



Anton Tedesko

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1903-1994

By Ivan M. Viest

Anton Tedesko, designer of long-span reinforced concrete shells and of structures for launch facilities for military and civilian rocketry, died in Seattle, Washington, of myelofibrosis on April 2, 1994, at the age of ninety. He was associated for many years with the design firm Roberts and Schaefer, last serving as vice-president.

Elected to the National Academy of Engineering (NAE) in 1967, he served on several Academy committees, particularly during its formative years, was always on the lookout for deserving candidates, and attended NAE meetings regularly as an active participant. Congenial, attentive to his fellow members, and concerned with the well-being of his profession, he became to many of us over the years Mr. Civil Engineer of the Academy.

Anton was born of Viennese parents on May 25, 1903, in Germany, and grew up and was educated in Austria. He spent his early years in Vienna, went to high school in Graz-Wiener Neustadt, and pursued academic studies at the Institute of Technology in Vienna, where he had superb teachers. Anton considered himself lucky to have studied at the institute during the post-World War I years, which were a period of great cultural and intellectual activity in Vienna. Famous men of many fields lived in the city and influenced the worlds of science, art, literature, drama, and music. Anton went to more than one hundred music and theater events each season. It

was this deep exposure to the Vienna climate and experiences that contributed to his well-rounded education. The formal results of his studies included a civil engineering degree from the Institute of Technology in Vienna in 1926, a Diploma Engineering degree from the Technological University of Berlin in 1930, and a D.Sc. degree from the Institute of Technology in Vienna in 1951.

Upon graduation in 1926 and after a brief construction experience in Vienna, he departed for the United States, where he spent two years working as a detailer and steel designer. On his return to Austria he became an assistant at the Institute of Technology under Ernest Melan, professor of steel design and construction. He was also placed in charge of a team designing industrial structures. Twenty years later, under Professor Melan, he wrote a dissertation on his experiences with strain gages placed inside full-scale long-span concrete structures, which was the basis for his science doctorate.

In 1930 Tedesko joined Dyckerhoff and Widmann, engineers and constructors known as outstanding builders of dams, bridges, and tunnels, who pioneered reinforced concrete. Tedesko felt fortunate that he was accepted as a coworker under brilliant and stimulating leaders. Two of them, Ulrich Finsterwalder and Hubert Rüschi, were later elected foreign associates of the NAE. Tedesko worked on the design of the Great Market Hall in Budapest and on the detailed analysis of the shell of a large storage hall at Tertres (Belgium), which became a prototype for many subsequent structures. One of Dyckerhoff and Widmann's new specialties was thin-shell concrete construction, and someone came up with the idea that Tedesko should return to the States and introduce shell construction to America.

An agreement was signed with Roberts and Schaefer Company to promote shell construction, and Tedesko joined the firm's office in Chicago. The depression slowed progress; many designs were made, few structures were built. Tedesko traveled by rail all over the United States. He became well acquainted with different parts of the country and years later was proud to note that he had been to all fifty states.

A major breakthrough came when the Hershey Chocolate Company wanted to build a shell structure for a sports arena. Tedesko became, at thirty-three, the designer, organizer, decision maker, and construction supervisor. When completed in 1936, the Hershey Sports Arena was the longest-span concrete building structure in the world. Tedesko established his own rules for the design and construction, which were later adopted by the industry. Publicity relating to the Hershey Arena opened the door for other shell structures. World War II found Tedesko as the manager of the Roberts and Schaefer office in Washington, where many shells were designed for Army, Navy, and Air Force installations. These structures used a minimum of scarce strategic materials and were built using industrial production methods.

After the war, he became structural manager of Roberts and Schaefer in Chicago and from 1956 to 1967 served as vice-president in New York. His responsibilities included engineering, design, cost estimating, and supervision of construction. Leading architects, such as Minoru Yamasaki and I. M. Pei, teamed up with him at times. He was responsible for the coliseum in Denver; ice arenas in Victoria, British Columbia, and Quebec City; and airplane hangars in Buenos Aires, San Diego, and Rapid City, South Dakota. As a consultant to the U.S. Air Force Headquarters from 1955 to 1970, he was involved as a troubleshooter and in decisions leading to innovative solutions for new construction and renovation.

