GEORGE FRIEDRICH WISLICENUS

Dr. George Friedrich Wislicenus died in Santa Rosa, California, on Saturday, April 2, 1988, at the age of eighty-four. Dr. Wislicenus was Mr. Turbomachinery to several generations of practitioners in fluids engineering and remained active during his retirement as a consultant and author in the field. His most recent publication was the "Preliminary Design of Turbopumps and Related Machinery" which was published by NASA as Reference Publication 1170 in October 1986.

Dr. Wislicenus was well-known for his contributions to the field of fluids engineering, most specifically in the areas of turbomachinery, cavitation, compressors, and pumping machinery. He was an early pioneer in the transonic compressor field, and made notable contributions to the unified theory of turbomachinery. His book, *Fluid Mechanics of Turbomachinery*, first published in 1949, and then supplemented and reprinted in 1965 by Dover, is considered to be one of the most authoritative in the design of turbomachinery, and remains a leading source of information for workers in that field of engineering. In addition to many contributions to technical journals, Dr. Wislicenus authored a section on "Centrifugal Pumps" in *Marks' Mechanical Engineers Handbook*.

In July 1969, Dr. Wislicenus retired from The Pennsylvania State University, University Park, Pennsylvania, where he served as Head of the Department of Aerospace Engineering, and Director of the Garfield Thomas Water Tunnel of that University's Applied Research Laboratory. As director of the largest known water tunnel in the world, he directed research on the propulsion of submerged bodies and brought many principles of air-breathing propulsion to the field of underwater propulsion; in so doing, he developed design methods which greatly extended the cavitation-free operating limits of underwater propulsors. In 1979 he received the Applied Research Laboratory's Distinguished Performance Award.

Before going to Penn State in 1954, Dr. Wislicenus was Chairman of the Mechanical Engineering Department at Johns Hopkins University in Baltimore Maryland, a position he held for six years. During this same period, he participated in an aircraft nuclear propulsion project at the Oak Ridge National Laboratories. From 1945 to 1948, he was Assistant Chief Engineer of Design and Research in the Aircraft Engine Division of the Packard Motor Company at Toledo, Ohio, where he signed as inventor for the first American fan engine. As hydraulic engineer and research engineer with the Worthington Pump and Machinery Company in Harrison, N.J., from 1935 to 1945, Dr. Wislicenus directed the design and development of a variety of pumps, and pioneered the application of supersonic relative velocities in axial flow compressors. During his career he served as consultant to the Worthington Corporation, the Aeronautical Division of Curtis-Wright Corporation, Oak Ridge National Laboratories, General Electric Company, Rocketdyne Division of North American Aviation, Inc., Goulds Pump Company and the U.S. Navy. For many years he worked closely with the NASA Lewis Research Center on their research in the fluid mechanics of turbomachinery. Dr. Wislicenus was granted fourteen patents by the United States in areas involving design of compressors, pumps, propellers, and propulsion systems.

Dr. Wislicenus served as a member of the NASA Research and Technology Advisory Subcommittee on Air Breathing Propulsion, and as a member of the NACA Subcommittee on Compressors and Turbines. He was a member of the National Research Council's Panel on Hydrodynamics of Submerged Bodies, and in 1958 was Chairman of the Bureau of Naval Ordnance Systems Command Hydroballistics Advisory Committee.

A Fellow of The American Society of Mechanical Engineers, he served that organization as Chairman of its Hydraulc Division in 1957, as chairman of its Cavitation Committee in 1960–1961, and as a member of the Executive Committee for its Professional Group on Underwater Technology. He received the first ASME Fluids Engineering Division Award in 1968 in Philadelphia where the spring conference of the Fluids Engineering Division was dedicated to him. In 1980 he received the ASME Centennial Medallion for distinguished service. He was a Fellow of the American Institute of Aeronautics and Astronautics, and in 1960 was an initial and founding member of that society's Technical Committee on Underwater Propulsion. Dr. Wislicenus was a member of the American Society of Engineering Education, the International Association for Hydraulic Research, the American Society for the Advancement of Science, Sigma Xi, and Pi Tau Sigma.

Dr. Wislicenus was born in Strasbourg, Alsace, on August 27, 1903. After receiving his degree from the State School of Mechanical Engineering in Wurzburg, Germany, he came to the United States in December 1926, and then completed his master of science and doctor of philosophy degrees at the California Institute of Technology under the guidance of Dr. Theodore von Karman. On May 13, 1931, he married Lisel Weischedel, who died on November 2, 1987. Dr. Wislicenus is survived by his three grandchildren, Christie, Sandie, and Mark, and by one great-grandchild, Ashley Wislicenus. His only child, Wolfram Dreyer Wislicenus, died in an accident in 1976. Members of the immediate family may be contacted at 5911 La Cuesta Drive, Santa Rosa, California 95409 (Telephone: 707-538-1348).

Throughout his career, Dr. Wislicenus was an inspirational leader and a strong advocate of advanced training and graduate study in fluids engineering. Consequently a fund is being established at Penn State which will eventually be used to assist students in graduate study. Contributions may be made to the George F. Wislicenus Memorial Fund, One Old Main, The Pennsylvania State University, University Park, PA 16802.