse was built as a maintenance facility for non-locomotive rolling stock and may have been the last domed roundhouse built. Apparently domed roundhouses were not constructed after ca. 1890. Only two remain in the United States and possibly the world: the 1884 Mt. Clare roundhouse in Baltimore and the 1866 Martinsburg West Roundhouse.

Between 1890 and the mid-twentieth century roundhouse construction (both here and in Europe) settled into three definite genres: rectangular, semi-circular, and doughnut-shaped. Yet the latter two were a reflection of the steam age, and the widespread adoption of diesel locomotives by 1950 ended construction of even semi-circular and doughnut-shaped roundhouses. Diesel locomotives are often paired while in service (thus too long for steam-era roundhouse stalls); operate equally well forwards or backwards (they don't need to be turned like steam engines); are more powerful (fewer engines are needed); and they require much less maintenance. Thus, the adoption of diesel locomotives led to the closure and demolition of most steam-era railroad maintenance facilities by the late twentieth century. Roundhouses and turntables are now rare.<sup>52</sup> The rectangular engine shed is by far the most common and evidently the only type now constructed by railroads.

**The B&O's Early Engineering Department**

Early on (1827-1842), the B&O's engineering department was headed by Jonathan Knight, an "engineering traditionalist" or "carpenter engineer" whose greatest contributions to the B&O were his masterly route surveys through the wilds of central Appalachia between 1830 and 1840. He was also a first-rate mechanical engineer and worked diligently to develop early B&O rolling stock. While his engineering contributions were many during the B&O's first twenty years, his influence over the engineering department ebbed by 1842. The B&O reached Cumberland (on the eastern side of the mountains) in 1842, when Knight retired and his principal assistant Benjamin H. Latrobe II, became chief engineer.

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<sup>52</sup>At the apex of railroad sheds (of all types), there were thousands in the United States. They now number in the hundreds, with circular types the most rare and endangered.

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Latrobe II was the son of America's preeminent post-revolution engineer, German immigrant Benjamin Latrobe, Sr., who left his mark across the eastern United States by building numerous monumental private homes and civic structures. With little formal academic training and very likely no informal training from his father, who died when Latrobe II was young, Latrobe II began working for the B&O as a surveyor under Jonathan Knight in 1833. Quickly rising through the ranks to become chief engineer in 1842, the younger Latrobe became one of the most respected and prolific railroad engineers of the nineteenth century. He was also an early advocate of using iron to reinforce wooden structures. In the 1840s, Latrobe supported young engineers rising through the ranks of the B&O's engineering department such as John Niernsee, James C. Nielson,<sup>53</sup> Wendel Bollman, and Albert Fink.

Bollman, who as a young boy witnessed the laying of the B&O's "first stone" in Baltimore in 1828, became a carpenter's apprentice. He returned to the B&O in 1836 to help repair the railroad's bridge at Harpers Ferry and remained with the company for nearly twenty-five years. While coming from the traditional carpenter-engineer background, Bollman schooled himself in the mathematical and scientifically based methods of academically trained engineers. In 1849, as the B&O began its most difficult building period, Bollman was appointed "Master of Road," and given the responsibility of maintaining all bridges, tunnels, and wayside structures on the B&O. He also began designing iron structures and in 1851 patented the Bollman truss, the first iron railroad bridge produced in large numbers.

By 1850, the B&O's engineering department was dominated by Latrobe and Bollman. Yet a young, transplanted, highly trained German engineer named Albert Fink quickly found himself working with these two giants in the engineering field and eventually surpassing their creations. Fink arrived in America in 1850 with a fresh education from one of Europe's most prestigious engineering universities, the Darmstadt Polytechnikum, much better trained in mathematics and classical architecture than most American engineers. He first worked odd jobs and eventually looked for work with Bollman and Latrobe, both of whom had invited him to apply to the B&O. While waiting for a response from the B&O Fink worked on a new bridge design, one strikingly similar to an 1851 Bollman patent.<sup>54</sup> Bollman turned out to be a frustrating dead end as far as acquiring employment, but Latrobe found a position for Fink on his staff of draftsmen. Latrobe quickly recognized Fink's abilities and promoted him to the position of personal assistant in 1851.

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<sup>53</sup>Nielson was a surveyor under Latrobe and in 1842 became superintending engineer at Martinsburg. Under his direction, the first roundhouse at Martinsburg (designed by John Neirnsee) was erected. Neirnsee and Nielson left the B&O in 1847 and combined to form a prominent Baltimore architectural firm thriving on B&O design contracts for depots, freight houses, and shops for another thirty years.

<sup>54</sup>Fink's bridge truss was patented in 1852 and eventually regarded as structurally superior to the Bollman truss--thus it was more widely used. The Bollman truss was not used after ca. 1880, but the Fink truss was popular in its bridge form until ca. 1890. It had even longer lasting use in early twentieth-century industrial building roof systems. Interestingly, in the early 1850s there was apparently a rivalry between Bollman and Fink while they were employed by the B&O.

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The most difficult construction period for the B&O was between 1848 and 1852 when it crossed the highest regions of the Appalachians between Cumberland, Maryland, and Wheeling, West Virginia. Latrobe and Bollman needed help designing the railroad, as the B&O's engineering staff was stretched thin, and American railroads were building rapidly west so engineers were in short supply. Fink, young and full of talent, quickly found himself in charge of designing and overseeing the erection of major structures largely on his own as Latrobe was too busy to "second guess"--and he obviously trusted Fink.

This period was also a pivotal time in the engineering profession, when cast and wrought iron were coming to the forefront of structural engineering. By 1852, the B&O's engineering staff had fully embraced the use of iron wherever feasible in bridges, viaducts, tunnels and buildings. This was at a time when the reliability and characteristics of iron were still in question among most engineers, and this reliance on iron structures was considered risky by the majority of engineers. Plus, until that time timber had largely served the purpose as a basic structural material. Yet the increasing weight of trains, the need for stronger, more durable, easier-to-erect (thus cheaper) bridges drove these engineers toward iron and away from the comfort of wood. However, Latrobe, Bollman, and Fink shared information and expertise, each taking confidence in the others' new designs, working to improve them while also striking out on different paths. The B&O's engineering department, between 1848 and 1852 was going where no American engineers had gone before. Their works in iron are fascinating and too numerous to detail here, and all were at the leading edge of mid-nineteenth century engineering.

**Martinsburg's Link to Fink's 1852 Roundhouses**

By the mid-nineteenth century, the nation's railroads were pushing the cutting edge of technological development on a broad front and entering into a symbiotic relationship with the country's developing industrial base. Faced with the largest, most difficult engineering project of the time--crossing the highest portions of the Appalachian Mountains--the B&O's engineering staff embraced and furthered the newest technologies available. In the civil engineering field, the B&O led American developments in the use of cast and wrought iron. In the early 1850s, under the leadership of Chief Engineer Benjamin Latrobe II, the B&O's engineering wing pioneered the movement to standardize and prefabricate iron railroad structures, especially bridges, using scientific rationale. Although iron's structural properties were not well-understood by most American engineers and production techniques were sometimes flawed, iron grew ever cheaper and increased in quality. Iron was stronger than wood, and resisted decay and fire better. Moreover, prefabricated iron structures were easier to erect than wood versions, requiring less-skilled (thus cheaper) on-site labor. The vast majority of the B&O's iron structures were bridges, but other examples of iron-based engineering like the Martinsburg West Roundhouse were built all along the B&O.

Fink's engineering ability is well represented by his work during the construction between Cumberland and Wheeling. While no definite numbers exist, probably over half of the major bridges, of which there were well over 100, were Fink trusses (one of which, at Fairmont, was in 1852 the longest iron bridge on the North American continent). Fink also produced detailed route maps and a variety of wayside structures. In 1852, with the line nearly complete, Latrobe praised Fink in the B&O annual report, writing, "I owe it also to Mr. Albert Fink, my principal office assistant, to acknowledge the very important aid which he has rendered the Company, in the design and execution in detail of most of the bridge structures and buildings upon the line, and which are alike creditable to his skill as an engineer, and his taste as an architect."<sup>55</sup>

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<sup>55</sup>Latrobe in *Baltimore and Ohio Railroad Annual Report Number 26*, Baltimore, October, 1852, pp. 77-78.



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While constructed in 1866, the Martinsburg West Roundhouse's cast-iron frame possesses striking similarities to a number of groundbreaking cast-iron structures designed by B&O engineer Albert Fink during 1850-53. The Martinsburg roundhouse frame exhibits attributes of Fink's 1852 Tray Run Viaduct and Buckeye Run Viaduct, America's first all-iron railroad trestles.<sup>56</sup> Of particular relevance to the Martinsburg West Roundhouse was a roundhouse designed by Fink in 1852 for the B&O's shops at Piedmont, West Virginia (later that year another was built at Grafton, West Virginia).

When the rails reached Piedmont, engine shops and a roundhouse were immediately constructed. Piedmont was a "helper station" at the eastern base of the highest Allegheny ridges. Here, extra locomotives were stationed to assist trains climbing the tortuous "sixteen-mile grade" that lay just to the west and carried the B&O over the highest point on its line. The Piedmont roundhouse was a circular, fully enclosed, sixteen-stall roundhouse approximately 150' in diameter.<sup>57</sup> In the B&O's 1852 annual report, Latrobe reported that "It has an iron roof upon a new model, combining lightness and economy, with ample strength and entirely proof against fire."<sup>58</sup> Finished in 1852, it may have been the first circular, domed roundhouse in the United States. It was certainly the first cast-iron-framed roundhouse in the United States. Also, two large auxiliary (rectangular) maintenance shops were made ready for its machinery by the winter of 1852-53. Distinguished contemporary B&O historian William Prescott Smith described the roundhouse at Piedmont in 1853: "The plan of the engine house at this point was suggested by the Chief Engineer, Mr. Latrobe, and the design admirably carried out by Mr. Albert Fink, Assistant Engineer. It is shaped very much like a marquee<sup>59</sup> and is arranged to hold sixteen engines, and cost between \$12,000 and \$13,000."<sup>60</sup>

Fink's confident use of cast iron to create such lofty, airy structures at a time when structural cast iron was mistrusted by many in the engineering community is an indication of his academic European training, his understanding of the metal's properties, and his confidence as a civil engineer. Fink's bridges, trestles, and roundhouses immediately placed him at the forefront of mid-nineteenth century civil engineering. Like the B&O's other iron structures (many produced by fellow engineer Wendel Bollman), his designs offered the possibility of mass production, easy erection, fire-resistance, and standardization. Fink's Piedmont roundhouse design was likely meant to be a "standard" mass-produced roundhouse.

There is a direct relationship between Fink's work in 1852 and the 1866 Martinsburg West Roundhouse. Like the 1852 Piedmont roundhouse, the Martinsburg West Roundhouse has sixteen stalls. Analysis of the 1866

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<sup>56</sup>The Tray Run and Buckeye Hollow Viaducts, the first all-iron railroad trestles in the United States, were demolished in 1887. Today the Tray Run Viaduct is a four-arch masonry viaduct and Buckeye Hollow is an earth fill enclosed by a masonry wall. The framing system at Martinsburg shares similar features with the Tray Run and Buckeye Hollow trestles, especially the hollow cast-iron columns inclined from their bases. Latrobe wrote of the trestles in the B&O's 1853 annual report: "These beautiful and substantial structures were designed by Mr. Albert Fink, my present principal assistant, whose talents and taste have been nowhere displayed to greater advantage than here." The iron was fabricated by the company's shops at Mt. Clare in 1852. The reverse side of the 1863 West Virginia state seal includes a representation of the Tray Run Viaduct.

<sup>57</sup>The original Piedmont roundhouse's diameter was 150', the second Piedmont roundhouse 175', the Martinsburg West Roundhouse 177'. The 1852 Fink design for Piedmont was enlarged to allow longer locomotive bays simply by the addition of an outer ring of independent iron trusses. The Martinsburg West Roundhouse exhibits this "extra" ring.

<sup>58</sup>Latrobe in *Baltimore and Ohio Railroad Annual Report Number 26*, Baltimore, October, 1852, pp. 66-67.

<sup>59</sup>Originally defined, according to *Webster's Dictionary*, as "a canopy over an officer's tent."

<sup>60</sup>William Prescott Smith, *History and Description of the Baltimore and Ohio Railroad*, Baltimore, 1853, p.108

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Martinsburg roundhouse and the 1852 Piedmont roundhouse using late nineteenth and early twentieth century Sanborn Fire Insurance Maps show obvious similarities.<sup>61</sup> Comparisons of the scant drawings and photographs of Martinsburg and Piedmont show nearly identical buildings. Yet, no original architectural plans of either remain. While Fink's name has not before been attributed to the 1866 Martinsburg West Roundhouse, it undoubtedly represents his work by exhibiting the defining attributes of his 1852 Piedmont design. The B&O built another Fink roundhouse at Piedmont in 1855. During the Civil War, the two Piedmont roundhouses were twice damaged by Confederate raiders but survived relatively intact and were repaired for use after the war.