Anton Tedesko and his Roberts and Schaefer team worked on underground launch control center domes for the ballistic missile division of the Air Force. This led to his involvement in the development of concepts and criteria for ground installations pertaining to large rockets. He became the responsible engineer for the launch pad of the Atlas Centaur space vehicle at Cape Canaveral, which included a 200-foot movable tower and a concrete dome control center. This installation was considered the takeoff point for the first trip to outer space. It was successful and later led to Tedesko's involvement in the Apollo manned lunar landing program. He was one of

the four principals of URSAM, the multidisciplinary team of designers and consultants working for the National Aeronautics and Space Administration.

He considered his most exciting assignment that as structural engineer responsible for the assembly and launch facilities for the manned lunar landing program, including the Vehicle Assembly Building, the largest building on record, built in record time. The project received the 1966 Outstanding Civil Engineering Achievement Award of the American Society of Civil Engineers. Anton spoke in glowing terms of his first experience at an Apollo moon launch, the miraculous lift-off, the enormous sound, and the flames. He was stunned and shaken by this encounter.

In 1967 he left Roberts and Schaefer and opened his own office, continuing along the same lines as structural engineer on high-rise buildings and as a consultant to government agencies, contractors, and other engineers. As an investigator of structural failures, he planned the rehabilitation of damaged structures, such as the bridges of the Chicago rapid transit system. He belonged to the panel of arbitrators of the American Arbitration Association. Among his most stimulating assignments was that of one of three referees in the Federal Court in North Dakota in connection with the failure of an eighteen-mile prestressed concrete pipeline.

Tedesko was an invited lecturer at Columbia, Cornell, Illinois, Kansas, Lehigh, Notre Dame, Princeton, Purdue, and numerous other universities, and served as a speaker or moderator at many professional meetings. He steered graduate programs at North Carolina State and Cornell Universities. His technical publications, numbering about seventy, documented many of his structures and contributed to the advancement of design and construction in both practical and theoretical aspects. He was active in many professional groups, serving as a member of the board of directors of the American Concrete Institute (ACI), director of a section of the American Society of Civil Engineers (ASCE), and a member of numerous technical committees and councils. For nearly eight years he served as the first chairman of the Joint ACI-ASCE Shell Committee, which prepared the

basic report on concrete shell practice; he remained a member of the committee until his death. He served many years on the executive committee of the Reinforced Concrete Research Council and as a U.S. delegate on the Permanent Committee of the International Association for Bridge and Structural Engineering. He attended congresses in North and South America, Europe, and Japan.

Anton Tedesko received numerous awards. He was the first American recipient of the International Award of Merit in Structural Engineering given by the International Association for Bridge and Structural Engineering. The American Concrete Institute gave him the Alfred E. Lindau Award and the Henry C. Turner Medal for accomplishments in long-span structures and for innovations and professional competence. He received the Arthur J. Boase Award in recognition of his pioneering work and his achievements in the field of shell structures. The American Society of Civil Engineers, the American Concrete Institute, and the International Association for Shell and Spatial Structures made him an honorary member. Lehigh University and the University of Vienna awarded him honorary doctorates in engineering and in science.

Tedesko had many interests besides engineering. He was an enthusiastic skier for most of his life and loved the mountains; his favorite ski vacation spots were in Utah and Colorado. He rowed in his racing shell during the years he lived close to Lake Michigan. The composers whose music he knew best were Beethoven, Richard Wagner, Gustav Mahler, and Richard Strauss.

Anton Tedesko and Sally Murray were married in Chicago and had two children and four grandchildren. Daughter Suzanne produced documentaries and has collaborated with Seattle's public television station. Son Peter is an electrical engineer and marketing manager with Westinghouse Electric Corporation.

Anton Tedesko was an outstanding engineer, eminent designer, and builder of pleasing and innovative structures, one with a warm human touch who has given guidance and strength to many in his profession.