



Historic Bridge Foundation Facebook Archives

Did You Know... China's first double-deck bridge was designed by a Pittsburgh-educated engineer?

October 2017

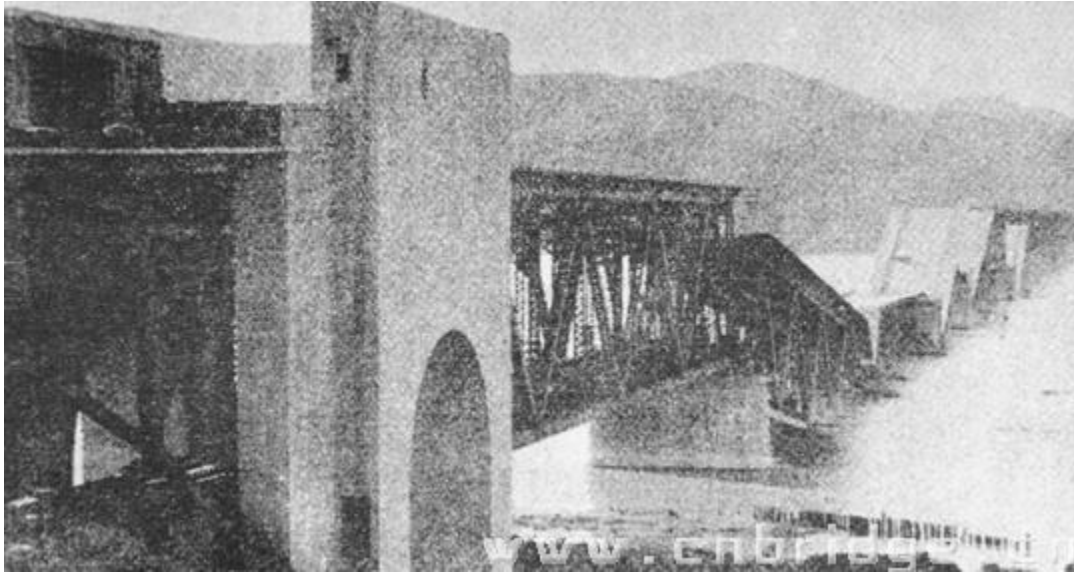
The Qiantang River Bridge (钱塘江大桥) is located in Hangzhou, China and was opened September 26, 1937. The bridge was designed by Chinese engineer Mao Yisheng (茅以升). Mao (1896-1989) graduated from China's Tangshan Engineering College in 1916. He continued his education in the United States, receiving his Master's degree of civil engineering from Cornell University in 1917 and then went on to earn the first PhD ever granted by the Carnegie Institute of Technology in Pittsburgh (now Carnegie Mellon University) in 1921. He is noteworthy in Carnegie Mellon history as the first PhD graduate, and there is a statue of him on campus today, next to a plaque showing the Qiantang River Bridge as well. During his time in America, he also worked for the famous bridge company McClintic Marshall.

The Qiantang River Bridge carries railroad traffic on a lower deck and highway/pedestrian traffic on the upper deck. The main spans are rivet-connected Warren deck truss spans, and there are also steel arch approach spans. It was the first combined highway and railroad bridge in China, and also reportedly the longest railroad bridge in China as well when completed. The bridge was also notable as the first modern steel bridge designed by a Chinese engineer without foreign assistance. Some of the actual construction did involve at least one foreign company however: the noteworthy English steel mill and bridge contractor Dorman Long was involved with the construction phase. The bridge is 3,517 feet long, and has 16 main spans, plus a number of approach spans. In 2006, the bridge was designated as a "key cultural relic" recognizing the bridge's historic significance.

Only a few months after the Qiantang River Bridge was opened, a portion of the bridge was destroyed by the Chinese (ironically under Mao Yisheng's direction) to stop the advance of Japanese troops during the Battle of Shanghai. Mao Yisheng oversaw the reconstruction of the bridge after the war, and the bridge reopened to traffic in 1953.

Mao Yisheng established himself as one of the most important bridge engineers in China with the completion of this bridge. Despite not formally becoming a member of the Communist Party until 1987,

he was retained in his role as a bridge engineer in the new government after 1949 due to his invaluable expertise. He oversaw the design of many large bridges in China. The Qiantang River Bridge in Hangzhou and the 1957 Yangtze River Bridge in Wuhan are his two most famous bridges.