Fink, having left the B&O in the mid-1850s, became chief engineer for the Louisville and Nashville Railroad in 1859. He built two similar roundhouses on the L&N in Louisville, Kentucky at some point shortly thereafter.<sup>62</sup> No other Fink roundhouses were built on the B&O until after the Civil War when, in 1866, the B&O built the Martinsburg West Roundhouse, followed in 1872 by the Martinsburg East Roundhouse. So, twenty years after its origin, Fink's design was still viable. However, the 1872 Martinsburg roundhouse was the last of its type. In all, seven Piedmont-type roundhouses were built.

However, the B&O most closely followed Fink's early 1850s design. Unlike Fink's L&N's roundhouses, the post-Civil War Fink roundhouses built by the B&O not only followed the design of Fink's first Piedmont roundhouse, they were nearly exact copies of it. While the B&O altered certain minor details of the various "Piedmont family" roundhouses over time, the internal frame's major components (such as the main inclined columns) apparently remained unaltered and quite feasibly could have been produced from the same molds which produced the 1852 Piedmont roundhouse.

Significantly, the Martinsburg West Roundhouse is the only remaining example of the "first family" of fully enclosed roundhouses on the B&O or any other railroad. The only other enclosed roundhouse in the United States is the Mt. Clare roundhouse in Baltimore, a National Historic Landmark now housing the B&O Railroad Museum. Interestingly, this building and the nearby car shop were designed by Niernsee and built in 1883-84. While possessing superficial similarities to the smaller Martinsburg roundhouse, Mt. Clare's primary structural framing uses vertical, rolled steel beams instead of inclined, hollow, cast-iron columns featured on the Fink design.<sup>63</sup> The car shop is larger than the one constructed at Martinsburg, but of the same architectural style.

When the Civil War ended in 1865 large portions of the B&O needed to be entirely rebuilt. The original Martinsburg shops were still in ruins from Stonewall Jackson's raid in 1861 and the company needed to quickly rebuild there and at dozens of other points while looking ahead to increased post-war traffic. Fink had left the B&O by 1859, so why did the B&O begin building roundhouses following Fink's fourteen-year-old design? This is an assumption, but Fink's blueprints and the molds used to create the Piedmont roundhouse were almost

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<sup>61</sup>Comparisons of historic photographs, Sanborn Fire Insurance Company maps, and the few descriptions of the "Piedmont family" of roundhouses existing in the historical record indicate there were minor differences between the various structures. For instance, the Louisville roundhouse was slightly larger and held eighteen locomotive bays (as opposed to Martinsburg's sixteen), differed in certain facade details and the frame's inclination was slightly less, but it maintained the overall system of inclined cast-iron columns supporting the central dome which defines this family of structures.

<sup>62</sup>HAER Tray Run Report, WV-18.

<sup>63</sup>As a collection of engine sheds, the B&O's Ellicott City depot/shed, the Martinsburg West Roundhouse, and the Mt. Clare Roundhouse are a serendipitous occurrence. These three buildings represent three distinct locomotive sheds from three different eras: Ellicott City (an NHL)--the oldest remaining American locomotive shed; Martinsburg--the oldest extant domed roundhouse; and Mt. Clare (an NHL)--the final domed roundhouse built in the United States.

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undoubtedly on hand at Mt. Clare in Baltimore when the war ended. Railroads routinely stored master blueprints and revised them over decades of use, and likewise railroad foundries did not throw-out casting molds after their first use.<sup>64</sup> Presumably, in 1866 the blueprints and molds from the 1852 Piedmont roundhouse were on hand and could still create a structure that met the company's needs at a time when the company was overwhelmed with construction projects.

Fink's 1852 and 1855 Piedmont roundhouses were demolished early in the twentieth century prior to World War I. Analysis of the available information and comparisons to better-documented contemporaneous Fink structures such as the Tray Run Viaduct point toward Fink as the Martinsburg West Roundhouse's architect. The fact that Fink, after leaving the B&O and joining the L&N Railroad, repeated the design similarly indicates that the Martinsburg roundhouse (and the other similar post-Civil War roundhouses on the B&O) all trace their lineage directly to Fink's engineering genius. On the B&O, all of the Fink designed roundhouses, except those at Martinsburg, were demolished between 1905 and 1918, when the Grafton roundhouse was torn down so a new, much larger semi-circle shed could be erected. The L&N Railroad evidently demolished its Fink roundhouses during the same period. The B&O replaced the Martinsburg East Roundhouse's iron frame in 1927, leaving the Martinsburg West Roundhouse as the last representative of Fink's work in this area of civil engineering.

The Martinsburg roundhouses functioned as locomotive sheds until ca. 1898, when locomotive maintenance was transferred to a major new semi-circular roundhouse complex at Brunswick, Maryland. Instead of demolishing the Martinsburg buildings, the financially strapped B&O reused the complex. During the twentieth century the complex evolved into a bridge repair shop, a track "frog" fabrication shop, and a rolling-stock repair shop. Numerous buildings and structures were added to the complex, some attached directly to the three nominated buildings, others sitting a short distance away. In 1988 CSX finally closed the shops. Many of the twentieth-century buildings were partially demolished by the railroad. However, the 1866 buildings sat derelict and untouched in the abandoned complex. On May 14, 1990, vandals set the East Roundhouse on fire, destroying the structure and leaving only remnants of the brick sidewalls. Until 1999, the West Roundhouse was in danger of demolition by CSX. In early 1999, the West Roundhouse, Machine and Woodworking Shop, Car Shop, the remains of twentieth-century structures, and the surrounding property were purchased by Berkeley County with the aid of local, state, and federal funds. Restoration is ongoing in 2001.

**Albert Fink (1827-1897)**

Albert Fink was born in Lauterbach, Germany, on October 27, 1827, the year the B&O's cornerstone was laid in Baltimore. He was classically trained as an engineer, studying engineering and architecture at the Darmstadt Polytechnikum. After graduating from this prestigious European school in 1848, he worked for a year in Offenbach, Germany designing public buildings. Fink and his brother Henry set out from Germany to the United States on April 10, 1849 and arrived in New York on May 2. Fink was just 22 years old and full of confidence as he set about finding work as a civil engineer.

To his surprise, Fink's training from the Darmstadt Polytechnikum was unappreciated wherever he went to look for work in New York. After weeks of unsuccessful searching, he considered continuing on to South America to look for work until hearing of possible opportunities in Baltimore with the B&O Railroad. Coincidentally, on May 23 (three weeks after Fink's arrival in New York) the B&O had started construction of a new section of

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<sup>64</sup>Foundry molds were wooden carvings, pressed into "green" sand to form the impression into which cast iron was poured. Molds were invariably stored at the foundry so that copies or replacement parts could easily be created.

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line west of Cumberland, Maryland. He visited the office of Wendel Bollman, the master of road, waiting for days outside his office hoping to see him. Upon finally meeting Bollman, he had no open positions to offer. Fink bided his time making scale drawings and a model of a new bridge truss design that would later bear the Fink name. Interestingly, Bollman visited Fink's small one-room apartment a number of times to look over his drawings and the model.

In November, 1849, Fink wrote:

Bollman has come to my room several times, staying for hours, to study my drawings. And always he would say when I would ask him for a place, "Come to my office". I am beginning to believe that it is the fault of the office boy that I have not seen him. Today I was told that he had gone to Harper's Ferry and I have made up my mind to follow him there tomorrow.<sup>65</sup>

Fink caught up with Bollman at Harpers Ferry, though Bollman still had no work for him. "Who knows what I will have to do. Perhaps like Bollman I will have to start with a wheelbarrow."<sup>66</sup> He routinely referred to Bollman in his diaries as the "wheelbarrow man," hinting at the rivalry which evidently developed between the two men. Fink, needing money, began working for a cabinet maker. Meanwhile, he continued his drafting and design work on his own, eventually submitting plans for a statue base to a Baltimore sculptor. Fink did not win the contract, but the sculptor, impressed with Fink's work, gave him a "letter of entre" to Benjamin Latrobe, Jr., the B&O's chief engineer.

At nearly the same time (November 1849) the B&O began putting the entire line from Cumberland to Wheeling under construction contracts, and the company's engineering department entered a period of expansion to handle the immense amount of work required on the 200 miles of new line through the mountains. Yet, upon meeting Latrobe in late 1849, there was still no job for Fink. "When I saw Mr. Latrobe he also said, 'I have no opening.' And I said I would work for him for nothing. Fourteen days have passed since I saw Latrobe. All that I have had to go on is that he said that if he had an opening I would hear from him. Promises do not buy food, but I believe the word of Latrobe." Consequently he received a letter from Latrobe stating "If you will come to my office tomorrow morning I shall be able to give you some employment as a draughtsman."<sup>67</sup> The letter was dated December 21, 1849, and Fink went to work on December 24. Fink wrote his wife declaring, "This is the most thankful Christmas Eve I have ever known."<sup>68</sup> Fink, 22 years old, was suddenly on the staff of the chief engineer of the premier railroad in the United States.

Latrobe immediately took great interest in the young German engineer, and the two developed a close working relationship. He encouraged Fink to enter a bridge design competition in Boston during the winter of 1849-1850. Although Latrobe had high hopes for Fink, Fink himself was not so sure, writing "Latrobe approves of my design, and he has said that he will go to Boston with me for the competition. I only hope he doesn't have

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<sup>65</sup>Ellen Fink Milton, *A Biography of Albert Fink* (New York: Commercial Controls Corporation, 1951), pp. 26-27.

Interestingly, Milton, Fink's daughter and biographer, hints at a rivalry between Fink and Bollman, even to the point of suggesting Bollman stole part of Fink's truss design. She claimed Fink designed the truss before Bollman created his, though the Bollman design was the first erected and patented.

<sup>66</sup>*Ibid.*, p. 28.

<sup>67</sup>*Ibid.*

<sup>68</sup>*Ibid.*

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too much confidence in me."<sup>69</sup> Latrobe was a solid supporter, giving Fink encouragement all along the way, though in the end Fink's design did not win. Most likely, the design was what would become known as the Fink truss, patented in 1853.

Latrobe developed a complete trust in Fink's abilities, and in spring 1850 he moved Fink out of the offices in Baltimore and sent him off to the mountains west of Cumberland. Fink's daughter recounted that she had heard stories of the perilous work in the mountains from Albert's brother, Henry, although her father had not spoken much of it. "I heard only an amusing account of sleeping in mountain cabins containing but one bed, while pigs grunted lustily under the floor the whole night through!"<sup>70</sup>

In May of 1850, Fink wrote in his diary:

For many weeks I have been shut up in my office in Baltimore and always I have been longing for the country, but today I am again in the mountains. The train trip through the peaceful valley of the Potomac was beautiful. In America there are no castles and no ruins, but the different greens of the trees make my heart glad. All over again I realize that the important things of life are not to be bought with money...I work alone and make my plans and send them to be carried out without Mr. Latrobe's looking at them. He has almost too much confidence in me. A more excellent place for my development I could not dream of than the deep woods far away from materials with no communication. I must invent anything that is lacking or broken, and rely entirely on myself in any emergency.

Fink personally supervised construction on the largest, most difficult to erect bridge on the new line, the "great iron bridge" over the Monongahela River at Fairmont (a three-span Fink truss nearly 600' long). Writing his love Mimi, still in Germany, Fink shared his satisfaction at having gained so much so quickly:

Mimi, my little love, do not reproach me for not speaking of myself and what I am trying to accomplish. I do not believe in self-praise, I have told you again and again that since I received my patent I have been busy night and day. But for your ears alone I will tell you that I am no longer assistant to Latrobe. I am his co-worker and my own master. These were his words to me: 'I send you to the Cumberland because I have more work than I can do. There are no restrictions upon you'. This means, my loved one, that I am in complete charge of the building of our bridge across the Monongahela River, a project which will cost \$120,000...I cannot help but think often of my colleagues in Germany who are still sitting with their feet under a desk waiting for some opening...Always I am watching and waiting for your letters, but as so much of my time must be spent from now on in the mountains, constructing a bridge, I may not be able to write to you as often as before...<sup>71</sup>

Fink, in working on the Fairmont bridge, thought of a dream he had as a young teen and saw his work as the fulfillment of that dream,

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<sup>69</sup>*Ibid*, p. 32.

<sup>70</sup>*Ibid*, p. 37.

<sup>71</sup>*Ibid*, p. 36.

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A daydream which filled my mind in my fourteenth year came back to me. In this dream I saw myself on horseback directing men at work. The work was always with a bridge across a deep and rushing river. My dream has come true, but the reality is far more thrilling than my childish picture. My wise mother was right when she said daydreams dreamt often in childhood will come true...<sup>72</sup>

Incredibly, over the next two years Fink designed and oversaw construction of scores of shorter Fink truss bridges, plus Tray Run and Buckeye Hollow Viaducts and the Piedmont roundhouse. The B&O's mainstem was completed on Christmas Eve, 1852, and opened in January 1853.

