

Jackson Street Shops,
Blacksmith and Boiler Shop
Jackson Street, Pennsylvania Avenue
St. Paul
Ramsey County
Minnesota

HABS No. MN-67-A

HABS
MINN,
62-SAIPA,
17-4-

PHOTOGRAPHS

WRITTEN HISTORICAL AND DESCRIPTIVE DATA

Historic American Buildings Survey
National Park Service
Rocky Mountain Regional Office
Department of the Interior
P.O. Box 25287
Denver, Colorado 80225

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HISTORIC AMERICAN BUILDINGS SURVEY

JACKSON STREET SHOPS
BLACKSMITH AND BOILER SHOP

HABS No. MN-67-A

Location: Jackson Street and Pennsylvania Avenue
St. Paul, Ramsey County, Minnesota

USGS St. Paul East Quadrangle, Universal
Transverse Mercator Coordinates: Zone 15;
491920.4878640; 492560.4878640; 492560.4878540;
492300.4878540; 492140.4878400; 491920.4878400

Present owner/occupant: Burlington Northern Railroad Company
176 East Fifth Street
St. Paul, Minnesota 55164

Present Use: Vacant

Significance: The Jackson Street Shops are remnants of one of the most important influences on the history of St. Paul and the Midwest. Initially they served as repair maintenance shops for the St. Paul, Minneapolis and Manitoba Railway and later the Great Northern Railway Company. This limestone building, built in 1882, held the Blacksmith, Boiler and Foundry Shops and was vital to the total operation of locomotive and car maintenance.

PART I. HISTORICAL INFORMATION

A. Physical History:

1. Date of erection: Construction of the Blacksmith and Boiler Shop was started in December 1881 and completed in 1882.
2. Architect: Not known.
3. Original and subsequent owners: St. Paul, Minneapolis and Manitoba Railway, Great Northern Railway (1892), and Burlington Northern Railroad Company (1970).
4. Builder, contractor, suppliers: Not known.
5. Original plans and construction: To date no plans for the original 1881 - 1882 construction have been found. The earliest plan in the Burlington Northern Railroad Company files is dated January, 1886, a blueprint showing a floor plan, section, and west elevation. Unfortunately, subsequent alterations were recorded on the drawings and the extent of the original drawing is unclear. Physical examination of the building confirms the original size and wall construction still intact.

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6. Alterations and additions: The following alterations and additions were documented on plans in the possession of Burlington Northern Railroad Company and confirmed by physical examination.

- 1891 Plan for Brass Foundry and Chemist's Building added to the east side of the Boiler Shop built of buff colored limestone and measuring 48' x 68'. (Drawings No. 8535-1, 2, 3 and 4)
- Aug. 3, 1892 Trusses for rebuilding Blacksmith Shop roof and 260' ridge ventilating monitor over the length of the structure. (Drawing No. 8536-3)
- 8 Double doors - 12' x 15'-8"
1 Double doors - 8' x 11'-8"
1 Double doors - 12' x 15'-8" (not split in half)
- Oct. 1894 Water closet addition to the east side of the Blacksmith Shop connected to the Brass Foundry.
- May 1, 1902 Addition to the Brass Foundry on the east end constructed of wood in a lean-to fashion measuring 22'-6" x 33'-0"
- 1926 Insurance map indicating the presence of the lean-to.
- 1943 Plan calling for the renewal of the roof and individual ventilators spaced every 20' on center in two rows along the length. (Drawing No. 8536-2)
- Sept. 5, 1950 Four foot long floor-type wash sink placed in the Blacksmith shop from the Wash and Locker room.
- July 6, 1955 Removed vents and heaters and added 12' x 12" braces in the Blacksmith shop and placed doors in the same. (Drawing No. 8536-2)
- June 13, 1956 Boiler shop changed to Battery Shop, mezzanine and small rooms added to the north end interior. (Drawing No. 8536-10)

