T.Y. Lin
(1911-2003)

By Jim DeStefano

Tung Yen Lin passed away on November 15, 2003. He was perhaps the most extraordinary structural engineer of the last century. Born in China in 1911, his engineering career spanned over 70 years. His accomplishments as a structural designer, educator, author and innovator have been remarkable.

Working on the Railroad

After earning a Masters degree from the University of California at Berkeley in 1933, T.Y. Lin returned to China to work as a railway engineer. Politically, these were stormy times in China. The Japanese Imperial Army had invaded China and the communist rebellion was gaining strength.

He designed bridges for the railways that were expanding rapidly across the countryside. At age 25 he was made the chief bridge engineer for the mountainous Congqig-Chengdu Railway, where he was responsible for the design of over a thousand bridges. Due to the wartime shortage of steel, some of his designs were not built until decades later.

University Professor

In 1946, T.Y. Lin had an opportunity to return to UC Berkeley as a professor. He became known for his unique teaching style. He taught his students how to design structures rather than just to analyze them. His courses stressed understanding of structural forms and structural behavior, and de-emphasized the mathematics.

In 1976, he retired from the University to spend more attention on his structural design practice.

The Father of Prestressed Concrete

T.Y. Lin was often referred to as the "Father of Prestressed Concrete." The technology of prestressed concrete was first developed in Europe. T.Y. Lin became intrigued by this new technology and, in 1953, traveled to Belgium and spent a year working in the laboratory of Gustave Magnel performing research in the development of prestressed concrete.

While in Belgium, he wrote a textbook on Prestressed Concrete that made the new technology easy to understand. His book was translated into several languages, and taught engineers around the world how to design prestressed concrete structures.

He developed the "load balancing" method for designing prestressed concrete. This method was easy to understand and did not require excessive mathematical calculations.

After returning to the United States from his year in Belgium, he promoted the new technology to the California Highway Department and convinced them to build bridges with prestressed concrete. For decades, he innovated and promoted the use of prestressed concrete for long span structures, buildings, nuclear containment vessels and bridges.

T.Y. Lin International

In 1953, he formed the consulting engineering firm of T.Y. Lin Associates in Los Angeles. The firm was managed by a former student, while T.Y. Lin divided his time between teaching and practicing engineering. In the early years, the firm's clients were all precast concrete producers who were just starting to manufacture prestressed components. Later, post-tensioning suppliers became the firm's primary clients.

Over the next two decades, several branch offices were started across the United States, Central America, and Asia. The San Francisco branch became the flagship office and later evolved into T.Y. Lin International. They became known for designing signature bridges and long-span building structures.

In 1992, T.Y. Lin left the firm after it had been sold to a large "full-services" transportation engineering firm. Since leaving T.Y. Lin International, he continued to design structures as a consultant affiliated with OPAC Engineers in San Francisco.■

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