After the completion of work on the main line in 1853, both Latrobe and Fink immediately went to work on the B&O-owned Northwestern Virginia Railroad. Latrobe was again chief engineer, and he made Fink resident engineer on the first seven miles west of Grafton. Latrobe then asked Fink to expand his responsibilities to the design of the bridges, trestles, and buildings on the entirety of that line. Fink became division engineer in October, 1855--a position he kept until the line was completed to Parkersburg in 1857.<sup>73</sup> In 1859, just prior to the Civil War, Fink left the B&O to become assistant chief engineer of the Louisville and Nashville Railroad. Here he weathered the Civil War on the North's side, continually working to keep the vital L&N open and repairing damage done by frequent Confederate raids. After the war he went on to be vice-president of the company, and later a pivotal figure in railroad economics and leader in the movement for cooperation among railroads and pooling rolling stock. Fink died in Sing Sing (Ossining) New York, on April 3, 1897.

**Johann "John" R. Niernsee (1814-1885)**

In 2000, historian John Hankey brought to light John Niernsee's relationship to the Machine/Woodworking Shop and Car Shop. The following Niernsee biography is largely excerpted from Hankey's report on the Martinsburg complex.

Niernsee was born Johann Rudolph Niernsee in Vienna, Austria, in 1814. His middle class parents could afford to give him a technical education in Vienna and Prague. In 1837, at the age of 22, he emigrated to the United States. Two years later, Jonathan Knight hired him as a draftsman to assist Benjamin Latrobe. Latrobe was in charge of the extension of the railroad from Harpers Ferry through Martinsburg to Cumberland, with which Niernsee would have become intimately familiar.

Although Niernsee trained primarily as an engineer, he seems to have worked mostly as an architect. In any case, he and Albert Fink--who trained primarily as an architect but worked mainly as an engineer--illustrate the soft boundaries and close connections between the two professions in the nineteenth century.

Niernsee and James Nielson, also a member of the railroad's engineering corps, in 1847 struck out on their own as the architectural firm of Niernsee & Nielson. Their major client was the B&O Railroad, and they produced a number of attractive and highly regarded structures. The firm seems to have served as the railroad's principal

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<sup>72</sup>*Ibid*, p. 39.

<sup>73</sup>*Ibid*, p. 43.

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architectural firm from the late 1850s (coincident with the departures of Latrobe, Fink, and Bollman) through the early 1870s, when Francis Baldwin and other firms began creating buildings for the B&O.

No direct attribution has been found, but it is very likely that Niernsee & Nielson designed the Bridge Shop, Frog Shop [referred to in this nomination as the Machine/Woodworking Shop and Car Shop, respectively], and perhaps other buildings at Martinsburg after the Civil War. It is also possible that the firm designed the railroad's freight houses in Martinsburg [located less than a mile from the nominated buildings], but that speculation is based on stylistic details. The B&O's 1880s car shop at Mt. Clare, definitely Niernsee's work and an NHL, exhibits stylistic conventions very similar to Martinsburg's Machine/Woodworking Shop and Car Shop.

Niernsee designed many buildings in South Carolina, and apparently served in the Confederate Army in a South Carolina unit. After the war, he assumed the commission for the South Carolina State Capitol in Columbia, which remains today his best-known building. In a fire during construction of that building, Niernsee's entire archive of drawings and professional papers were destroyed. Niernsee died in 1885.

**The Great Railroad Strike of 1877**

The engineering significance of the nominated buildings is complicated and highly important to American history, but equally so is its labor significance. During the summer of 1877 America was experiencing the lowest ebb of a severe economic depression which had been plaguing the country since the Panic of 1873.<sup>74</sup> All components of the economy, however, were not sharing equally in the hard times. Great numbers of people were unemployed and many of those who were working were trying to unite in response to wage cuts. Owners of industries, railroads in particular, were reaping high profits and providing their stockholders with significant dividends while reducing the wages of their employees to a level where they could not support their families. The frustrations among this country's labor force reached an explosive level in July 1877, starting with railroad workers responding to a 10-percent wage cut announced by the four major trunk lines--the Baltimore & Ohio, the Pennsylvania, the Erie, and the New York Central and Hudson.<sup>75</sup>

The first major response to a long list of grievances against the railroads was made by B&O workers at Martinsburg, who had just recently joined the newly formed Trainmen's Union. It was at this important location, approximately 100 miles from the B&O's Baltimore headquarters, that workmen called a strike on July 16, 1877. Spontaneously, without united leadership, the strike spread to a dozen railroad centers, including Pittsburgh, Baltimore, Chicago, St. Louis and San Francisco. Within a few days, one-hundred-thousand men were on strike in the first nationwide labor upheaval in the history of the United States. Throughout much of the country strikebreakers and militia were beaten off by mobs of individuals who had joined the striking railroad workers in numbers far exceeding the disgruntled railroad workers. The railroad strikes were a fuse which caused other workingmen to go on strike, as they too were suffering from wage cuts.<sup>76</sup> The throngs of sympathetic non-railroad workers combined with the underprivileged masses, the hungry jobless, teen-age boys from the slums, as well as tramps and drifters.

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<sup>74</sup>Matthew Josephson, *The Politicos, 1865-1896* (New York: Harcourt, Brace & World, Inc., 1938), p. 252.

<sup>75</sup>Philip S. Foner, *The Great Labor Uprising of 1877* (New York: Monad Press, 1977), p. 10.

<sup>76</sup>*Ibid.*, p. 8; Robert V. Bruce, *1877: Year of Violence* (Indianapolis & New York: The Bobbs-Merrill Company, Inc., 1959), Introduction.

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Before the "Great Strike of 1877" ended, it had broadened into something like a social uprising; it was a "crisis of our national development, the nearest thing we ever had to a class revolution."<sup>77</sup> Historian James Ford Rhodes recalled the Great Strike as a "social uprising" that "seemed to threaten the chief strongholds of society and came like a thunderbolt out of a clear sky."<sup>78</sup> The assessment by Rhodes, a contemporary to the event, was echoed one-hundred years later by another historian, Philip Foner, when he wrote "a general railroad strike developed into a national conflagration that brought the country closer to a social revolution than at any other time in its century of existence except the Civil War."<sup>79</sup> The Great Strike of 1877 "marked the end of ...America's first century and the beginning of a new age of industrial conflict and change."<sup>80</sup>

The Martinsburg shop complex is the most intact railroad facility which played a role in this national labor conflict. It was the site of pivotal early events; yet, while violence occurred here, the shop complex was spared the level of strike-related violence that erupted at other flashpoints. The conflagrations which destroyed vast amounts of railroad property in other railroad centers across the United States consumed the complexes in and around which the Great Strike occurred. After the strike, the Martinsburg site survived another threat that befell the remainder--the widespread demolition and replacement of nineteenth century railroad buildings for operational reasons.

**Martinsburg and the Great Railway Strike**

Martinsburg, the county seat of Berkeley County, West Virginia, was incorporated as a town in 1778.<sup>81</sup> At that time it was part of Virginia. Martinsburg became part of West Virginia when the state was created on June 20, 1863, following the May 1862 approval by the "free" Virginia Legislature for the separation of West Virginia. A major factor in having Martinsburg and the rest of the Eastern Panhandle of West Virginia included in the new state was the extremely strong political and military interest in having all of the former Virginia counties through which the Baltimore and Ohio Railroad passed included within the new pro-Union state. Both the Union and Confederate forces wanted to control the B&O, which was one of the most important east-west lines in the country and a key artery into the Baltimore-Washington area.<sup>82</sup> The military necessity of controlling the B&O--and the B&O's strategic importance--made Martinsburg a center of military action (and destruction), and the town changed hands several times during the Civil War.<sup>83</sup>

By the time of the July 1877 strike, Martinsburg was again a key B&O maintenance facility. It was a railroad-oriented town, where hundreds of workers in the town of 8,000 inhabitants worked for the B&O and where businessmen were heavily dependent upon the railroad for their livelihood.<sup>84</sup> With pay cuts affecting wide

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<sup>77</sup>Bruce, *1877: Year of Violence*, Introduction.

<sup>78</sup>Josephson, *The Politics*, p. 253.

<sup>79</sup>Foner, *The Great Labor Uprising of 1877*, p. 8.

<sup>80</sup>American Social History Productions, Inc., *1877: The Grand Army of Starvation* (New York: American Social History Project at the City University of New York, 1987), p. 1.

<sup>81</sup>City of Martinsburg, *Walking Tour Guide: Historic Properties of Martinsburg* (Martinsburg: City of Martinsburg, W. Va., 1994), p. 12.

<sup>82</sup>Otis K. Rice, *West Virginia and Its People* (Parsons, West Virginia: McClain Printing Co., 1972), pp. 195-198.

<sup>83</sup>Jeff Hollis, "The Baltimore and Ohio Railroad Story as Pertaining to Berkeley County," *The Berkeley Journal*, no. 12 (Martinsburg, W. Va., The Berkeley County Historical Society, 1983), p. 9.

<sup>84</sup>Foner, *The Great Labor Uprising of 1877*, p. 33; Bruce, *1877: Year of Violence*, p. 70.



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swaths of the city's populace, Martinsburg was a place where the citizens clearly understood and appreciated the plight of the railroad workers. Their support came in the form of urging them to resist the treatment they were receiving from the B&O management. There was strong resentment by the workers and their supporters of the railroad's callous labor policy, which included great disparity between the way it treated its workers and the way it favored top management and company stockholders. With the B&O, as with the other major railroads in the country, there was "too much pay and speculation among the head men--big salaries, wine suppers, free passes and presents to Congressmen for their votes."<sup>85</sup>

Railroads were unquestionably the dominant force in American economic life in 1877. The railroads had become the "greatest creators of wealth, the biggest employers, the most energetic sponsors of immigration and nation-building, and the most ruthless displacers of people who could not fit into the new order." They had become a social and commercial institution in their own right, physically interconnecting with every other social and commercial institution. "The railroad reached into every corner of life, affecting every part of society."<sup>86</sup> The power of the railroads at this time was such that they "were the cornerstone of industrial feudalism...recognizing and receiving no checks on their power, either from government or the workers."<sup>87</sup> Railroads, the country's largest businesses, were fast becoming economically indispensable. The Pennsylvania Railroad, the largest of the railway companies, controlled 6,600 miles of line and employed 200,000 men. By the 1870s, all land transportation of persons and goods, except that of a local nature, was dominated by rail. Turnpikes, canals and natural waterways, which had played a prominent role as carriers of the nation's freight prior to the Civil War, had been replaced by the railroads. As the railroads expanded, so too did their economic power. Entire regions lay in their grip, with communities either flourishing or disappearing at the whim of the railroad managers.<sup>88</sup>

The railroads were so powerful that they chose to fight the government at all levels against freight rate regulation. The right of state governments, in particular, to regulate rates charged by businesses, such as grain elevators, had been upheld by the U.S. Supreme Court in the *Munn v. Illinois* case on March 1, 1877.<sup>89</sup> Shortly after the Supreme Court decision, the railroads demonstrated their challenge to the right of the states to regulate rates they charged for freight being carried on their lines by raising all of the freight rates in the East by fifty percent. In conjunction with the raising of freight rates, the four major lines in the East--the Pennsylvania Railroad, the New York Central and Hudson River Railroad, the Erie Railroad, and B&O--set up a rate-control pool whereby the combined freight receipts were consolidated and redistributed according to the volume of business on each line.<sup>90</sup> This agreement stopped the freight war among the four leading railroads. The four railroads then agreed to slash the pay of their workmen by 10 percent in order to increase their profits and to

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<sup>85</sup>Bruce, *1877: Year of Violence*, p. 75.

<sup>86</sup>William L. Withuhn, Editor, *Rails Across America: A History of Railroads in North America* (New York: Smithmark Publishers, Inc., 1993), p. 6.

<sup>87</sup>Sidney Lens, *The Labor Wars from the Molly Maguires to the Sitdowns* (Garden City, New York: Doubleday & Company, 1973), p. 39.

<sup>88</sup>Foner, *The Great Labor Uprising of 1877*, p. 14.

<sup>89</sup>Kermit L. Hall, Editor in Chief. *The Oxford Companion to the Supreme Court of the United States* (New York: Oxford University Press, 1992), pp. 566-567.

<sup>90</sup>Thomas H. Harman, "Starving by Inches: The Railroad Strike in Martinsburg, W.Va., July 16-19, 1877," p. 4. Paper prepared for Shippensburg University, Shippensburg, Pa., April 1990.

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reward their stockholders with good dividends. The 10-percent cut for all workers making more than \$1.00 a day went into effect on the New York Central and Hudson Railroad and the Pennsylvania Railroad on June 1, 1877, with the Erie Railroad making its cut effective July 1. On July 11, John W. Garrett, president of the Baltimore and Ohio, announced that the same cut for its employees would go into effect on July 16. This was the second 10-percent cut for B&O employees in eight months.<sup>91</sup> B&O workers were extremely frustrated that the B&O directors who had voted for the wage cut had at the same time voted for a ten percent dividend for company stockholders.<sup>92</sup>

Railroad workers in general complained about the wage cuts and poor working conditions. They felt helpless in doing anything about it, however. Yet with workers on the B&O it was a different matter when the July 11, 1877, pay cut went into effect--they had reached their limit. During the three years preceding July 1877, B&O workers had suffered reductions of 50 percent of what they had earned before the Panic of 1873. They had sustained cuts averaging 30 percent more than the general average of reductions in railroad wages throughout the country and, except for the workers on the New York Central Railroad, they were the lowest-paid men on any railroad in the country. On a monthly basis, B&O firemen's wages had dropped from \$55.00 per month in 1873 to \$30.00 in 1877; brakemen from \$70.00 to \$30.00, and conductors from \$90.00 to \$50.00.<sup>93</sup> From this reduced salary the men had to pay inflated rent at company-owned hotels when they had to lay over, without pay, at the end of the line. And, to get back home they had to pay the regular passenger rate, inasmuch as they were not given free passes as were the politicians, ministers, etc. After meeting these extra expenses, many of the men had only \$10.00 dollars a month left to support their families.

