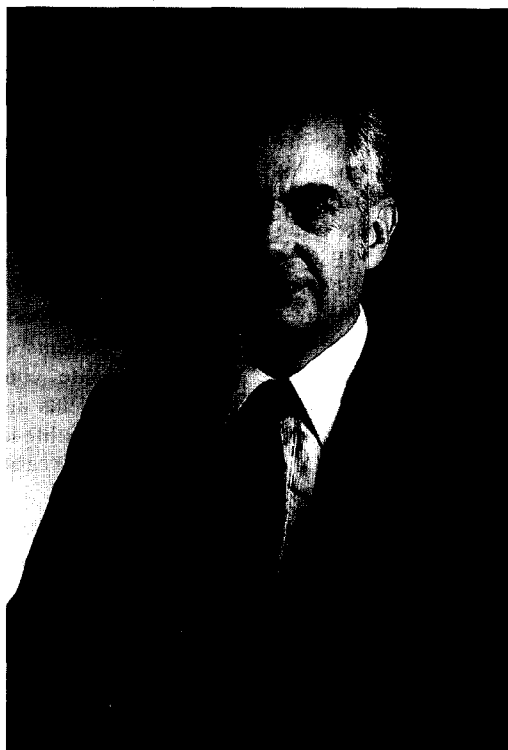


## Professor Donald K. Edwards on his 65th birthday



It is with great pleasure that we celebrate in October the 65th birthday of Professor Donald K. Edwards, whose contributions to the field of heat and mass transfer have made an impact, in a very significant way, on our knowledge of radiative and convective heat transfer, including surface and gas radiation properties, radiation in combustion systems, spacecraft heat transfer, solar energy utilization and solar collection design, phase-change processes, and heat-pipe technology.

Professor Edwards was born on 11 October 1932 in Richmond, California. Early in his life he was exposed to the practical aspects of engineering through his father, who was a mechanical engineer with Standard Oil, and his uncle Eldred Edwards, who was a noted inventor and designer. This background facilitated his being able to achieve a unique balance between engineering science and technology throughout his career. Growing up on San Francisco Bay led to a keen interest in sailing, an activity that he enjoys to the present day. In later years, visitors to Don and his late wife, Nathalie, at their cabin on Big Bear Lake would not be able to escape the mandatory sail on the lake. He was also an avid reader and bridge player in

his early years (the latter activity apparently competed for his attention while he was an engineering student, with near disastrous consequences).

Not far from home, he attended UC Berkeley, where he received his B.S. degree in Engineering with highest honors in 1954. He remained at Berkeley for his graduate education and received the M.S. and Ph.D. degrees in 1956 and 1959, respectively. His Ph.D. dissertation, "Experimental determination of the band absorptivities of carbon dioxide gas at elevated pressures and temperatures", provided an early glimpse of what would be an outstanding record of contributions to fundamental and applied knowledge of heat and mass transfer, for almost four decades. After completing his Ph.D., he spent a year working as a Thermodynamics Engineer at Lockheed Aircraft at Palo Alto, California. This experience marked the beginning of nearly 40 years of active involvement with the California aerospace industry.

In September 1959, he joined UCLA as an Assistant Professor in the College of Engineering. He was promoted to Associate Professor in 1963 and to Professor in 1968. He remained at UCLA until 1982, where he also served as Chairman of the Chemical, Nuclear and

Thermal Engineering Department from 1975 to 1978. In two decades at UCLA, he supervised 14 Ph.D. dissertations and 42 M.S. theses. In 1973, he received the ASME Heat Transfer Division Memorial Award for his contributions to the science of heat transfer in surface and gaseous radiation. In 1976, he received the first AIAA Thermophysics award for his contributions to radiant heat transfer analysis and radiation property instrumentation. He was elected Fellow of the ASME in 1981.

In 1982, Professor Edwards moved a few miles south, to the School of Engineering at the University of California, Irvine. He joined the Department of Mechanical Engineering where he served as Chairman for 2 years from 1984 to 1986, and as Associate Dean of Engineering for Graduate Affairs from 1986 to 1989. In 1988 Professor Edwards was elected Fellow of the American Institute of Aeronautics and Astronautics. At Irvine, he supervised six additional Ph.D. dissertations and seven M.S. theses.

In the course of his career, Professor Edwards published over 120 technical papers on his research findings. He also authored several book chapters, and authored or co-authored three outstanding texts. His *Radiation Heat Transfer* notes were published by Hemisphere in 1981, while the text *Transfer Processes, an Introduction to Diffusion, Convection, and Radiation*, co-authored with Professors V. K. Denny and A. F. Mills, was published in 1976. Professor Edwards also wrote a monograph, "Solar collector design", originally published in 1977, and later translated into French in 1979.

Throughout his academic career, Professor Edwards has been in great demand as a consultant by the California aerospace industry, as he has surely been regarded as the thermophysics expert in this industry. His early work on spacecraft radiation heat transfer is, of course, well known, but over the years he has been involved in a great variety of aerospace heat and mass transfer problems. He pioneered gas-controlled heatpipe technology with Dr Bruce Marcus of TRW Systems in the late 1960s, and more recently has been heavily involved in the design of the reusable Delta rocket for McDonnell-Douglas. It is unfortunate that an anthology of his consultant reports is not available to help educate a new generation of aerospace engineers.

Professor Edwards retired from the University of California in 1991, 40 years after first entering it as an undergraduate student. He continues to be an important source of information and inspiration to his colleagues and students at UCI where he occasionally teaches graduate courses in heat transfer. His colleagues, students and friends take pride in commemorating his life-long achievements and contributions on the occasion of his 65th birthday.

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