

Howard N. McManus, Jr.

June 20, 1921 — February 6, 1974

The untimely death of Howard McManus at the midpoint of his career is a sad loss for the Sibley School of Mechanical and Aerospace Engineering, for the College of Engineering, and for the University. In each of these areas, he was active, enthusiastic, and hard-working. He was truly an all-round academic man, with an established record in research, great interest and capability in teaching, and manifest diligence in all his many committee and administrative duties.

He was born in Brooklyn and obtained his bachelor's and master's degrees in Mechanical Engineering at the University of Iowa, in 1951 and 1952 respectively. He earned his doctoral degree at the University of Minnesota in 1956, following which he went for one year to Northwestern University as an assistant professor. He came to Cornell in 1957, initially in the Department of Thermal Engineering of the Sibley School. He received his professorship in 1967.

For his first decade at Cornell, his work lay in the areas of heat transfer, combustion, and fluid mechanics. He was, however, very much aware of all aspects of mechanical engineering, and in spite of his own deep interest in research and the training of graduate students, both in general and in his own particular area of interest, he became concerned with the problem of the integration of all engineering skills into the design function. In 1966 he served as chairman of a faculty committee which sought to appraise long-term needs in instruction, laboratory work, and research in engineering design. The report of this committee was largely instrumental in reintroducing a proper consideration of the design function into the engineering programs of the College.

In 1968 he was appointed head of the Mechanical Design Department of the School and he remained in this office until a complete reorganization in 1972 obviated separate departments. He was no titular head of this activity but started a new teaching career by conducting courses in the design area well removed from the thermal engineering discipline in which he had hitherto been engaged. At about this time he was made principal supervisor of a novel and experimental engineering design program at the doctoral level funded by grants totaling \$450,000 from the National Aeronautics and Space Administration (NASA). His interest and activity in the design area caused him to be in demand as a participant in several design conferences and workshops throughout the country whose object was to rekindle attention to the basic engineering activity.

Howard McManus labored continually over his teaching, both in formal courses and in his direction of graduate studies. His students quickly learnt respect for the disciplined approach, because he was not given to accepting

the easy answer from anyone. While very receptive to different ideas, he often looked askance at anything which seemed too permissive in the academic process. On occasion, when upset by what he regarded as unnecessary stupidity, his Irish heritage could give rise to aroused response which left his auditors in no doubt as to his opinion on the matter in hand. Such transitory choler was quickly replaced by his normal equanimity, as he possessed the essential sense of humor which allowed him to criticize himself as well as others.

Apart from his school and college work on committees, which included being chairman of the Graduate Professional Engineering Program Committee and a member of the Engineering College Policy Committee, he was active in University-wide functions such as serving as chairman of the Physical Sciences Subcommittee of the University Fellowship Board, as a director of the Cornell Research Foundation, and as a member of the Faculty Committee on Review and Procedures. With all this, he found time to act as publications reviewer for the American Society of Mechanical Engineers, the *International Journal of Heat and Mass Transfer*, the *Journal of the American Institute of Aeronautics and Astronautics*, and the *Journal of Applied Mechanics*. He also served as reviewer for many research proposals submitted to the National Science Foundation.

In his nonacademic activities, his main interest was in his family and his home. He had five children, whose upbringing was one of his paramount concerns and whose development was a constant source of satisfaction, mixed, of course, with the occasional anxieties. His main hobby was woodwork and his efforts in turning out handsome pieces of furniture were not only successful in terms of craftsmanship but, as he used to say, as “vocational therapy.” He enjoyed playing golf with his colleagues and friends, although he never quite succeeded in attaining the mastery of the mechanics of golf balls in flight that he did over more mundane engineering phenomena.

The death of Howard McManus removes one of the none-too-numerous practitioners of all-round versatility in engineering today. He established a reputation in one area of mechanical engineering and proceeded to acquire new skills and high regard in another. His premature passing can only be regretted as cutting off the fulfillment of even more impressive achievements. The regard of his colleagues, friends, and students in his work in engineering education is best shown by the spontaneous establishment of a memorial fund in recognition of his interest in all that pertained to engineering education. This fund is being used for the annual award to the mechanical engineering student presenting the most outstanding design solution to a problem or project. It will be a fitting tribute to much that he strove for in his sadly limited time at Cornell.

John P. Barlow, John F. Booker, Dennis G. Shepherd