To make matters worse, by the middle of July the men had not received their pay for June. The company did little to help employees. In addition to pay cuts, the men were subjected to a series of company measures requiring more work for less pay: extra cars, reduced crews, and no overtime pay for Sunday work.<sup>94</sup>

As the deadline approached for the newest wage reduction, to be enacted at noon on July 16, workers held meetings at many points along the 2,700-mile length of the B&O lines extending from Baltimore in the East to Chicago at the northeastern terminus and St. Louis at the southwestern terminus. Appeals made to B&O vice-president John King, Jr. to reconsider the cut went unheeded. By this time it was becoming apparent to the workers that they would have to take matters into their own hands and strike against the company. Workers now had the opportunity to bring the recently formed Trainmen's Union into action. While the union at large did not coordinate plans for a strike, individual sections of the union began acting on their own. The workers knew that a conventional strike would last only until strikebreakers could be brought in. Thus, they decided upon a strategy to "beat off strikebreakers by force, seize trains, yards, roundhouses, do whatever is necessary."<sup>95</sup> The first overt action against the company came mid-morning on July 16 when brakemen, firemen and an engineer or two left their freight trains idle at Camden Junction, about three miles west of Baltimore. Strikebreakers were immediately sent out by the company to start moving the trains again and forty Baltimore policemen dispersed the strikers without violence. By mid afternoon freight trains were again

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<sup>91</sup>*Ibid.*, 5; Gray, in Withuhn, *Rails Across America*, p. 49.

<sup>92</sup>Bruce, *1877: Year of Violence*, p. 65.

<sup>93</sup>*Ibid.* p. 33.

<sup>94</sup>Bruce, *1877: Year of Violence*, p. 65.

<sup>95</sup>*Ibid.*, p. 74.

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running regularly. B&O vice-president King assured reporters that there would be no more trouble and that the strikers had all been fired, and their jobs were already filled.<sup>96</sup>

B&O officials had gravely underestimated the Trainmen's Union, especially members like Richard M. Zepp, a young (in his twenties) brakeman from Martinsburg, West Virginia. Zepp, "a born leader, enterprising, intelligent, ready in speech and 'decidedly prepossessing' in appearance," was the leader of the B&O workers in Martinsburg. Son of a B&O engineer, Zepp had grown up in railroad-centered Martinsburg.<sup>97</sup> Practically all of the railroad workers in Martinsburg were members of the Trainmen's Union, whose local lodge had been established in June under the direction of the national union leader, Robert Ammon, a 24-year-old Pennsylvania Railroad brakeman from the Pittsburgh area.<sup>98</sup> The citizens of Martinsburg (who were quite dependent upon the B&O for their livelihood), and one of the town's two papers, *The Statesman*, were strongly behind the workers in whatever stand they might take against the railroad. *The Statesman* was the decidedly pro-labor Martinsburg weekly paper, while the other Martinsburg weekly, the *Martinsburg Independent*, was less sympathetic to the workers' plight.

What was about to happen at Martinsburg was quite different from what had happened earlier in the day at Camden Junction. Martinsburg, being in West Virginia, was farther away from the tremendous influence the B&O officials in the main offices in Baltimore exerted over state and local officials. The Martinsburg townspeople, many of whom were railroad workers or members of their families, as well as the local police and the local militia, the Berkeley Light Infantry, were supportive of the workers. If laws were to be broken in support of the workers, Martinsburg was a natural place for it to happen.<sup>99</sup>

While during the day on July 16 there had been excitement around the Martinsburg B&O Railroad facilities--with men collecting in groups at the depot, the maintenance complex, the switches and along the tracks<sup>100</sup>-- it was near sunset that the first real resistance was demonstrated. A cattle train abruptly stopped and its entire crew abandoned it. With the police and growing crowds gathering around the depot, railroad employees calmly uncoupled the engines, ran them into one of the two roundhouses<sup>101</sup> and announced to road officials that no more freight trains would leave Martinsburg in either direction until the 10-percent cut was rescinded.<sup>102</sup> The "strike" order to stop trains was directed only toward freight trains. Passenger and mail trains would be allowed to move unchallenged. About 8:00 P.M., word of the Martinsburg action was telegraphed to the main offices in Baltimore (likely from the Martinsburg depot hotel, across the tracks from the maintenance complex, where the town's main railroad telegraph office was located). When B&O officials answered back with questions, the strikers responded with their firm notification that no freight trains would be allowed to pass through

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<sup>96</sup>*Ibid.*, 75; Harman, "Starving by Inches," p. 7.

<sup>97</sup>Bruce, *1877: Year of Violence*, p. 75.

<sup>98</sup>Foner, *The Great Labor Uprising of 1877*, p. 35; Harman, "Starving by the Inches," pp. 7-8.

<sup>99</sup>Bruce, *1877: Year of Violence*, p. 75.

<sup>100</sup>F. Vernon Aler, *A Full and Complete History of Martinsburg and Berkeley County, West Virginia, Past and Present* (Hagerstown, Md.: The Mail Publishing Company, 1888), p. 302.

<sup>101</sup>It is unknown which roundhouse. The significance of the west roundhouse would be increased even more if certain incidents such as this could be unequivocally tied to it. Yet, throughout contemporary reports no differentiation is made between the two roundhouses. It is plain that the entire complex was awash with strikers, crowds, and eventually troops.

<sup>102</sup>Bruce, *1877: Year of Violence*, p. 76.

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Martinsburg until the pay cut was withdrawn.

B&O officials began to fire off telegrams addressing the "riot" in Martinsburg, and felt it urgent to inform West Virginia Governor Henry M. Matthews. This they did through a telegram from Thomas H. Sharp, the road's Master of Transportation, to R.T. Devries, the General Agent for the B&O in Wheeling, the state capital at the time. At the same time, B&O Vice-President King wired the governor that rioters had taken the firemen from the cattle train and that trains were being held up by a mob. According to King the local authorities were powerless to suppress the riot, which King exclaimed, may lead to very serious consequences unless checked. Expecting trouble all along the line through West Virginia, the B&O urged the governor to provide whatever assistance he could to preserve peace.<sup>103</sup> Meanwhile, back in Martinsburg, Mayor A.P. Shutt was addressing the strikers and an increasing number of sympathetic townspeople at the B&O depot/hotel. The mayor, who had close ties with the B&O,<sup>104</sup> advised the men to return to work only to be hooted at and ridiculed. Realizing the strikers were not heeding his request, the mayor ordered the police into the crowd to arrest the leaders. In the ensuing (apparently non-violent) frantic confrontation, the strikers rebuffed police efforts to instill order and make arrests. The mayor and policemen finally withdrew from the scene. By midnight of July 16 the machine shops, depot and roundhouses were deserted except for a number of union men left to guard the tracks and prevent freight trains from passing.<sup>105</sup>

As the night progressed, Governor Mathews wrestled with the question of what he should do about the Martinsburg situation. The state militia closest to the area was a company of volunteer militiamen, the Berkeley Light Infantry, under the command of one of the town's most popular citizens, Colonel Charles James Faulkner, Jr. Yet, sending state militia was out of the question because the West Virginia legislature had abolished the use of state militia in quelling civil disturbances two years earlier. Regardless, Governor Mathews telegraphed Colonel Faulkner about 12:30 A.M. directing him if necessary to call out his command (unknown to the governor, made up largely of railroad men or men who sympathized with the workers) to aid and protect the civil authorities. Twice during the evening Faulkner asked the governor for clarification of exactly what he was supposed to do. In his responses to Faulkner, the governor seemed ambivalent regarding the use of force: "Avoid using force if possible, but be sure that the law is executed and the riot suppressed. Give all necessary aid to the civil authorities. I rely on you to act discreetly and firmly." In his communication with Faulkner, the governor indicated his understanding of the gravity of the situation in Martinsburg after having received reports from B&O vice-president King:

I am informed that the rioters constitute a combination so strong that the civil authorities are powerless to protect the law. If this is so, prevent any interference by the rioters with the men at work, and prevent obstruction of the trains.<sup>106</sup>

In the early morning hours of July 17, citizens of Martinsburg were awakened by the shrill whistle of a locomotive with steam up. The B&O's master of transportation, Thomas Sharp, had arrived and was attempting to make good a promise. He had told the governor that he would have the trains moving by 5:00 A.M. He was able to get this action started through the help of W. H. Harrison, master mechanic of the B&O, and a Mr.

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<sup>103</sup>*Ibid.*

<sup>104</sup>Harman, "Starving by the Inches," pp. 9-10.

<sup>105</sup>Foner, *The Great Labor Uprising of 1877*, p. 35.

<sup>106</sup>Harman, "Starving by Inches," p. 12; Aler, *A Full and Complete History of Martinsburg and Berkeley County*, p. 304.

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French who had arrived from Cumberland, Maryland. The locomotive was attached to the cattle train that had been stopped during the evening of July 16. A strikers' guard from the roundhouses ordered the non-striking men to stand still or they would be killed. Meanwhile, strikers congregated around the depot while Harrison tried (unsuccessfully) to talk them into letting the train move. They proceeded to swarm upon the train's foot-boards, climbed over the coal in the tender and then into the cab, and drove the crew from their posts. The strikers uncoupled the engine and ran it into one of the roundhouses.<sup>107</sup>

Action at Martinsburg moved into a more intense phase about 9:00 A.M. when Colonel Faulkner and his company of about seventy-five men arrived, marched down a set of steps near the depot/hotel and assembled near the roundhouses. Colonel Faulkner addressed the strikers and their families for almost an hour (most likely from the depot's porch), telling them of "the folly and fruitlessness of their present course of action," while deep inside he was sympathetic to their cause. He warned the strikers that if they interfered any further it would be at their own peril. The crowd, numbering about 500, including strikers, members of their families, and supporting townspeople, laughed at Faulkner. The Colonel felt that he had no choice but to order his men to prepare for action. With military protection, Harrison and French, with an engineer and firemen, returned to the roundhouse and moved the engine out. With soldiers on either side with their bayonets fixed and guns loaded, the engine was moved west toward where the cattle train (with cattle still aboard) was located. Progress was slow due to the close-formed ranks of the strikers, whose anger by this time had risen to "white heat."<sup>108</sup>

After the engine was attached to the cattle car, the train moved toward the switch leading to the main track. On the cow-catcher was a member of Faulkner's Light Infantry, John Poisal. Poisal soon realized that something had been done to the switch ball which, unless changed back to its original position, would cause the train to move to another side track. "With musket in hand," Poisal immediately jumped to the ground and ran ahead to the switch. Just as he was in the act of reversing the switch ball, William Vandergriff, a striking fireman who had tampered with the switch ball, yelled out: "Don't you touch that switch!" Poisal, while firmly grasping the iron, responded, "I'm not going to see the train run on a siding if I can prevent it." Vandergriff drew a small pocket pistol from his belt and fired two shots at Poisel. One bullet struck the side of Poisal's forehead--the other shot missed. Poisal and another soldier fired simultaneously hitting Vandergriff three times, shattering a bone in his left arm, tearing off his right thumb and lodging a bullet in his thigh. Both wounded men were taken to their homes. Poisal fully recovered, but Vandergriff, after having his arm amputated, died the next day.<sup>109</sup> In the eyes of the other strikers, many citizens of Martinsburg, and the pro-labor weekly Martinsburg paper, *The Statesman*, Vandergriff died a martyr "to what he believed to be a compulsory duty. He was shot down in sight of the lowly home whose inmates he was trying to shield from starvation." Besides, he left a wife "in a very delicate condition and without pecuniary means."<sup>110</sup>

On that fateful day, July 17, as Vandergriff and Poisal were being taken to their respective homes,

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<sup>107</sup>Aler, *A Full and Complete History of Martinsburg and Berkeley County*, p. 307.

<sup>108</sup>*Ibid.*, 309; Harman, "Starving by Inches," pp. 14-15; *The Shepherdstown Register and Jefferson County Advertiser*, Saturday, July 21, 1877, p. 1.

<sup>109</sup>Aler, *A Full and Complete History of Martinsburg and Berkeley County*; Harman, "Starving by Inches," p. 15; *The Shepherdstown Register and Jefferson County Advertiser*, July 21, 1877, p. 1.

<sup>110</sup>*The Statesman*, Martinsburg, West Virginia, July 31, 1877, p. 1.

