

Dennis G. Shepherd

October 6, 1912 — January 9, 1994

The loss of Dennis G. Shepherd, the Joseph Edson Sweet Professor of Mechanical Engineering, Emeritus, is mourned by his colleagues and friends at Cornell, and the many Cornell students for whom he was such a devoted teacher. We remember and honor, too, the accomplishments of his career, and his dedicated service to the Sibley School of Mechanical Engineering.

Following his birth in England, Dennis came with his family to the United States in 1930. He attended the University of Michigan, and received degrees in mathematics and physics. During World War II, he returned to England, where he participated as a young engineer in the epochal development of the aircraft gas-turbine engine. He was in charge of combustor and turbine design as a member of the elite team which, under Sir Frank Whittle, developed the gas turbine that preserved our air superiority then, and which defines the world of flight today. He never told “war stories” about those years, which seems a great pity, given his talent for historical exposition. No doubt, his strong sense of modesty deprived us of some interesting and technically instructive stories!

Passage of time has made our victory in WWII seem inevitable, but one should remember those, like Dennis Shepherd, whose strivings were crucial to our success in that desperate struggle. During that time, he suffered the hearing damage of which we all became aware in later years.

In 1948, when he was 36, following a brief time as an engineer at A.V. Roe in Canada, he came to Cornell as an Assistant Professor. From that time until his retirement, and thereafter until his death, he was one of the World’s most notable teachers of engineering. It is important to note that Dennis was first an engineer, and then a teacher – being an engineer, he was able to teach about real machines. One of us has heard an old grad of the fifties tell about launching rockets at the (then) East Hill airstrip, under Professor Shepherd’s anxious supervision!

Dennis Shepherd’s fame as a teacher is, of course, in the memories of Cornell Students, but also, around the world, in the appreciation of his carefully-constructed, beautifully-written textbooks. *Introduction to the Gas Turbine* first appeared just after his arrival at Cornell. It was revised nine years later, and in that same year, his *Introduction to Turbomachinery* came out. A bit later, he completed his textbook *Elements of Fluid Mechanics*. Later still, his *Aerospace Propulsion* appeared. One realizes that these fine books are the legacy of a long career in engineering education; they were of a new type; they incorporated the underlying sciences of fluid mechanics, thermodynamics

and heat transfer into engineering analysis in a scholarly but lucid way. His books on Fluid Mechanics and on Turbomachinery remain in especially wide use, in industry and in academia.

In 1976, the American Society of Mechanical Engineers recognized these contributions to the technical literature by awarding him the Worcester Reed Warner Medal, and in 1984 by electing him Fellow of the ASME. During his career, he was honored by invitations to be Visiting Fellow at Imperial College (London), Technische Hogeschool (Delft), the University of Cardiff (Wales), and Jilin University of Technology (Jilin, China). Dennis Shepherd was modest and self-effacing; he appreciated the honors (too few) that came his way, but would certainly never solicit them. Never did he, in the midst of our self-absorbed academic culture, ever ask anything for himself or make personal complaint. And never did he fail to respond when some service was asked of him.

Dennis also expressed his love of engineering in a love of its history. In his mid-sixties, he became interested in wind turbines, and at his death he was writing a new book on wind power. His interest in this subject was in the understanding of principles and the appraisal of options for today. By way of introduction, he had completed a fascinating and thorough historical treatise covering 900 years of wind-power development. Despite the ecological enthusiasm for wind power, and despite his own enthusiasm for the subject, Dennis' professional integrity did not allow him to play promoter or advocate. No doubt, many students were disappointed by the limitations and difficulties he so carefully set forth concerning the prospects for wind power.

As a teacher of Engineering, Dennis Shepherd has a unique place in the story of Cornell. He was thorough, and quite strict, but students loved him anyway; he was fair and kind, and they knew he was devoted to their progress. In 1968, he received the "Excellence in Teaching" award of the Cornell Society of Engineers. He won that same award for an unprecedented second time in 1975! These teaching awards were not just nice for Professor Shepherd, but they signify a lifelong satisfaction and happiness on the part of numberless Cornell Alumni concerning their educational experience here; that is Dennis Shepherd's ongoing, one may say perpetual, gift to Cornell, one which we will always honor.

Dennis served as Director of the School of Mechanical Engineering for seven years beginning in 1965. During that time, he developed a Master of Engineering program which entailed design projects supervised cooperatively with Industry. After a few years, this initiative faded because his vision was not shared by the School's faculty at that time. But his vision was in fact prophetic, because such cooperative, interdisciplinary projects are now considered the mark of a forward-looking engineering curriculum! Also during his Directorship, he oversaw a major revision

of the undergraduate curriculum, one that streamlined and broadened the foundation courses of the field which, for twenty years, have provided a smooth transition to higher-level studies in modern technology.

In 1979, Dennis Shepherd retired, and during the first eleven years of his //retirement,./ continued to teach a course each term, and for two of those years was in charge of modernizing the Senior Laboratory of Mechanical Engineering, a remarkable assignment for an emeritus professor!

Dennis Shepherd was a deeply devoted husband and father; his wife, Gertrude, his son, Julian, and his daughters, Joanna and Barbara, survive him. With them, his colleagues and students will always hold this good and faithful man in fond memory. Each year hereafter, the Sibley School will especially remember Dennis Shepherd, the great teacher, by making a teaching award in his name, from a special endowment established for that purpose.

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