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- June 13, 1956 Remodeled boiler shop to house Mechanical and Store Department facility: (Drawing No. 8536-12)
- 3 bay Store House
4 bay Future Roller Bearing Shop
3 bay Blacksmith Shop (south end)
- June 27, 1956 Added overhead door lintels to Door "F" between the Blacksmith and Roller Bearing shops, Door "K" leading to the store department truck garage and Door "C" between the Roller Bearing Shop and the Store House. (Drawing No.'s 8536-11 and 14)
- March 4, 1957 Added pipe trench to Battery Shop. (Drawing No. 8536-10)
- March 6, 1957 Added fans to the Battery Shop and Washroom. (Drawing No. 8536-10)
- April 30, 1957 Changed and moved Door "D" in the Toilet. (Drawing No. 8536-10)
- Nov. 13, 1958 Placed acid drain in Battery Shop. (Drawing No. 8536-10)
- Oct. 18, 1961 Changed drawings to concur with what was there. (Drawing No. 8536-10)
- March 3, 1965 Placed new battery drain pit and acid proof floors in the Battery Shop. (Drawing No. 8536-10)
- Jan. 27, 1978 Changed Battery Washroom into sandblast room. (Drawing No. 8536-11)

B. Historical Context:

1. The first railroad in the state was completed in 1862 by the St. Paul and Pacific Railroad and was followed by 30 years of rampant growth as the transportation network created by the steam engine spread throughout the Northwest from its center in St. Paul. James J. Hill was the man behind the railway success and to service his cars, the Jackson Street Shops were erected to replace an older set of shops at the terminus of the line at the Mississippi River in downtown St. Paul. The December 10, 1882 edition of the St. Paul Pioneer Press describes the new railyard as, "...stone of massive proportions used in the walls

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and heavy iron whenever possible takes the place of timber...the blacksmith shop 80' x 150'..." The last dimension is incorrect and should have read 80' x 300'. The total cost for the new shops was \$400,000, and consisted mainly of Platteville Limestone, quarried in southern Minnesota.

PART II. ARCHITECTURAL INFORMATION

A. General Statement:

1. Architectural character: The Blacksmith and Boiler Shop building is one of the few surviving examples of 19th century limestone shop architecture in the state. It is one of the original buildings of James J. Hill's "St. Paul, Minneapolis and Manitoba Railway Co., Jackson Street Shops."
2. Condition of the fabric: The Platteville limestone walls are sound and of good color, although the many alterations to doors and window openings with a variety of materials have given it a patchy appearance. The remaining doors and windows have been broken and are deteriorated. The interior is littered with debris and abandoned material. The roof appears to be in good condition.

B. Description of exterior:

1. Overall dimensions: The one-story, approximately 18' high building is 300' long and 80' wide and was originally divided into two shops by a stone separating wall. The north 100 feet was the Boiler Shop and consisted of five 20-foot bays, while the south end contained the Blacksmith Shop consisting of ten 20-foot bays, 200 feet in length. Two additional separating walls of 12" concrete block were added in 1956 when the Blacksmith Shop was remodeled into a Store House with 3 bays and a Future Roller Bearing Shop with 4 bays.

On the east side of the building is a one-story garage (formerly the Boiler and Engine Room) with the Brass Foundry addition attached. A wood frame lean-to structure is to the east of the Brass Foundry. The Brass Foundry is 48' x 68' with 18" thick "buff" stone walls.

2. Walls: Exterior walls are 20" thick limestone laid in courses, ranging in color from light grey to dark grey. The separating wall between the Blacksmith and Boiler Shops is 18" thick limestone. The water closet walls are 12" thick limestone.

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3. Structural System: The 20" thick exterior stone walls are loadbearing. The roof is supported by 78'-8" wood trusses spaced 20' on center. These trusses rest on limestone walls and are also supported by two 12' x 12' wood columns. The tie beams and principal rafters are made up of 7 pieces of 2" x 14", strut rods are approximately 1' thick. Purlins are 7" x 14" and common rafters are 2" x 8". Wood braces 12" x 12" from the base of the wall angling 4'-6" out to the truss were added later in some areas.