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the crowd, the soldiers, the strikers and officials, the mayor and the colonel saw only the blood shining wetly from the rails and springing in a bright red splotch over the cinders. Before that violent summer ended, a red blot would spread across the nation. This first installment was enough for Martinsburg.<sup>111</sup>

Colonel Faulkner withdrew his militia. He had fulfilled his orders and his men, who had trouble firing upon relatives and friends, were ready to go home. After all, Faulkner had not given the order to fire; his men had fired in response to Vandergriff's firing. When the volunteer engineer and fireman attempting to run the train ran off when the shooting began, Colonel Faulkner felt he could do nothing more. The militia company marched to their armory and disbanded, "leaving the rioters in possession of the field, and the road blocked up with standing trains on the sidings."<sup>112</sup>

As of July 17, only passenger and mail trains were moving through Martinsburg. Seventy-five freight trains were stopped on the sidings at Martinsburg, comprising 1,200 cars loaded with coal, grain and other freight, including seventy-five cattle cars, holding about 700 head of stock. The cattle, which had been standing for hours in the stock trains, were suffering from the excessive heat. The strikers allowed some of the stock to be shipped out over the Cumberland and Western Maryland Railroad.<sup>113</sup>

Faulkner sent Governor Mathews three telegrams: one describing the incident on the morning of July 17, the second to tell the governor that the strikers were "too formidable for me to cope with", and the third describing the current situation as "one of great excitement." Faulkner recommended that the governor send aid to Martinsburg other than that which could be found in Martinsburg. The governor responded tartly to Faulkner:

The peace must be preserved and law abiding citizens must be protected. Whatever force necessary to accomplish this will be used. I can send if necessary, a company in which there are not men who will be unwilling to aid in suppressing the riot and exercising the law.<sup>114</sup>

Mathews's seeming boldness had little to back it up. The state militia was in bad shape. Following the Civil War, compulsory muster and drill were abolished and enrollment was low. Of the four militia companies in the state, two were in Martinsburg. Faulkner (and another local commander named Shaffer) led these companies, and neither possessed the wherewithal to deal with the Martinsburg trouble. The only reliable company at Mathews's disposal was a sixty-man Wheeling company, the Mathews Light Guards. Thirty-two of the Guards, their commanding officer, W.W. Miller, and twenty volunteers were mustered at the State Capitol in Wheeling at noon on Tuesday, July 17. By 2:00 P.M., the Light Guards marched out of Capitol Square to their special Martinsburg-bound train with rations and twenty rounds of ammunition apiece.<sup>115</sup>

Even before the Guards left Wheeling, Governor Mathews was facing pressure from B&O president John Garrett to ask President Rutherford B. Hayes to send federal troops to Martinsburg--for after all, the federal

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<sup>111</sup>Bruce, *1877: Year of Violence*, p. 78.

<sup>112</sup>*The Shepherdstown Register and Jefferson County Advertiser*, Saturday, July 21, 1877, p. 1.

<sup>113</sup>*Ibid.*

<sup>114</sup>Harman, "Starving by Inches," p. 17.

<sup>115</sup>Bruce, *1877: Year of Violence*, pp. 79-80.

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government had sent troops to break up a strike on the B&O in August 1865. Furthermore, Garrett was alarmed that the strike was spreading over all of the B&O divisions. "The loss of an hour," he assured the governor, "would most seriously affect us and imperil vast interests."<sup>116</sup> The governor was keenly aware of how politically unwise it would be for him to defy the powerful B&O president. Yet, Mathews was quite reluctant to call for federal assistance until he could see what the state could do to bring things under control at Martinsburg. He felt that sending of the Light Guard would be all that was necessary.<sup>117</sup> Hoping to convince B&O officials that he had everything under control, Mathews accompanied the Light Guard in a private railroad car as far as Grafton, where he met with B&O vice-president William Keyser. While in Grafton, the governor told an assembled crowd that he knew nothing about the merits of the quarrel between railroad workers and management, and that his sole duty in the situation was to make sure that no man was forcibly prevented from working for whom he pleased and at such pay as he was willing to accept. Vice-President Keyser addressed the necessity of the pay cut, promising protection for those who stayed on the job and vowing to fire those who refused to work.

B&O officials were not convinced that the governor's Light Guard would be able to reverse things in Martinsburg. Shortly before midnight on July 17, B&O vice-president John King telegraphed the B&O's Washington agent that Mathews might soon call for federal troops. The agent was asked to see the Secretary of War and inform him of the serious situation of affairs and that he should be ready to send the necessary force to the scene of action at once.<sup>118</sup> The alarmist position taken by B&O officials was unwarranted by what was happening in Martinsburg. Nothing much had happened at Martinsburg since the violent incident before noon.

By 11:00 P.M. on the 17<sup>th</sup>, the strikers were informed that the strike had extended over the entire line. This news greatly encouraged the strikers, who felt confident and determined that the strike would be successful. At midnight it was reported that about 200 strikers and their supporters were strung along the railroad tracks in squads, armed with pistols and a few guns. A newspaper reporter also noted that "perfect order prevails, and even the conversations of the strikers discussing the situation are in subdued tones." Furthermore, no damage had been done or attempted on railroad property. The assessment of this reporter was that "The men engaged in the strike say they do not mean to molest any person. All they ask is a living compensation for their labor. They say that at the present prices the firemen cannot pay their daily expenses, much less support their families."<sup>119</sup>

At 8:00 A.M. on the 18, a mail train with three passenger cars carrying the Mathews Light Guard arrived in Martinsburg. The fifty-four-member contingent consisted of thirty-two regular guards and twenty volunteers in addition to their immediate commanding officer, Captain W.W. Miller, and Governor Mathews's aide and deputy in command of the state militia, Colonel Robert M. Delaplain. Soon after arriving, Delaplain read to the strikers and assembled supporters a proclamation from the governor that stated that Mathews had nothing to do with the labor dispute. As governor, however, Mathews maintained that he was duty bound to enforce state laws and to restore peace to the town.<sup>120</sup> Delaplain then huddled with the railroad and town officials. A

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<sup>116</sup>Harman, "Starving by the Inches," pp. 17-18.

<sup>117</sup>Bruce, *1877: Year of Violence*, p. 80.

<sup>118</sup>*Ibid.*, p. 81.

<sup>119</sup>*The Shepherdstown Register and Jefferson County Advertiser*, July 21, 1877, p. 1. This account was telegraphed to the *Baltimore Sun* from Martinsburg—titled—MIDNIGHT NEWS FROM THE SEAT OF WAR—Martinsburg, W. Va., July 17.

<sup>120</sup>Harman, "Starving by Inches," p. 21.

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decision was made to leave the militia in the cars so as not to inflame the strikers. It was not until 2:00 P.M. that the Light Guards were able to leave the railroad cars which had been standing in the broiling sun all day with the shutters drawn. The guards, in their gray uniforms stained with perspiration, were marched from their cars to their quarters in the courthouse without seeing any action. It was just as well, because they appeared fatigued already.<sup>121</sup>

Despite the absence of any violence on the part of the strikers, Colonel Delaplain gave a despairing account in his telegram to the governor:

The feeling here is most intense, and the rioters are largely cooperated with by civilians... The disaffection has become so general that no employee could now be found to run an engine even under certain protection. I am satisfied that Faulkner's experiment of yesterday was thorough and that any repetition of it to-day would precipitate a bloody conflict, with the odds largely against our small force. Capt. [sic] Faulkner thinks that two hundred U.S. Marines would not be in excess of the requirement.<sup>122</sup>

Delaplain was criticized by the *Martinsburg Independent* for making "much ado about nothing" and acting "very indiscreetly" in sending an exaggerated report to the governor asking for federal troops.<sup>123</sup> Nevertheless, it was on the basis of Delaplain's telegram that Governor Mathews telegraphed President Hayes on July 18:

Owing to unlawful combinations and domestic violence now existing at Martinsburg and at other points along the line of the Baltimore and Ohio Railroad, it is impossible with any force at my command to execute the laws of the State. I, therefore, call upon your Excellency for the assistance of the United States military to protect the law abiding people of the State against domestic violence, and to maintain the supremacy of the law.

The Legislature is not now in session and could not be assembled in time to take any action in this emergency. A force of from two to three hundred troops should be sent without delay to Martinsburg, where my aide, Col. Delaplain, will meet and confer with the officer in command.<sup>124</sup>

Mathews informed Garrett of his telegram to President Hayes. This prompted Garrett to send two telegrams: one to Mathews complimenting him and the other to President Hayes urging him to comply immediately with Mathews' request, because the state had done all it could "to suppress this insurrection" and that "this great national highway can only be restored for public use by the interposition of the U.S. forces." Garrett warned Hayes: "Unless this difficulty is immediately stopped, I apprehend the gravest consequences, not only upon our line, but upon all the lines in the country which, like ourselves, have been obliged to introduce measurers of economy in these trying times."<sup>125</sup>

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<sup>121</sup>Bruce, 1877: *Year of Violence*, pp. 83-84.

<sup>122</sup>*Ibid.*, p. 84.

<sup>123</sup>*Martinsburg Independent*, Saturday, July 21, 1877, p. 4.

<sup>124</sup>Bruce, 1877: *Year of Violence*, p. 84; *The Statesman*, July 24, 1877, p. 2.

<sup>125</sup>Bruce, 1877: *Year of Violence*, p. 85.



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Mathews was severely criticized by the pro-labor Martinsburg weekly paper, *The Statesman*. While condemning Mathews for what it saw as his being “in the hands” of his friend, John Garrett, *The Statesman* addressed its concerns regarding the B&O in more profoundly dramatic terms:

It mattered not what the conduct of this defiant corporation had been towards its employees. No matter by its selfishness it was its purpose to order by starvation the hands that poured golden treasures into its coffers—no matter that the wife and children in the humble home of its laborers, needed but enough to stay the cravings of hunger—all this was nothing—John W. Garret’s trains must not be hindered, though blood—the blood of starving men—his [Mathews’] own fellow citizens, should run ankle deep along the highway of this foreign, heartless corporation.<sup>126</sup>

The paper continued to criticize Mathews, maintaining that the governor had overstepped his constitutional duty and his oath of office “when at the bidding of John W. Garrett he applied for the aid of federal troops.” The strike of the employees of the B&O Railroad was not an insurrection, according to *The Statesman*. Mathews “knew full well,” the paper noted, “that these starved men, were not in insurrection against the peace of the commonwealth—such a thing had never entered their heads...It was but a pitiful subterfuge,” *The Statesman* charged, that Governor Mathews addressed the president calling for troops. The reporter went on to capture the feeling of the strikers when he repeated what he heard one worker say: “I had might as well die by the bullet as to starve to death by inches.” In its heated discussion of the injustices imposed by the B&O upon its workers, the paper repeatedly referred to the railroad as “a foreign railroad corporation.” According to *The Statesman*,

If the soil of West Virginia is to be made the battleground between a foreign railroad corporation and its employees...[and if] the highways extending through the State’s domain, belong to foreign corporations, can be turned into an armed camp for U.S. soldiers, and the counties contiguous placed under martial law, then we may as well bid farewell to local government.<sup>127</sup>

While the editors of *The Statesman* differed with their counterparts at the other Martinsburg weekly, the *Martinsburg Independent*, in the level of support for the strikers, both papers were highly critical of the way in which out-of-town newspapers presented exaggerated accounts of what really happened at Martinsburg and in doing so slandered the reputation of the town.<sup>128</sup>

The publicity associated with Governor Mathews’ call for federal troops brought Martinsburg very much to the nation’s attention. The spread of the strike throughout the entire B&O line and to other lines made what was happening at Martinsburg a very important chapter in what was happening (or was about to happen) in the rest of the country. Conditions, not only with the railroads but industry and labor in general, were such that “nothing could scatter the seeds of labor unrest so far and so fast as a railroad strike, and never before had the waiting ground been so thoroughly plowed and harrowed.”<sup>129</sup> The form in which labor was to rise up, whether as striking railroad workers or sympathetic workers in other industries who saw a real opportunity to express their dissatisfaction, would prove to be more than any one state could manage. Therefore, it appeared that even

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<sup>126</sup>*The Statesman*, July 24, 1877, p. 2.

<sup>127</sup>*Ibid.*

<sup>128</sup>*Martinsburg Independent*, Saturday, July 21, 1877, p. 4.

<sup>129</sup>Bruce, 1877: *Year of Violence*, p. 85

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if Mathews had not called upon President Hayes for help, Hayes soon would have been forced to act in helping to resolve a national labor crisis.

