

THE FATHER OF LRFD

While best known nationally for his work on ultimate strength design, his students know him as a brilliant teacher

By Jenifer Golec

WHILE SOME PROFESSORS ALL-TOO-OFTEN SIMPLY REHASH LECTURES from year-to-year, Theodore V. Galambos is well known for bringing fresh thoughts to each class.

"Ted would not simply use his old notes," said Jerome Hajjar, associate professor of Structural Engineering at the University of Minnesota. "Page after page of recently worked problems would be in each notebook. That is how he kept his mind fresh on the subject. Not just through intuition and past experience, but through hard and patient effort."

Hajjar said that Galambos, an

Emeritus Professor of Structural Engineering at the University of Minnesota, has a remarkable commitment to teaching.

"His graduate classes were among the most challenging in the department," Hajjar said. "With his undergraduate classes, he would strive to reach each student and his door was always open."

While his students know him as a great professor, Galambos is best known in the structural steel industry for his work on the development of the 1986 AISC-LRFD Specification, which garnered him the T.R. Higgins award in 1981. His work championing limit states design earned him the affectionate title "the father of LRFD."

"Ted Galambos is one of the distin-

guished research pioneers in advancing plastic design, stability, and reliability in structural steel," said Nestor Iwankiw, AISC's Vice President of Engineering and Research. "All this reached its engineering culmination with his major efforts in the development of the modern AISC Load and Resistance Design (LRFD) Specification, for which Ted continues to be a zealous advocate."

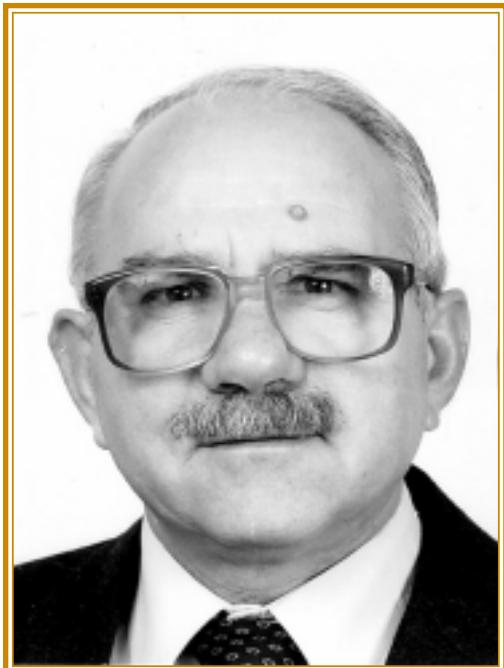
For his accomplishments as both a professor and researcher, Galambos was recently awarded the Geerhard Haaijer Educator Award by AISC. The award is given in special recognition to individuals who have had a profound and lasting impact in developing a unique application for engineering practice or in the mentoring of future technical leaders. Named for one of AISC's most respected vice presidents, this new award honors those who, through their research and teaching, have had an outstanding impact on advancing the use of structural steel framing in the construction industry. The Award will be presented at this year's North American Steel Construction Conference in Toronto.

IMMIGRANT EXPERIENCE

Galambos' achievements are even more amazing when you consider that his career in civil engineering began after he picked it out of a book describing various careers.

As a teenager, Hungarian-born Galambos spent time with his family in a German refugee camp before coming to the United States. While there, he met a Quaker who was teaching English to residents and she asked him, "What are you going to do in America?" Galambos had no career plans at the time, so she gave him the aforementioned book to read. The description of a civil engineering career sounded the most interesting to him.

"I have never been disappointed," Galambos said of his choice. "It's the most wonderful profession in the whole world."



Theodore V. Galambos is widely regarded as one of the pre-eminent steel educators of his generation.

In 1949, his family immigrated to a small town in North Dakota and Galambos got his first job as a yard boy for a steel fabrication shop. He attended the University of North Dakota from 1949 until 1954, where he received his BSCE and MSCE. Galambos said he stayed on to receive his MSCE because "I couldn't get a job because I wasn't a U.S. citizen." He became a citizen in May 1954 and received his MSCE the next month.

He immediately began working at Babcock and Wilcox Company in Barberton, OH, designing boiler structures. Ironically, just four months later Galambos was drafted into the U.S. Army where he worked on airfield construction on the missile range in the Bahamas until April 1956.

Galambos returned to Babcock and Wilcox after the Army, but decided that he "needed more education to cope with the challenges of the modern world." He wrote letters to both Lehigh University and the University of Illinois expressing his interest in pursuing a Ph.D. at the respective universities. While Illinois sent him a letter detailing the rules and procedures for beginning his study, he received a personal call from Lehigh. This prompted him to choose Lehigh and he arrived there on September 1, 1956. Galambos received his Ph.D. in June 1959 and stayed there as a research assistant professor until September 1965.

"Ted provided an unusual example. He got right out on the floor with his graduate students, working with them in their testing," said Lynn Beedle, a professor at Lehigh University—and the man who made the personal phone call to Galambos in 1956. "And the team atmosphere was so strong that, when more hands were required to conduct the large experiments on projects that were not his own, he would often be seen there with a helping hand."

After almost a decade at Lehigh, Galambos was invited to give a seminar at Washington University in St. Louis, and eventually he made the decision to work at Washington on a full-time basis.

"He made the best of what Fritz Lab, the Civil Engineering Department, and Lehigh affords," said Beedle of Galambos' departure from Lehigh. "He joined the host of those who preceded him, and who followed, in adding to our

reputation as a premier place to work."

NEW BEGINNINGS

Galambos headed to St. Louis as the first holder of the Harold D. Jolley Professorship and was appointed professor of civil engineering. He also served as department chair from 1970 to 1978.

"I had the opportunity to build a department from scratch at Washington University," Galambos said. "It is now one of the finer civil engineering departments in the country."

From there, the chance to yet again strengthen a civil engineering program led Galambos to the University of Minnesota. He stayed there until his retirement in 1997. However, retirement hasn't kept Galambos from returning to his research work or the classroom. In fact, he is currently teaching a new seminar on bridges to freshman this quarter.

"Teaching, for Ted, is a moral commitment," said Hajjar. "It is his way of giving back to society. For all his contributions to the steel industry, this perhaps is his greatest."

Galambos said that he has "always loved teaching" even as a high school student tutoring his peers. "If I teach, I have to know what I am teaching and then I learn," he said. "Now I see the successes of my students and I am very proud."

Beyond teaching, his field of expertise encompasses structural stability and structural reliability and he has had a leading role in the development of AISC, AISI, SJI and ASCE-7 Standards. Among his better known books are: "Structural Members and Frames," and "Basic Steel Design with LRFD."

Galambos has served on numerous AISC and ASCE committees over the years, as well as being a member of the North American Coordinating Committee on Structural Steel Design. He will present a paper comparing U.S., Canadian and Mexican steel design practices at this year's NASCC in Toronto.

When he is not working, Galambos, who turns 70 this April, said he likes to take pictures and travel with his wife, Barbara, who is an avid bird watcher. In fact, they are planning a trip to South Africa this summer and Australia next year.

"I'll just keep on doing what I can," he said.



A bookmark bearing this old photo was presented to attendees at a symposium titled "Innovations in Structural Steel Design: Strength, Stability, Reliability," which was held in honor of Ted Galambos in 1997.