1 Historical photo showing the bridge after a portion was blown up during the Battle of Shanghai.



2 View of bridge in October 2017 from Six Harmonies Pagoda.



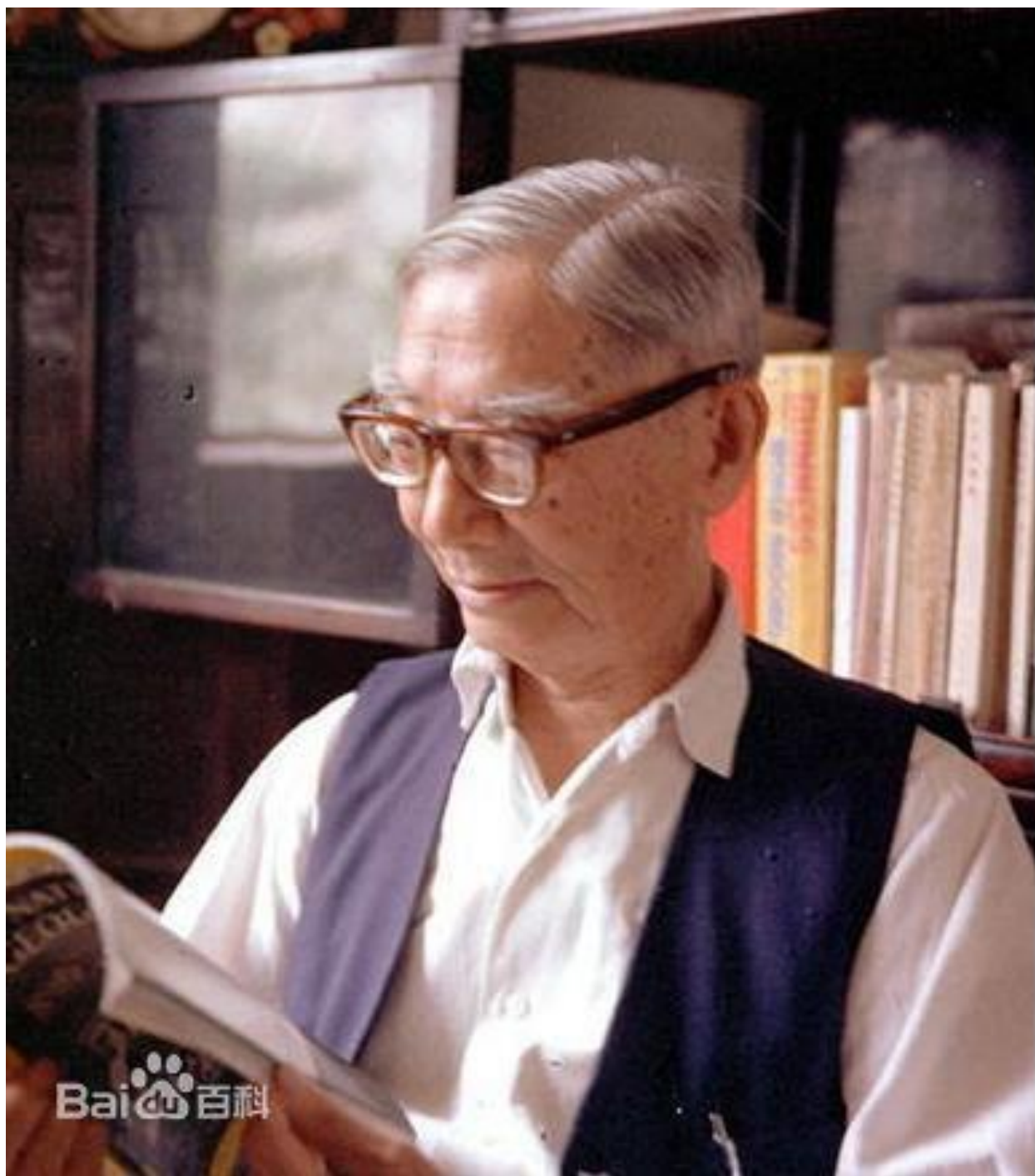
3 View of bridge in October 2017 from along the river.



4 View of bridge in October 2017 from along the river.



5 Mao Yisheng (right) meets Chairman Mao Zedong (left).



6 Mao Yisheng as an older man.



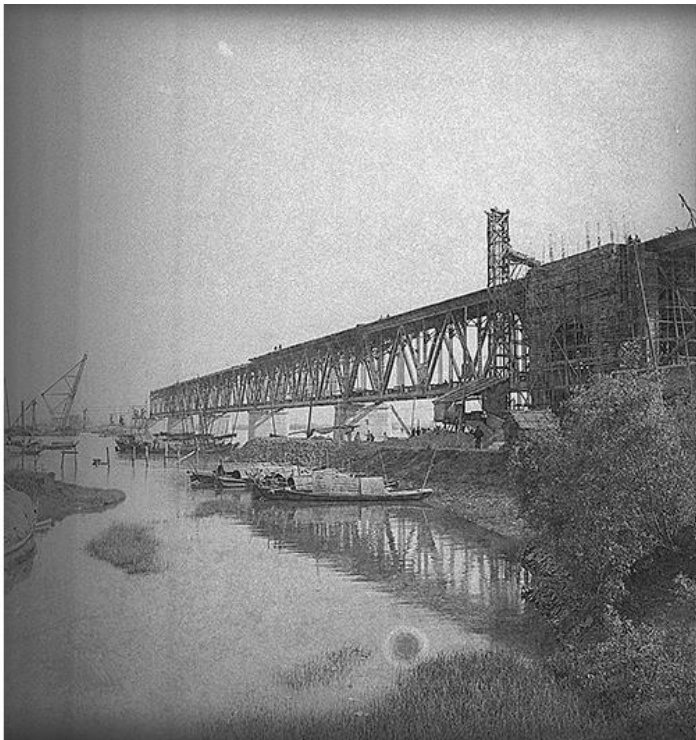
7 Statue of Mao Yisheng in Pittsburgh at Carnegie Mellon University.



8 Historical photo showing construction of the bridge. The truss spans were preassembled and then floated into position over the river.



9 Mao Yisheng as a younger man.



10 Historical photo showing construction of the bridge.