President Hayes was no stranger to conflict, having served as a major general in the Civil War, two terms as a congressman from Ohio, and three terms as governor of that state. He was sympathetic to industrial leaders, and in his last year as governor he sent state militia to Massillon and successfully broke a coal miners' strike. Breaking that strike caused Hayes to be hailed as the "law and order" candidate during his campaign for President.<sup>130</sup> There was still concern in the minds of many Americans, however, as to whether or not Hayes was rightfully the president, considering that he had trailed Samuel J. Tilden in popular votes, and had won by one electoral vote, which was still being disputed.<sup>131</sup>

Therefore, President Hayes had several concerns about sending federal troops to Martinsburg. Foremost, he needed to be assured that the state was "unable to suppress the insurrection," and to know what force the state could raise and how strong the "insurgents" were. Governor Mathews responded to this inquiry, which Secretary of War George W. McCrary had submitted on behalf of the President: "I have no doubt that within ten days I could organize with the State a force sufficient to suppress any riot, but in the meantime much property may be destroyed, and what is more important, valuable lives lost."<sup>132</sup> The president's other major concern about sending federal troops to Martinsburg was the condition of the U.S. Army. The army had been reduced to a peacetime total of 25,000 men, with most of that force stationed west of the Mississippi River. To complicate matters more, the army was going without pay because Congress had adjourned before passing the Army Appropriation Bill. In fact, men of the Second United States Artillery stationed at Fort McHenry in Baltimore had not been paid for seven months.<sup>133</sup> The immediate request from Governor Mathews for 200-300 men, however, posed no serious problem because they could be supplied from the Baltimore/Washington area.<sup>134</sup>

While sending federal troops to West Virginia was contrary to the president's personal philosophical policy of "trust, peace, and to put aside the bayonet," he made his decision final at four o'clock, Wednesday afternoon, July 18, by issuing a proclamation which read:

Whereas, it is provided in the Constitution of the United States, that the United States shall protect every State in the Union on application of the Legislature, or the Executive, where the Legislature cannot be convened, against domestic violence; and, whereas, the Governor of West Virginia has represented that domestic violence exists in said State at Martinsburg, and at other points along the line of the B&O Railroad in said State, which the authorities of said State are unable to suppress; and, whereas, the laws of the United States required, that in all cases of insurrection in any State, or obstruction of the laws thereof whenever it may be necessary in the judgment of the President, he shall forthwith, by proclamation, command such insurgents to disperse and retire peaceably to their respective abodes within a limited time. Now, therefore, I Rutherford B. Hayes, President of the United States, do hereby admonish all good citizens of the

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<sup>130</sup>Foner, *The Great Labor Uprising of 1877*, p. 41.

<sup>131</sup>Bruce, *1877: Year of Violence*, p. 86.

<sup>132</sup>*Ibid.*, p. 90.

<sup>133</sup>*Ibid.*, p. 93.

<sup>134</sup>Foner, *The Great Labor Uprising of 1877*, p. 42.

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United States, and all persons within the territory and jurisdiction of the United States against aiding, countenancing, abetting, or taking part in such unlawful proceedings; and I do hereby warn all persons engaged in or connected with said domestic violence or obstruction of the laws, to disperse and retire peaceably to their respective abodes on or before twelve o'clock noon, of the nineteenth day of July...In witness whereof, I have hereunto set the seal of the United States to be affixed. Done at the city of Washington, the eighteenth day of July, in the year of our Lord, eighteen hundred and seventy seven and of the independence of the United States the one hundred and second.<sup>135</sup>

By the President,                      R.B. Hayes  
Acting Secretary of State        F.W. Seward

To put his proclamation into effect, President Hayes directed his adjutant general to wire commanding officers at the Washington Arsenal and at Fort McHenry in Baltimore to send every available man to Martinsburg as soon as possible. Transportation would be provided by the B&O, but at federal expense as reflected later in B&O's billing of the federal government.<sup>136</sup> Not much time was wasted in getting the troops ready to move out to Martinsburg. At dusk on the 18<sup>th</sup>, the Second U.S. Artillery, consisting of eight officers and 112 men, left Fort McHenry for Washington where they would be joined by twelve officers and 112 men from the Washington Arsenal. Colonel William H. French, a seasoned military man, forty years out of West Point and a veteran of the Seminole, Mexican and Civil Wars, was in charge of the overall command.

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<sup>135</sup>*Martinsburg Independent*, Saturday, July 21, 1877, p. 4; Foner, *The Great Labor Uprising of 1877*, p. 42.

<sup>136</sup>Bruce, *1877: Year of Violence*, p. 91.

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French's consolidated command left Washington at 10:00 P.M. Wednesday evening, arriving at Martinsburg at 6:30 in the morning, July 19. The federal troops would have arrived at Martinsburg much sooner had their train not been slowed down at Harper's Ferry, West Virginia. Without conferring with Colonel French, the commander of Mathews Light Guard, Colonel Robert Delaplain, fearing that an attempt would be made to wreck the train carrying federal troops, directed that their train be slowed to three miles an hour for the fifteen miles between Harper's Ferry and Martinsburg.<sup>137</sup> When French and his soldiers disembarked at Martinsburg in a gloomy drizzle they found a blockade of seventy engines and 607 railroad cars creating a line about two miles in each direction.<sup>138</sup> He also found that the "insurrection" had calmed, and most of the strikers had moved away from the shop complex to just beyond the city limits.<sup>139</sup> Nevertheless, French ordered his men to form ranks, open their cartridge boxes, and march to the shops and roundhouses that would serve as their barracks, while he chose a Pullman car in front of the depot as his headquarters.<sup>140</sup> The strikers offered no resistance.

During the morning of the 19th, sheriff's deputies and the town police passed out copies of President Hayes' proclamation directing "all person engaged in said unlawful insurrectionary proceedings to disperse and retire to respective abodes on or before twelve o'clock noon on the 19th day of July..." When twelve o'clock came, nothing much happened--there was no "riotous crowd" to be dispersed, and not much interest generated by the proclamation.<sup>141</sup>

After the arrival of federal troops, things began to happen with regards to the movement of trains. On the afternoon of the 19th, a coal train left Martinsburg bound for Baltimore. Ten federal soldiers rode the train to Harper's Ferry. The trip to Baltimore took ten hours, but there was no opposition. That was not the case, however, when another freight train started moving west soon after the departure of the eastbound train. Even though a squad of regulars rode the train, 100 armed strikers tried to stop the train as it approached the west end of town. This action prompted the fireman to leave the train and refuse to return even though he was promised premium pay by B&O officials. At this point, the sheriff with the assistance of the entire Mathews Light Guard arrested Richard Zepp, the twenty-five-year-old brakeman said to be the leader of the Martinsburg strike.<sup>142</sup> Zepp's brother George, a B&O fireman who did not agree with his brother on the strike, kept the strikers away with his navy revolver and joined the engineer to move the train out. No other freight trains left Martinsburg on the 19th. With the arrest of Richard Zepp and the subsequent arrest of two more strike leaders, along with the presence of federal troops, the heart was cut out of the Martinsburg strike. The strikers at Martinsburg had by this time decided that "they would not molest the United States troops."<sup>143</sup> At 1:40 on the afternoon of July 19th, Colonel French was able to wire Secretary of War McCrary that all was quiet and that he doubted that anything more than a demonstration of force would be required.<sup>144</sup> Indeed, Martinsburg saw no more violence.

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<sup>137</sup>Harman, "Starving by Inches," p. 24.

<sup>138</sup>*Ibid.*

<sup>139</sup>Bruce, *1877: Year of Violence*, p. 94.

<sup>140</sup>Harman, "Starving by Inches," p. 25.

<sup>141</sup>Foner, *The Great Labor Uprising of 1877*, p. 42.

<sup>142</sup>Harman, "Starving by Inches," pp. 27-28. Zepp was freed on \$400 bail.

<sup>143</sup>Bruce, *1877: Year of Violence*, p. 95.

<sup>144</sup>Harman, "Starving by Inches," pp. 26-27.

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On the morning of the 20th, strikebreakers from Baltimore freely began taking freight trains out of Martinsburg. By that evening, the Martinsburg yards had been largely cleared. Colonel Delaplain wired Governor Mathews that "the riot here may be regarded as suppressed."<sup>145</sup> While Delaplain was correct in making such a report to the governor regarding what was happening in Martinsburg, the railroad strike was far from over. Sympathy strikes by other industrial workers, including miners and Chesapeake and Ohio Canal boatmen were gaining momentum. An indication of that was the fact that of the sixteen westbound trains which left Martinsburg on July 20th, only one was allowed to go beyond Cumberland, and that train was stopped less than twenty miles away in Keyser, West Virginia. A further indication that same day that the strike was taking a much more serious turn was the manifesto which strikers posted at Westernport, Maryland, and had copies put up at stations along the B&O line. That manifesto, "the first manifesto issued by the railway strikers," stated in eloquent and fiery terms what their course of action would be if the B&O did not address their grievances:

Strike and live! Bread we must have! Remain and perish! Be it understood, if the Baltimore and Ohio Railroad Company does not meet the demands of the employees at an early date, the officials will hazard their lives and endanger their property, for we shall run their trains and locomotives into the river; we shall blow up their bridges; we shall tear up their railroads; we shall consume their shops with fire and ravage their hotels with desperation. A company that has from time to time so unmercifully cut our wages and finally has reduced us to starvation for such as we have, has lost all sympathy. We have humbled ourselves from time to time to unjust demands until our children cry for bread...We are willing to sacrifice [our lives] not for the company, but for our rights. Call out your armed hosts if you want them...Remember that no foe, however dreaded, can repel us for a moment...We feel confident that the God of the poor and oppressed of the earth is with us. Therefore let the clashing of arms be heard; let the fiery elements be poured out if they think it right, but in heed of our right and in defense of our families, we shall conquer or we shall die.<sup>146</sup>

By mid afternoon of July 20th, conditions in Cumberland, Maryland (the largest city along the B&O between Martinsburg and Wheeling) had become such that Governor John Lee Carroll ordered Brigadier General James R. Herbert of the Maryland National Guard to restore order there by sending whatever portions of the Fifth and Sixth Regiments required. General Herbert was not able to move his troops to Cumberland, however, because of the greater need for them in Baltimore.

Mob action against the troops took over in Baltimore on the evening of July 20th. The mob directed its hatred of the B&O and John Garrett, in particular, against the troops who were defending Garrett's interests. When the troops were assaulted by the mob (numbering in the thousands) in the streets around Camden Station, they fired into the crowds, killing ten men and boys and badly wounding twenty others even though they had been directed to stop their firing. None of the dead or wounded were railroad strikers. While the mayhem was going on outside, inside the depot not only General Herbert and officers and men of the Fifth Regiment, but also Governor Carroll, Mayor Latrobe, the Board of Police Commissioners and various B&O officials including Vice-President King were trapped.

Baltimore city police joined the troops against the crowds, and mob action started again about 9:00 P.M., when

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<sup>145</sup>Bruce, *1877: Year of Violence*, p. 95.

<sup>146</sup>Foner, *The Great Labor Uprising of 1877*, pp. 44-45.

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the defiant mob tore up tracks and demonstrated in front of the Camden Street depot. With alarm, King telegraphed Garrett: "It is said to be the fiercest mob ever known in Baltimore." Soon 15,000 people had assembled around the depot, where people set fire to passenger cars and the passenger platform. This prompted Governor Carroll to telegraph President Hayes, informing him that the rioters had gotten beyond the state's power to control them and that they had "taken possession of the Baltimore and Ohio Railroad depot, set fire to same, and driven off all firemen who attempted to extinguish the flames." Governor Carroll told the President that in Maryland's name, he must now call upon the United States government for military aid. Without questioning, President Hayes authorized federal intervention. Secretary of War McCrary ordered General William Barry, commanding Fort McHenry, to report to Governor Carroll with all available men and to act under Carroll's orders in quelling the riot. Yet, militia and police eventually succeeded in temporarily quelling the rioters and the governor informed the Secretary of War that federal assistance was not immediately needed at the time in Baltimore. His request for federal assistance in Cumberland still stood, however.

In response to Governor Carroll's request for assistance and the threat of continuing unrest in Baltimore, President Hayes on Saturday afternoon, July 21, issued a proclamation bringing the state of Maryland alongside West Virginia within the fold of federal protection. General Barry was given responsibility for overseeing federal operations in and around Baltimore, and Major General Winfield Scott Hancock was sent to Baltimore by the president to confer with Governor Carroll "to take chief command of what was rapidly assuming the form of a major campaign" in the state of Maryland. Violence flared again around Camden Station that Saturday night, and also smaller crowds clashed with police at the railroad's Mt. Clare shops. The federal troops began arriving that night, and by Sunday peace had come to Baltimore. The approach of some 1,200 to 2,000 federal troops there had contributed much to bringing this about.<sup>147</sup> The difficulties on the B&O were not yet over; freight traffic along the main line was still paralyzed and the workers were sticking adamantly to their demands of getting the 10% pay cut rescinded and obtaining several other improvements.

While happenings on the B&O had been getting major attention up to this time, the railroad strike had already spread to other lines. The Pennsylvania Railroad, which began in Philadelphia and ran with its main line west to Pittsburgh, with branch lines extending to Cleveland, Chicago, Cincinnati, and St. Louis, had its strike begin on the morning of July 19th. The strike on that line was in immediate response to the decision by management to have all the eastbound freights out of Pittsburgh to be run as doubleheaders as far as Conemaugh, Pennsylvania. Realizing that this action would result in a 50 % reduction in the number of conductors and brakemen, twenty-five brakemen and conductors refused to take their trains out at 8:00 A.M. on the 19th. They were fired on the spot.<sup>148</sup> The Pennsylvania strike spread to other employees who were not only sympathetic to the conductors and brakemen affected by the doubleheader policy, but they were aggrieved by the 10-percent cut they had received in June and by the numerous abuses inflicted upon them by the railroad.

