



Alan M. Viet

# IVAN M. VIEST

1922–2012

Elected in 1978

*“For contributions to design of structures, including composite construction, earthquake resistance, and load factor design specifications.”*

BY JOHN W. FISHER

IVAN M. VIEST, retired consultant, died on February 11, 2012, at the age of 89. He was born on October 10, 1922, in Bratislava, Slovakia, one of three children of Ivan G. and Maria (Zacharova) Viest. His father was a mechanical engineer with the Slovak Railroad and became president of its operations in 1936. In his teens Ivan acquired a love of hiking, often with his father, as well as skiing in the Tatry Mountains of Slovakia. His family lived most of his life in Bratislava, except for three years (1933–1936) when his father was promoted to the railroad director in Kosice. After high school in Bratislava Ivan entered the Slovak Technical University in 1941. Toward the end of World War II, he took part in the Slovak National Uprising against the Slovak quisling government and joined the Czechoslovak army in 1945. The end of the war allowed him to complete his studies and he received his degree in civil engineering in October 1946.

Ivan immigrated to the United States in April 1947, after completing his civil engineering studies at the Slovak Technical University in Bratislava. He had been awarded a graduate scholarship by the Rotary Clubs of Georgia to attend the Georgia Institute of Technology. After graduation from Georgia Tech with an MSCE in June 1948, he joined the Department of Theoretical and Applied Mechanics at the University of

Illinois at Urbana-Champaign in September 1948 as a research assistant. He completed his PhD degree in October 1951, with research on the shear strength of reinforced concrete and the strength of long reinforced concrete columns. He was put in charge of the reinforced concrete research in 1953 as research assistant professor in the Department of Theoretical and Applied Mechanics. He became a citizen of the United States and was promoted to research associate professor in 1955. He started studies on composite steel-concrete members in 1954, on the use of stud shear connectors to provide the means of connecting the concrete slab to steel beams to create the composite system. These studies resulted in the American Association of State Highway Officials (AASHO) adopting his design procedures in 1956, where they were immediately used in bridge design and construction.

Ivan left the University of Illinois in 1957 and accepted a position as bridge engineer at the Highway Research Board of the National Academy of Sciences, as AASHO had requested the Academy to carry out a multiyear research project into the performance of highway pavements and bridges at the AASHO Road Test in Ottawa, Illinois. The project demonstrated that (1) passages of heavy vehicles could produce fatigue failures in highway bridges as predicted by laboratory fatigue tests; (2) vehicle impact on bridges is a function of the vehicle characteristics, roadway roughness, and bridge characteristics; and (3) basing the design of bridges on their ultimate strength rather than solely on the conditions of everyday service was practical and economical. Ivan was a recognized expert in the area of composite construction, which led to the publication of his first book by McGraw-Hill, *Composite Construction in Steel and Concrete*, which he coauthored with R.S. Fountain and R.C. Singleton in 1958.

On completion of the AASHO Road Test research program, Ivan joined Bethlehem Steel Corporation as a structural engineer in the new Sales Engineering Division in 1961, where he worked for 21 years, attaining the position of assistant manager in 1974. The division provided customers with job-specific and general information on economic applications of structural steel. Ivan also served as Bethlehem's representative

on the American Iron and Steel Institute (AISI) Engineering Subcommittee that initiated and promoted significant research on steel structures, particularly for earthquake resistance, and improvements in the design and performance of steel structures. The occurrence in the 1960s of catastrophic earthquakes in Turkey, Skopje, Macedonia, and Alaska served to initiate these studies. Ivan was one of the five-member AISI team sent to evaluate the Skopje and Alaskan earthquakes and their impacts on various types of structures.

Ivan continued with industrywide research on steel structures and its focus on ultimate strength design throughout his career at Bethlehem Steel and as a consultant. He became a member in 1961 of the American Institute of Steel Construction (AISC) Specification Committee, as a result of his expertise in composite construction, and served in that capacity for 40 years. His work with the AISC specifications, where he promoted research and development, led to basically new procedures considering load and resistance factor design for buildings and bridges. He served in many offices and technical committees of the American Concrete Institute, Reinforced Concrete Research Council, Engineering Foundation, American Society of Civil Engineers (ASCE), International Association for Bridge and Structural Engineering, American Institute of Steel Construction, American Iron and Steel Institute, and the Transportation Research Board of the National Academies.

His professional achievements were recognized by the ACI Wason Medal for Materials Research in 1956, the ASCE Walter L. Huber Civil Engineering Research Prize in 1958, and an ENR Construction award in 1972. He was elected to the National Academy of Engineering in 1978 for "contributions to design of structures, including composite construction, earthquake resistance, and load factor design specifications." He was elected a distinguished member of the ASCE in 1980 and received the Ernest E. Howard Award in 1991. He was honored with a Doctor Honoris Causa from the Technical University of Kosice in the Slovak Republic in 2002 as part of the celebrations marking the school's 50th anniversary.

After his retirement from Bethlehem Steel in 1982, Ivan started a new career as a private consultant, opening IMV

Consulting in 1983. He first managed the AISI-FHWA joint research project on Structural Modeling for Autostress on behalf of the engineering firm Wiss, Janney, Elstner. He also served as an expert witness in several cases and as an expert for New York engineering firms such as Ammann & Whitney for the Williamsburg Bridge cable rehabilitation.

He also devoted significant time to projects such as researching and writing books, including *The First 75 Years: A History of the Engineering Foundation*, which he coauthored with historian Lance Metz in 1991, and *75 Years of the Lehigh Valley Section of ASCE*, which he coedited with ASCE member Harold Clemmer in 1997. As editor in chief he coordinated preparation of the book *Composite Construction Design for Buildings*, published by McGraw-Hill in cooperation with ASCE in 1997. He wrote his autobiography, *An Immigrant's Story*, published in 2006 by the Xlibris Corporation.

After the fall of communism he made his first visit to Bratislava in 1990, reestablishing personal contacts with relatives and friends. He also translated into English and annotated the handwritten diaries of his uncle, General Rudolf M. Viest, who was a member of the Czechoslovakia government in exile in London during World War II and became commander of the Army in Slovakia in 1944. His uncle was captured by the Germans in 1944 and died in Berlin in 1945. The translation, entitled *Call to Arms Came in 1938*, followed closely the original text and was published in 2009.

Outside of his engineering activities, Ivan was an avid golfer and traveler. He was a member of the Saucon Valley Country Club, where he started golfing in 1973, and enjoyed dinners and luncheons with friends and regular golfing partners into 2011.

He met his wife, Barbara Kay Stevenson, in 1952 as she was completing her studies in chemistry at the University of Illinois. They married in May 1953. She preceded him in death on January 24, 2012. His older sister, Zora Jana Viestova, died in Slovakia after an accident in 2002. He is survived by his younger sister, Tatiana Maria Simkova, her daughter Tatiana Mikusova, and several nieces and nephews, all in Slovakia.

