

MEDALIST FOR 1994

For a legacy of developments in aeronautics where none previously existed; for mentoring a cascade of students and colleagues dedicated to the art and science of fluid mechanics and for a lifetime of inspiration and leadership to the international engineering community.



HELMUT H. KORST

Born January 4, 1916 in Vienna, Austria, Helmut Korst attended the Realschule Vienna VIII, and the Technical University of Vienna where he received the degree of Diplom-Ingenieur in 1941. Following graduation, he was employed as a gas turbine engineer at the Institute for Flow Research of Maschinen-Fabrik-Augsburg-Nuremberg A.G. After World War II, he joined the faculty at the Technical Institute of Vienna, and received his Doctorate of Technical Science in 1947.

With the assistance of Professor William Sears (Cornell University), he became a Visiting Lecturer at the University of Illinois in 1948, beginning a career that would span 55 years. Along with two others, he developed the graduate and research programs in the Mechanical Engineering Department and served as the Chairman from 1962 to 1974.

During the 1950's, Professor Korst and his students formulated the first solution to the base pressure, temperature and drag problem, which was essential to the success of ballistics missiles such as the Atlas. In the mid-1950's, he demonstrated the importance of induced and separated turbulent flow effects on propulsion airframe drag, a critical item for aircraft such as the supersonic B-58. His work identified and analyzed the nacelle interference drag that occurred in aircraft such as the Convair 880/990. Professor Korst's work in gas dynamics resulted in the development of a theory for the modeling of hot exhaust jets with cold distorted nozzles, thereby explaining the difference between wind tunnel tests and full scale flight results.

His work on viscid-inviscid flow interactions led to a range of applications such as those at the Army Missile Command, the Minuteman, Saturn and SCRAM. He has consulted on missile aerodynamics for the USAMC, NASA, NATO/AGARD and aerospace organizations such as Convair, GE, Boeing and Rocketdyne. He has lectured extensively in the United States and abroad and developed joint research activities with other universities and government institutes.

Among his honors, he is an AIAA Fellow, an ASME Honorary Member and an ASME Life Fellow.