Tensions began to mount in Pittsburgh. The strong dislike of railroads by the general population (and parts of the press, which editorialized them as "railroad vultures" and "money jugglers"), coupled with the fact that Pittsburgh was a businessmen's town, resulted in enormous support for the railroad strikers from other industrial workers in the city. The unity of all classes in Pittsburgh against the Pennsylvania Railroad was especially ominous.<sup>149</sup> With the extension of the railroad strike which had begun on the B&O to the

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<sup>147</sup>*Ibid.*, p. 49.

<sup>148</sup>Bruce, *1877: Year of Violence*, p. 118.

<sup>149</sup>*Ibid.*, p. 121.

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Pennsylvania Railroad, "the B&O strike became what historians have called the 'Great Strike'--a revolt of American railroad workers against their lot generally and the 10 percent cut in particular."<sup>150</sup>

With expectation of breaking the strike in Pittsburgh, Pennsylvania Railroad officials called upon the state to send in the state militia. An acting state official had to make the decision, because at the time Governor John F. Hartranft was on a western vacation at the expense of Tom Scott, Pennsylvania Railroad's President.<sup>151</sup> Much to the dislike of the people of Pittsburgh, the First Division of the Pennsylvania National Guard (state militia) from Philadelphia, "the seat of Tom Scott's empire," was ordered to Pittsburgh. The people of Pittsburgh had held a grudge against Philadelphians since 1846, for the role they had played influencing the State Legislature in the denial of the B&O right-of-way to Pittsburgh. Pittsburgh's workers looked upon the Philadelphia militia as "myrmidons of the oppressor"--Tom Scott and the Pennsylvania Railroad, headquartered in Philadelphia. The rationale for deciding to send in the Philadelphia militia was that they would be less sympathetic toward the strikers than would be the case of the Pittsburgh militia.<sup>152</sup>

The local militia was directed to keep order until the troops arrived from Philadelphia. They were totally ineffective, however, because of their lack of enthusiasm for suppressing something they supported. Even the commander of the Pittsburgh troops, General Alfred Pearson, sympathized with the strikers.<sup>153</sup> Representative of the attitude of the Pittsburgh militia was the response a militiaman made to a Pittsburgh lawyer when he was told: "You may be called upon to clear the tracks down there." The soldier replied in a true Pittsburgh manner: "They may call on me, and they may call pretty damn loud before they will clear the tracks." By the time the Philadelphia troops arrived early in the afternoon of Saturday, July 21, the Pittsburgh crowd, waiting for them at the Twenty-eighth Street crossing, had worked itself into a demonstration of feverish excitement.<sup>154</sup>

When the 600 Philadelphia troops, under the command of General Robert Brinton, arrived in Pittsburgh they saw not only 2,000 railroad cars and locomotives lying idle, they came upon a seemingly unmovable crowd of 5,000 to 7,000 people jamming the tracks and the surrounding ground. Following General Pearson's directive that "The tracks must be cleared," General Brinton started moving his men up the tracks toward the crowd with drawn bayonets. The crowd, including young children, began throwing rocks, coal, sticks, bricks, old shoes, etc. at the soldiers. Shortly after 5:00 P.M. shots rang out from the crowd and soldiers returned the fire, killing twenty people and seriously injuring as many as seventy among the crowd. Fifteen of the Philadelphia militiamen were hurt, but none were killed.<sup>155</sup> After this incident happened on July 21, "the scene was set for one of America's greatest riots of all time."<sup>156</sup>

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<sup>150</sup>*Ibid.*, p. 125.

<sup>151</sup>*Ibid.*, p. 131; Oliver Jensen, *American Heritage History of Railroads in America* (New York: American Heritage Wings Books, 1993), p. 156. Governor Hartranft's western trip at the expense of the Pennsylvania Railroad was typical of how politicians were "in the pockets" of railroad owners. The favored treatment was even extended to ministers by way of free passes to stifle any opposition they may have to operating trains on Sunday or to sway them not to speak out against abuses the railroads were imposing upon their workers.

<sup>152</sup>Bruce, *1877: Year of Violence*, p. 138.

<sup>153</sup>*Ibid.*, p. 143.

<sup>154</sup>*Ibid.*, p. 140.

<sup>155</sup>*Ibid.*, p. 145.

<sup>156</sup>Steward H. Holbrook, *The Story of American Railroads* (New York: Crown Publishers, 1947), p. 247.

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Following the Twenty-eighth Street episode, the city went mad as news spread. There was such an outcry among the people against the great monopoly that doctors, politicians and most of the city's businessmen were joining the whole labor interests of Pittsburgh in fighting the Pennsylvania Railroad. Crowds began to gather on street corners all over town and then began to move in the direction of the railroad station and rail yards. Philadelphia troops moved to the Twenty-sixth Street roundhouse where they hoped to spend the night in safe quarters. This hope was instantly dashed when approximately 15,000 maddened men and women quickly surrounded the roundhouse, making the soldiers inside virtual hostages. Three soldiers attempting to flee the roundhouse were shot dead as they ran; "and the city of Pittsburgh fairly blew up with violence."<sup>157</sup>

Shortly before 11:00 P.M. on Saturday evening, mob action intensified. At that time someone set a freight car on fire and sent it careening down the grade. A misplaced switch sent the car tumbling off the track near the upper roundhouse at Twenty-eighth Street. Then a half-dozen coke cars were sent rumbling down the track, crashing into the derailed car. Oil cars which had been set on fire were sent down the track, catching the sand house on fire and sending flames to the upper roundhouse. General Brinton, who had positioned himself in the lower roundhouse became aware at about 11:00 P.M. of what was happening at the upper roundhouse. Fires began to rage out of control because the firefighters were prevented from getting to the fire by the crowd, who had also cut the water hoses and begun looting. About 2:00 A.M. on Sunday morning, July 22, when a rioter aimed a field piece-- which had been captured from the Pittsburgh militia--at Philadelphia troops taking refuge in a machine shop, General Brinton gave the command to fire. The result was that eleven men lay dead or wounded in the street. The goal of the rioters to burn the Philadelphia troops out of the roundhouse was thwarted for the time being.<sup>158</sup>

Near daybreak on Sunday, the rioters started shoving burning freight cars toward the roundhouse where most of the Philadelphia troops were situated. By throwing car wheels onto the tracks the soldiers were able to block the fire cars. For a few hours the troops kept the fire from reaching the roundhouse by using fire extinguishers and a hose they had discovered in the roundhouse. The rioters in search of flammable materials found cars with whisky and "high wines" which they moved as close as possible to where the troops were, then set the cars on fire. The flaming liquor found its way into the basement of the machine shop, soon bathing that building in flame. Fire quickly spread to other railroad buildings, lumberyards, rolling stock, nearby workers' housing--and the roundhouse where General Brinton and most of the Philadelphia troops were. Just after 8:00 A.M. Sunday morning, General Brinton and his soldiers escaped through the lumberyard and moved down Twenty-fifth street to Liberty Street with a Gatling gun in their front, but with mobs of people both in their front and their rear.<sup>159</sup> General Brinton marched, under occasional gunfire, with his men to the federal government's poorly defended Allegheny Arsenal, where he hoped to get ammunition and food for his men who had not eaten anything since noon on Saturday. Much to the general's dismay, both ammunition and food were denied by the Arsenal commander to prevent enraging the mob into sacking the Arsenal. There was no choice but to continue their retreat to about twelve miles out of town, where they were at last fed at the Allegheny County Workhouse.<sup>160</sup>

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<sup>157</sup>*Ibid.*, p. 248.

<sup>158</sup>Bruce, *1877: Year of Violence*, p. 155.

<sup>159</sup>*The Statesman*, Tuesday, July 31, 1877, p. 1. The account appearing in this edition of *The Statesman*, provides a very comprehensive reporting of what happened in Pittsburgh on the night of July 21. *The Statesman* took its account directly from the *New York Sun*, with a dateline of Pittsburgh, July 22.

<sup>160</sup>Bruce, *1877: Year of Violence*, p. 168.



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Four soldiers were killed and several others were wounded during the retreat.<sup>161</sup>

With the Philadelphia troops out of the city and local police doing little, Pittsburgh was under mob control. It was class war, particularly stirring the lower layers of society.<sup>162</sup> City officials felt helpless. The federal government lacked official grounds for action at this time because the governor had not officially asked President Hayes for help. Governor Hartranft, on vacation in the West, was informed of the "Pittsburgh slaughter" at 9:00 P.M. on Saturday evening. He boarded a special train at midnight headed for Philadelphia. On Sunday evening, the governor telegraphed President Hayes from Creston, Wyoming Territory, asking for federal assistance. Following the request, about fifty men from the Columbus, Ohio army barracks started for Pittsburgh, although it would be in the early afternoon on Monday, July 23, when President Hayes would officially issue a proclamation commanding Pennsylvania rioters to disperse by Tuesday noon.<sup>163</sup> In the meantime, there was a great deal of plundering, breaking into freight cars and stealing whatever people wanted: "hams, sewing machines, boots, meats, tobacco in every form, and every article of merchantable ware were removed and carried boldly through the streets to homes, or auctioned to the highest bidder."<sup>164</sup> Fire followed looting. The crowd continued to prevent water from being put on burning railroad property.

Heightened activity of the Pittsburgh mob resumed on Sunday afternoon when fire broke out in a passenger car standing partly under the Union Depot train shed. Within minutes the office of the depot master went up in flames. Fire then spread to the depot/hotel, which was burned to rubble in a ragged shell of brick by 4:30 P.M. A car loaded with liquor was set afire and sent down a grade toward the transfer depot of the Adams Express Company and other buildings, including the Pan Handle freight depot on Seventh Street and a house on Fountain Street. Within a few minutes a great sheet of fire enshrouded the buildings. A grain elevator, which had no connection with the railroad, was burned because it was described as being part of a monopoly. The fire continued to rage out of control until that evening, consuming twelve brick tenements, a chair factory, a blacksmith shop, a row of stables, a cooper shop, and about twenty small frame houses.<sup>165</sup>

By nightfall on Sunday the fires were out and Pittsburgh was quiet. The scene was one of great destruction and desolation. In a two-mile stretch from Grant Street to Thirty-third Street there was not much left except smoking ruins:

In that bleak landscape of ashes and old iron rested the remains of 104 locomotives and 2,152 cars of all sorts--passenger, press, postal, refrigerator, and stock cars, gondolas, coal cars, box cars and cabooses. If coupled into one ghostly train, they would have been strung out for eleven and a half miles. In the roofless roundhouses rod and straps of heat-twisted iron were draped over locomotives like seaweed on wrecks exposed by a marine upheaval...Everywhere lay a carpet of flaked and crumpled sheet iron, jumbled gears, distorted pipes, metal in all the shapes and figures geometry admits. The course of buried tracks could be traced by thousands of car wheels in neat files like soldiers on parade. Eventually 1,200 carloads of scrap were taken to

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<sup>161</sup>*The Statesmen*, Tuesday, July 31, 1877, p. 1.

<sup>162</sup>Josephson, *The Politics*, p. 254.

<sup>163</sup>Bruce, *1877: Year of Violence*, pp. 217-218.

<sup>164</sup>*The Statesman*, Martinsburg, West Virginia, Tuesday, July 31, 1877, p. 1.

<sup>165</sup>Bruce, *1877: Year of Violence*, p. 174.

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Altoona, [Pennsylvania]...Besides the roundhouse, sheds, depot, offices and other railroad property, seventy-nine buildings, ranging from elevator to shanty lay in ashes.<sup>166</sup>

Altogether, the violence in Pittsburgh on Saturday and Sunday, July 21-22, resulted in twenty-four people being killed.<sup>167</sup> The casualties for the railroaders were small in number because they had "prudently absented themselves after the events of Saturday night."<sup>168</sup>

By Sunday evening, the strike had spread to all the major railroads from the Atlantic to the Pacific. Pennsylvania Railroad employees in Philadelphia joined the strike, as did workers on the Delaware Railroad and New Jersey Central Railroad. At Hornellsville, New York, on the Erie Railroad, men prevented trains from going out despite the presence of New York militia. The Pennsylvania Railroad's main line from Philadelphia to Pittsburgh was paralyzed. Workers in East St. Louis, Illinois went out on strike on all railroads leading into the city. On Sunday evening, an excited crowd took over the New York Central's Buffalo yards and on Monday, a mob took over the Erie roundhouse. On Tuesday, July 24, the New York Central Railroad was brought fully into a strike position.<sup>169</sup> Strikes had begun on Sunday evening in Reading, Pennsylvania, on the Philadelphia and Reading Railroad.<sup>170</sup>

What had happened in Pittsburgh "acted on the nation like a hot coal in a barrel of firecrackers. On Monday and Tuesday, July 23 and 24, nerves crackled, tempers smoked and glowed, violence burst forth in a score of cities from the Middle Atlantic States to the Mississippi Valley."<sup>171</sup> Especially crucial was the situation in Reading, Pennsylvania, on Sunday evening when rioting broke out on the Philadelphia and Reading Railroad and the Lebanon Valley Railroad, with the burning of bridges and railroad cars. Six companies of the Pennsylvania National Guard arrived in Reading, and militiamen shot into the crowd, killing eleven people.<sup>172</sup> There was great fear that Reading would turn into a "Pittsburgh on a small scale."<sup>173</sup>

In Philadelphia, pressures were lighter. Yet, as a result of the mob stopping an oil train on Sunday evening, Philadelphia's Mayor, William S. Stokley, asked Washington for help. Secretary of War McCrary replied that federal troops would be immediately placed in Philadelphia, under General Winfield Scott Hancock, who would take command of both federal and state troops in Pennsylvania. While General Hancock was handling disposition of troops in Maryland and where needed in West Virginia, federal troops in those states reported to state authorities.<sup>174</sup> By Tuesday afternoon, Philadelphia's peace was being kept by 1,400 armed police, 400 armed firemen, 700 United States regulars, 125 U.S. Marines, 2,000 special police, 500 men of the Veterans'

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<sup>166</sup>*Ibid.*, p. 180.