4. Openings:

a. Doorways and door: Originally the west wall of the Boiler Shop had five 12' x 15'-8" double doors, the Smith Shop had one 12' x 15'-8" double door and one 6' x 15'-8" single door. These large double doors were used to bring railcars directly into the shops from a transfer table. Each set of double doors had a small pass thru door built into the left side.

Later remodeling added more doors and filled in previous doorways with glass block, brick and concrete block.

b. Windows: It appears there were 28 segmental arch windows, 6' x 8', in the original building. Later remodeling and the addition of doorways eliminated most of these.

The attached Boiler and Engine Room had 3 large windows on the north wall (7 feet wide) and 2 small windows on the south wall.

Glass sizes range from 8" x 12" in the double doors to 10" x 14" on the roof top ventilators.

5. Roof:

a. Shape, covering: The low pitched gable roof had 2 courses, 2nd fencing D & M roof sheathing. In 1943 it was replaced with 2-ply cold process roofing.

b. Ventilators: A 260' long monitor, 11'-4" wide by 7'-0" high was built into the ridge of the roof. It alternated in its 3'-4" openings, windows, and ventilators. The monitor was removed when the roof was renewed in 1943 and 30 small individual 3' x 3' vents were built in its place.

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C. Description of the interior:

1. Floor plans: The original one-story building was divided into the shops separated by a stone wall. The northly one-third of the building was the Boiler Shop. The southerly two-thirds was the Blacksmith Shop. A Boiler and Engine House was attached to the eastside of the building. A Brass Foundry addition (48' x 68') was built on the east side of the Boiler and Engine House in 1891.
2. Flooring: The Boiler Shop had a wood floor and the Smith Shop a dirt floor. Concrete floors were added throughout the structure with subsequent remodelings.
3. Wall and ceiling finish: Interior walls are painted white and there is no ceiling.

D. Site:

The building faces west and is one of the major buildings on the 25 acre site bordered by Jackson Street to the east and Arch Street to the south. The Blacksmith and Boiler Shop is the first building west of Jackson Street. Directly to the west is the Machine Shop and between the two buildings was a transfer table for moving locomotives and rail cars in and out of the buildings. Spur rail lines bordered it on the north and south sides of the building.

PART III. SOURCES OF INFORMATION

A. Original Architectural Drawings: Not available.

B. Early views:

Bird's Eye View of the City of St. Paul, Ramsey Co., Minnesota, 1883, Minnesota Historical Society, Rice's Map of St. Paul

Robert St. in 1851 from "St. Paul: Saga of a City," Minnesota Historical Society (MHS)

Shops and Roundhouse of the First Division, St. Paul and Pacific Railroad, 1875

1941 Photo showing a view from N.E. of the Shops, MHS
Audio-Visual Library

1940's Aerial photo of downtown St. Paul, Wilson Library, Map Division, University of Minnesota, Minneapolis

1958 Aerial photo of the Great Northern Railyard, Wilson Library

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C. Primary and Unpublished Sources:

1884 Hopkin's Atlas, Wilson Map Library, University of Minnesota

1888 Drawing of Shops from the Burlington Northern
Vice-President file (Scaled Drawing)

1891 Rascher Insurance Atlas, MHS

1926 Sanborn Insurance Atlas, MHS

D. Secondary and Published Sources:

"The Jackson Street Shops", 1981, Helen Rausch-Chambers

The Restoration Manual, Orin M. Bullock

James J. Hill and the Opening of the Northwest, Martin Albro

St. Paul: Saga of a City, Virginia Kuntz

Ramsey County History, George Rea

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March 1985

PART IV. PROJECT INFORMATION

This project was prepared as a class project for Architecture 5142, Historic Building Research and Documentation, a class offered in the School of Architecture and Landscape Architecture at the University of Minnesota, Minneapolis, Minnesota. The class project was prepared under the direction of Professor Foster W. Dunwiddie and was funded by a grant from the State of Historic Preservation Office of the Minnesota Historical Society, Saint Paul, Minnesota. Historical data was compiled and measured drawings prepared by Debra Whalen, University of Minnesota, March, 1985.