



Harold F. Fyfe

GERARD F. FOX

1923–2008

Elected in 1976

“For contributions in structural theory with innovative elements of construction practice in building bridges.”

BY WAI-FAH CHEN AND JOHN M. KULICKI

GERARD F. FOX, an internationally recognized leader in long-span bridge design, died December 12, 2008. He was born in 1923 and graduated from LaSalle Academy.

He served three years in the Army Air Corps during World War II at Eglin Air Force Base in Florida, where he worked on a research project to develop bomb sights. After the war he attended Cornell University and graduated with distinction in civil engineering in 1948.

A licensed professional engineer, Fox was a bridge designer at Howard Needles Tammen & Bergendoff (HNTB) for 40 years, retiring in 1988, having been a partner for 21 years, responsible for bridge projects firm-wide. Prior to becoming a partner, he was chief structural engineer in the New York City Office of HNTB, directing structural design, detailing, and the preparation of plans and specifications for bridges and related structures.

Fox was in charge of the design of the longest segmental concrete cable-stayed bridge in North America—the Dames Point Bridge in Jacksonville, Florida, originally designed in both concrete and steel, with a center span of 1,300 feet, and the Rio Niteroi Bridge in Brazil, with a record steel box girder span of 984 feet. Both were awarded the American Consulting Engineers Council Grand Conceptor Award.

He also designed or supervised all types of steel and concrete bridges, including the 5.2-mile Penang Bridge, a 1,444-foot three-span segmental concrete cable-stayed bridge linking Penang Island with the mainland of Malaysia, and the Cooper River Bridge in Charleston, South Carolina, an innovative parallel chord steel truss with a span of 800 feet, among others. He served as a member of the World Bank's Design Review Panel for the Bahrain Causeway Project and as a member of the Cornell University panel to evaluate the condition of the cable system of the 1,000-foot radio telescope structure at the Arecibo Observatory in Puerto Rico. A renowned expert in bridge design, Fox continued to consult on major bridge projects for Caltrans, including the San Francisco–Oakland Bay Bridge from 1998 until 2007.

Fox pioneered the use of the computer for engineering problem solving, attending IBM schools for programming instruction and subsequently developing large-scale structural analysis and design programs to run on mainframe electronic computers. At Columbia University he taught bridge design for 20 years, using his computer applications. In 1986 he was awarded the first adjunct professor award “for outstanding contributions to the school through inspired and effective teaching.”

He lectured at many other universities, including courses in bridge design at Cornell University. He was very involved in the Cornell University Alumni having served as President of the Cornell Society of Engineers (CSE), a member of the Civil and Environmental Engineering Advisory, and Director Emeritus of the Cornell Engineering Alumni Association (CEAA).

Fox was elected to membership in the National Academy of Engineering in 1976, “for contributions in structural theory with innovative elements of construction practice in building bridges.” He was honored in 1980 with the American Society of Civil Engineers (ASCE) Ernest E. Howard Award, bestowed for his innovative contributions to and advancement in the design of long-span bridges. In 1986 he was awarded the ASCE Metropolitan Section's Roebling Award for eminence in

design and rehabilitation of bridges. In 1987 at the International Bridge Conference, he was presented with the John A. Roebling Medal for lifetime achievement in bridge engineering. In 1999 the American Institute of Steel Construction presented him with a Lifetime Achievement Award in special recognition of his many years of exceptional service. He was an honorary member of the ASCE and the International Association of Bridge and Structural Engineers and a life member of the Structural Stability Research Council. He also served on the Committee on Steel Bridges of the Transportation Research Board.

In 1995 Fox received an honorary doctor of science from the New Jersey Institute of Technology for his engineering achievements in long-span bridge building and in appreciation of his continued dedication to advancement of the field.

Fox was often asked for his expert opinion on bridge failures, including in an article in *The New York Times* on July 15, 1983, entitled "Bridge Design Experts Discuss Issues of Safety" and on *The Today Show* in 1988. He authored a chapter on arch bridges in the *Bridge Engineering Handbook* (edited by Wai-Fah Chen and Lian Duan).

Fox's favorite pastime outside work was spending time with his children and grandchildren and surf fishing at Montauk Point. Survivors include his wife of 59 years, Jeanne McNulta, his daughters Maureen (Rodney VenJohn), Catherine (Genaro Lozano), and Elizabeth; his grandchildren, Madeline and Joseph; and siblings Grace McCabe and Donald Fox. His daughter Patricia passed away in 2002.