

David Humphreville Morrison¹⁰

The career of David Humphreville Morrison (1817-1882) spanned roughly four decades from 1840 until his death. He was the son of Thomas Morrison (1792-1879), a contractor who instilled in his son a strong sense of integrity and public-spiritedness, and who provided a practical basis for his career. David was also influenced by one of his teachers, Eliam E. Barney, who encouraged him to enter the field of civil engineering, and by Barney's brother Elijah, an engineer who worked on the Erie Canal and the Ohio Canal system.

Morrison's early training as an engineer was typical of his time, that of the apprenticeship. He worked as a rodman under Elijah

Barney on the Miami Canal system in Ohio beginning in 1836, was promoted to surveyor the following year, and by 1838 was an assistant engineer. After eight years he resigned and returned to Dayton, Ohio, where his subsequent career consisted of consulting work for the non-engineering community, working as a contractor and/or inventor, and activities as a businessman and manager.

He was appointed city engineer for Dayton in 1848, superintending contractors, surveying for streets and sidewalks, supervising internal improvements for and by the railroads, and designing bridges. He left the city and became a regular consultant for the Montgomery County Commission in 1852, providing designs for bridge contracts well into the 1860s. He was often called upon to resolve disputes arising during construction projects.

During his career Morrison produced many bridge designs in stone, wood, and iron. His first, "D.H. Morrison's Truss Bridge" of 1852, were based at least partially on observation and experimentation. His first exposure to a scientific approach to bridge design was Herman Haupt's General Theory of Bridge Construction. The list of his various bridge designs is lengthy: an elliptical stone arch on a skew or oblique on Jefferson Street in Dayton (1855); his "rafter bridges;" Burr trusses; "rigid suspension trusses," such as the Germantown bridge (1865) or the iron Main Street bridge in Dayton; a wire suspension bridge (1850); a short-span low truss cast- and wrought-iron bridge design that he built up and down the Miami and Erie Canal during the 1860s; and a cast-iron bowstring bridge (1864).¹¹ His most significant designs were "Morrison's Patent Wrought Iron Arch Truss Bridge"¹² and "Morrison's Patent Wrought Iron Truss Bridge."¹³ He built numerous examples of these bridges throughout Ohio and the Midwest, and an extensive collection of drawings for such bridges still survives.¹⁴

His most notable achievement as a manager and businessman, besides supervising the work of others, was the founding of his own firm in 1852 with his brother-in law. His son, Charles Carroll, joined the firm two years later and became a partner in 1868. The firm was named D. H. and C. C. Morrison and was later renamed the Columbia Bridge Works. The business expanded steadily and was incorporated five months after Morrison's death on July 21, 1882.

Morrison's career represents important developments in bridge building during the middle of the 19th century, and his bridge designs were pivotal in the transition from wood to metal construction.

10. This is a summary of Simmons, "Dayton's Premier Bridge Builder," which is the definitive biography of David H. Morrison.

11. See HAER No. OH-86.

12. See HAER No. OH-88.

13. See HAER No. OH-92

14. Safety negatives of these drawings are available to the scholar at the Ohio Historical Society Library in Columbus, Ohio. Originals are in the Morrison Family Collection, Beaver, Pennsylvania.

BIBLIOGRAPHY

- Carl A. Condit. American Building Art in the Nineteenth Century.
New York: The Oxford University Press, 1960.
- HAER No. OH-44, John Bright No. 1 Iron Bridge, Carroll Vicinity,
Fairfield County, Ohio.
- HAER No. OH-45, John Bright No. 2 Iron Bridge, Carroll Vicinity,
Fairfield County, Ohio.
- HAER No. OH-86, Blackhoof Street Bridge, New Bremen, Auglaize
County, Ohio.
- HAER No. OH-88, Mallaham Bridge, Columbus Grove, Putnam County,
Ohio.
- HAER No. OH-92, Howard Bridge, Howard, Knox County, Ohio.
- Hofmann, Jan. "Its' More Than Just A Bridge," in The Magazine:
20, supplement to The Dayton Daily News, 6 June 1982).**
- Montgomery County. Journal of the County Commissioners of
Montgomery County. Vol. 5, p. 61, 6 June 1865.**
- Ibid., p. 70, 6 September 1865.**
- David H. Morrison. Drawings of various bridges. Safety
negatives of these drawings are curated at the Ohio
Historical Society Library in Columbus, Ohio and are
accessible to the scholar. Originals in the Morrison Family
Collection, Beaver, Pennsylvania.
- Patent No. 33,954, 17 December 1861.**
- Simmons, David A. "Dayton' Premier Bridge Builder: David H.
Morrison, Civil Engineer." Miami Valley History: A Journal
of the Montgomery County Historical Society, 3 (1991): 18-
30. Revision of "David H. Morrison: Bridge Builder and
Civil Engineer," paper presented at the 9th Annual
Conference of the Society for Industrial Archaeology,
Detroit, 31 May 1980.

Simmons, David A. "Ohio Bridge From 1850 to 1950: Reflections of Society." The Old Northwestern, 12 (Spring 1986): 95-115.

Simmons, David A. "The Risk of Innovation: Ohio Bridge Patents in the Nineteenth Century," in The Proceedings of the First Historic Bridge Conference, in Columbus, Ohio (Columbus, Ohio: Ohio State University and the Ohio Historical Society, 1 November 1985): 108-137.