The Wichert Truss

During the late nineteenth and early twentieth centuries, many variants of the Pratt and Warren truss designs were developed and put into service on United States roads and railroads. An additional significant twentieth century truss type which deserves mention is the Wichert truss, which was utilized in several important bridges built in Maryland.

The Wichert truss is a significant type of continuous truss. Continuous trusses have a chord and web configuration that continues uninterrupted over one or more intermediate supports, compared with simply supported trusses which are supported only at each end. Due to concerns over potential stresses caused by intermediate pier settlement, continuous trusses were not generally employed until the early twentieth century. In 1930, E.M. Wichert of Pittsburgh addressed the problem with his Wichert truss, a continuous truss in which hinged quadrilateral sections were included over the intermediate piers. Wichert's first major truss bridge constructed to this design was the 1937 Homestead High Level Bridge over the Monongahela River at Pittsburgh.

Maryland State Roads Commission engineers, noting the usefulness of the Wichert design for long river spans, built an early example of the Wichert truss between 1937 and 1939, in cooperation with the West Virginia State Roads Commission. A high-level crossing of the Potomac connecting Shepherdstown, West Virginia, with Washington County, Maryland, this extant 1,020-foot-long structure includes six spans of Wichert continuous deck trusses with a 24-foot clear roadway (Maryland State Roads Commission 1939a:80; Pennsylvania Historical and Museum Commission, and Pennsylvania Department of Transportation 1986:124). In 1939-1940, J.E. Greiner Company and the Maryland State Roads Commission incorporated Wichert-type deck trusses in the Governor Harry Nice Memorial Bridge over the Potomac and the Thomas Hatem Memorial Bridge crossing the Susquehanna at Havre de Grace (J.E. Greiner Company 1938). Continuous deck trusses were also utilized in portions of the first Chesapeake Bay Bridge, built between 1949 and 1952 by Greiner under state contract (Brown 1952:17).