<sup>167</sup>*Ibid.*

<sup>168</sup>*Ibid.*, p. 177.

<sup>169</sup>*Ibid.*, p. 202.

<sup>170</sup>Foner, *The Great Labor Uprising of 1877*, pp. 234-235.

<sup>171</sup>Bruce, *1877: Year of Violence*, p. 184.

<sup>172</sup>Foner, *The Great Labor Uprising of 1877*, p. 235.

<sup>173</sup>Bruce, *1877: Year of Violence*, pp. 192-193.

<sup>174</sup>*Ibid.*, p. 219.

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Corps and 1,500 members of the Grand Army of the Republic. This aggregation of troops enabled Hancock to send four batteries of regulars to Reading.<sup>175</sup>

As the strike progressed, news media began to associate communism with what was happening with the railroads and labor in general. "Almost from the start, the press had referred to the strike as a rebellion, a revolt, a 'direct and defiant war against society.'"<sup>176</sup> President Hayes' first proclamation against the West Virginia "insurrection" helped place that image in the minds of many. An editorial in the *National Republican* of Washington, DC, on July 21 boldly pronounced that the Great Strike was "nothing less than communism in its worst form...not only unlawful and revolutionary, but anti-American."<sup>177</sup> Major newspapers, such as the *New York World*, *New York Post*, *Philadelphia Inquirer*, *Pittsburgh Commercial Gazette* and the *New Orleans Times* maintained that the disorders were communist-inspired. The Communist Party, represented principally by the Workingmen's Party of the United States (WPUS), did not constitute the clear and present danger to American institutions that alarmists supposed in 1877. At the time of the strike the party had only about 4,500 members in the United States. The strike did, however, cause an increase in organization of communist groups, such as the WPUS.<sup>178</sup> Even in Martinsburg and Berkeley County, West Virginia, there was a perception at least on the part of a local historian that there was communistic involvement with the Martinsburg strike. F. Vernon Aler, in his 1888 *Full and Complete History of Martinsburg and Berkeley County, West Virginia* lays blame on the communists: "It was in our happy neighborhood [that the] railroad men imbued their hands in blood and met their first loss of life, in attempting to carry out their communistic ideas."<sup>179</sup>

On July 25, a great parade of strikers in St. Louis closed down business establishments and practically achieved a general strike. There, the Workingmen's Party held the center of the stage from beginning to end. A result of the strike was that the Workingmen's Party gained a firm foothold in St. Louis, despite the presence afterwards of six companies of U.S. regulars from the Twenty-third Infantry.<sup>180</sup> In Louisville, Kentucky striking laborers, many of them non-railroad men, caused businesses to be shut down completely. The Workingmen's Party in Louisville, which had been a dominant force in the strike in that city, attained sufficient support following the strike that in the August election it was able to elect five out of seven candidates to the Kentucky State Legislature.<sup>181</sup>

A serious situation developed in Chicago on Wednesday, July 25. Within twenty-four hours something close to a general strike, with the Workingmen's Party playing a leading role, was "clutching at Chicago. Police clashed with a mob at the Chicago, Burlington & Quincy roundhouse, wounding seven and killing three. The Board of Trade enlisted 5,000 men as police deputies, and armed them. Several companies of militia were called out."<sup>182</sup>

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<sup>175</sup>*Ibid.*, p. 196.

<sup>176</sup>*Ibid.*, p. 225.

<sup>177</sup>*Ibid.*, p. 226.

<sup>178</sup>*Ibid.*, pp. 225-228, 232, 238.

<sup>179</sup>Aler, *A Full and Complete History of Martinsburg and Berkeley County*, p. 302.

<sup>180</sup>Bruce, *1877: Year of Violence*, p. 259.

<sup>181</sup>Foner, *The Great Labor Uprising of 1877*, p. 222; Bruce, *1877: Year of Violence*, p. 317.

<sup>182</sup>Holbrook, *The Story of American Railroads*, p. 250.

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The next day, at the Halstead Street viaduct, soldiers and mounted police rushed a huge mob and killed twelve people, and made several-hundred arrests. General Phil Sheridan, at the time campaigning against the Sioux Indians in the West, responded by sending several companies of infantry to the frightened city. There was more fighting, more dead, and more wounded before order was partially restored on July 28.<sup>183</sup>

Throughout the period Martinsburg remained quiet under the watchful eyes of the encamped troops, although railroad operations were limited due to the general shutdown of the main line at other points, and work stoppages and violence on other major interconnecting lines. Yet the question remains: why did the Martinsburg strikers not burn the complex or otherwise escalate the violence to the level which occurred in Baltimore, Pittsburgh, or Chicago? Quite possibly, the destruction the town had endured during the Civil War (which these other cities had escaped) was still fresh in the minds of Martinsburg's citizens, and few were ready to see the town set back fifteen years by an all-out frenzy of destruction.

The Great Strike reached its climax on Wednesday, July 25, with all but two regions (New England and the South) of the United States succumbing.<sup>184</sup> That date was also the turning point of the Great Strike. That evening the strike began to collapse. Several railroads had been able to avert strikes by rescinding the wage cuts. Other railroads began to concede to strikers' demands. Railroad management had developed a formula: "Grievances would be fairly and patiently discussed, but only when lawlessness and insubordination ceased—that is, when all those men had returned whom the company chose to take back." Except in Chicago, the riots had essentially spent themselves; the authorities now could focus on protecting the strikebreakers. Strikers on the Erie Railroad ended their strike at midnight, allowing freight trains to start running again on July 26. The end of the strike elsewhere came quickly now. At midnight, July 27, a B&O freight train moved out of Cumberland, Maryland, with an escort of federal troops. It arrived in Martinsburg without incident. The main line of the B&O was open in its entirety by July 31.<sup>185</sup> Most railroads which had not already resumed operations set Monday, July 30, as a deadline for their men to return to work with no questions asked. Very few workers passed up the opportunity.<sup>186</sup>

With the strike over, railroad workers, as well as railroad owners, began to assess what they had gained or lost during the almost two weeks the strike lasted. One railroad, the Pennsylvania, suffered the greatest losses of all the railroads, with its heaviest losses at Pittsburgh. Fortunately for the company, the Pennsylvania State Supreme Court held the company not liable for freight stolen or destroyed at Pittsburgh. What had happened to the Pennsylvania Railroad caused its president, Tom Scott, to sell his empire to John D. Rockefeller in October 1877. Although railroad workers were going back to work, except those who had been fired and not given reinstatement rights, there were other sympathetic strikers, such as workers at Jones & Laughlin's American Iron Works at Pittsburgh, boatmen on the Chesapeake and Ohio Canal, and coal miners in Illinois and Pennsylvania, who held out for some time after the railroads were again running.<sup>187</sup>

The overall assessment of who had gained from the strike gave the advantage to the workers. Even on roads

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<sup>183</sup>*Ibid.*

<sup>184</sup>Bruce, *1877: Year of Violence*, p. 261.

<sup>185</sup>Foner, *The Great Labor Uprising of 1877*, p. 240.

<sup>186</sup>*Ibid.*, pp. 285-291.

<sup>187</sup>*Ibid.*, pp. 292, 300-301.

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where pay was not raised, workers still gained. The strike was so widespread throughout the country that the mere scope of the strike prevented reprisals against more than a fraction of strikers. The rest lost only one or two weeks' wages, most of which would be made up through the subsequent rush of business. This was especially true because they were paid by the trip or by the mile. The Great Strike put a stop to wage-cutting experiments--not only on railroads but elsewhere. Railroads began to restore the cuts which brought on the strike. In October 1877, the New York Central restored half of the cut, and in February 1880, it restored the remainder. Other benefits began to be given to the workers. In August 1877, the B&O started giving the men passes home during layovers, as well as giving them regular runs with reasonable assurances of full-time work.<sup>188</sup>

One of the many results of the Great Strike was the growing demand for some kind of federal regulation of railroads. During the strike, heads of various railroads had talked and written about the duty of the federal government to protect interstate railroad traffic. Following the conclusion of the strike, President Hayes reflected in his diary about what he and the country had just gone through:

Can't something be done by education of the strikers, by judicious control of the capitalists, by wise general policy to end or diminish the evil? The railroad strikers, as a rule, are good men, sober, intelligent and industrious.

Though a decade away, the Interstate Commerce Act of 1887 would specify the role of the federal government in overseeing all aspects of interstate commerce.<sup>189</sup>

The Great Strike of 1877 which erupted in Martinsburg, West Virginia, on July 16, marked the beginning of a new age of industrial conflict and change, and for many years afterward spawned debate about American industry and the plight of its workers. When railroad workers struck in 1877, they were taking on the largest and most powerful corporations Americans had ever known. The railroads, which had spurred rapid and far-reaching changes in American society, were a symbol of both progress and peril, only to be challenged by its own workers. The workers at large, without receiving a coordinated direction from the several existing railroad unions, took on an industrial giant. The Great Strike had a profound impact on American attitudes about industrial society. After 1877, workers and big businessmen increasingly divided into separate camps. Newspaper editors lumped workers, immigrants and communists together as "enemies of progress." Calls were made to reorganize militias and strengthen the standing army. Meanwhile, working Americans searched for new forms of national organization to counter the growing economic and political power of industrial corporations.<sup>190</sup>

No other sites where strike activity occurred remain as intact as the Martinsburg shops. Furthermore,

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<sup>188</sup>*Ibid.*, pp. 301-302.

<sup>189</sup>*Ibid.*, pp. 315-318.

<sup>190</sup>American Social History Productions, Inc., *1877: The Grand Army of Starvation*, p. 10.

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considering that the Great Strike began on the B&O at this very location, the fact that the first strike violence occurred here, and the overall role these structures and Martinsburg's railroad employees played during the events make the Martinsburg B&O complex the best representative of this watershed event in American labor history.

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Previous documentation on file (NPS):

- Preliminary Determination of Individual Listing (36 CFR 67) has been requested.
- Previously Listed in the National Register.
- Previously Determined Eligible by the National Register.
- Designated a National Historic Landmark.
- Recorded by Historic American Buildings Survey: #
- Recorded by Historic American Engineering Record: #WV-1

Primary Location of Additional Data:

- State Historic Preservation Office
- Other State Agency
- Federal Agency
- Local Government
- University
- Other (Specify Repository):

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**10. GEOGRAPHICAL DATA**

Acreage of Property: Approximately 3 acres

UTM References: Zone Easting Northing

1	18	245320	4371980
2	18	245360	4371990
3	18	245440	4371880
4	18	245420	4371800
5	18	245360	4371800

Verbal Boundary Description: The boundary is a five-sided polygon tightly surrounding the shop complex, for the most part following a modern security fence. Beginning northwest of the Machine/Woodworking Shop at point 1 (the northwestern corner of the chain link security fence), it extends northeast 100' along the fence line to point 2, thence leaving the fence line and striking southeast 700' in a direct line along the rear of the Machine Shop and returning to the chain link fence at point 3 (directly east of the Car Shop), thence following the fence 350' southwest to point 4, thence west along the fence 250' to point 5, thence north/northwest approximately 775' following the fence (which borders the CSX-owned main line right of way) returning to point 1.

Boundary Justification: The boundary (see figure 8) encompasses four major resources: the Fink-designed 1866 West Roundhouse, the two 1866 Niernsee-designed shops, and the (non-contributing) ruins of the 1872 East Roundhouse. The contributing buildings represent the technology and labor aspects of national significance discussed in this nomination. The boundary also encompasses open areas immediately surrounding the shops, most importantly on the western side of the buildings between the shops and main line where strikers, crowds, and troops congregated during the Great Strike. It is unknown exactly where the striker was killed, but it is definitely near, and possibly within, the northwestern section of the boundary near point 1. The boundary between points 2 and 3 (where it leaves the fence line) excludes twentieth-century ruins along the complex's eastern periphery. The boundary includes three non-contributing structures (small hydrant sheds), one non-contributing twentieth-century building (the saw building), and one non-contributing object (a ca. 1930 B&O caboose on display west of the Car Shop). While the hotel/depot is associated with nationally significant events at the B&O shops, it does not possess sufficient integrity to warrant inclusion in the proposed NHL boundary.

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Date: October, 2003

DESIGNATED A NATIONAL HISTORIC LANDMARK  
July 31, 2003