



G. A. Hawkins

George Andrew Hawkins

1907-1978

By John C. Hancock

George Andrew Hawkins, former Dean of Engineering and former Vice-President for Academic Affairs at Purdue University, died in his sleep at his home in West Lafayette, Indiana, on April 6, 1978. He had retired in 1974, after forty-four years of service to the University. He was seventy years old at the time of his death.

Dr. Hawkins' lifelong career was largely in the field of engineering education as a student, researcher, teacher, and administrator. His early research on high-temperature, high-pressure steam was a noteworthy contribution to the technology of that field. This research prompted his advanced postdoctoral study of theoretical thermodynamics and heat transfer and led to his coauthoring a book in this field. He was cited at that time as the nation's outstanding young man in the field of heat transfer.

As a faculty member of Purdue University, he was an innovative teacher and administrator, having a significant impact on engineering education. He was Dean of Engineering during the years following World War II and was one of the first in the nation to lead his faculty in incorporating into their programs the new knowledge and techniques that evolved from research conducted during the war. He was cochairman of the 1968 "Goals Report" study, which did so much to establish national directions for engineering education at that time. All through his academic career, be he teacher or administrator, he remained actively involved in research and consulting in his area of thermodynamics

and heat transfer. He, with his graduate students, made many contributions to the technology and the understanding of this area.

George Andrew Hawkins was born in Denver, Colorado, on December 11, 1907. He received his grade school education first in Denver and continued it in Long Beach, California. Following grade school, his family returned to Denver, where he attended Byers Junior High School. He then enrolled in and was graduated from East High School, Denver, Colorado, in 1926. He began his university work with two summer terms, and the full year between, at the Colorado School of Mines in Golden, Colorado. At that point, he transferred to Purdue University, where he completed his work and received his Bachelor of Science degree in mechanical engineering in June of 1930. After graduation, he joined the Purdue University staff as an Assistant in Applied Mechanics, while pursuing graduate study that earned him his Master's Degree in mechanical engineering in 1932 and his Doctor of Philosophy degree in 1935. During the summer of 1933, while still working on his doctorate at Purdue, he studied advanced mathematics at the University of Denver.

Joining the Purdue faculty as an Assistant Professor following the Ph.D. award, he taught in the School of Mechanical Engineering. In 1938-39, still intrigued by phenomena not completely understood, he took a year's part-time leave of absence to study theoretical thermodynamics and heat transfer under Dr. Max Jacob, who had just come to this country from Germany. This work led to the book, *Elements of Heat Transfer and Insulation*, jointly authored by Jacob and Hawkins (1942), and which led to Dr. Hawkins being cited as the nation's outstanding young man in the field of heat transfer. In 1940, at the annual meeting of the American Society of Mechanical Engineering, he was awarded the Pi Tau Sigma gold medal.

Dr. Hawkins advanced steadily through the professorial levels and was made a full Professor of Mechanical Engineering at Purdue University in 1942. One year later he was named Westinghouse Research Professor of Heat Transfer. For many years he was also on the staff of the Engineering Experiment Station and was named its Associate Director on July 1, 1950. In his research

capacity, he performed a number of noteworthy investigations. He collaborated with Dean A. A. Potter and Dr. H. L. Solberg in studies of high-pressure and high-temperature steam. During World War II he was chosen to direct the U.S. Army Ordnance Research Project located at Purdue. The work carried out under his direction brought a special citation to Purdue University for developments leading to improved automatic weapons. For his own personal contributions, he received the War Department's Certificate of Appreciation.

At Purdue in 1947, he was made the Assistant Dean of the Graduate School and for fifteen months of that appointment, he served as Acting Dean. From July 1, 1949, to June 20, 1950, he was given leave from Purdue to be a Visiting Professor of Engineering at the University of California at Los Angeles. On July 1, 1953, he assumed the position of Dean of Engineering and Director of the Engineering Experiment Station, succeeding Purdue University's famous Dean of Engineering, Dr. A. A. Potter. For the period 1961-63, in addition to his responsibilities as Dean of Engineering, he was given the administrative responsibilities for the Department of Mathematical Sciences at Purdue University.

During the early years of his term as Dean of Engineering, educational programs were being impacted heavily by the information explosion that followed the release of information generated by research carried on during World War II. Assessing the importance of these developments, Dr. Hawkins was convinced that the next generation of engineers would have to be steeped in the physical and engineering sciences if they were to be able to design the complicated systems being envisioned by American industry. With imagination and courage, he took the steps required to sensitize the faculty to these developments and they, in turn, acted to achieve a major revision of the engineering curriculum at Purdue. Purdue's engineering curriculum was a model for other schools to follow—thus assisting the change to spread all across the nation.

Dr. Hawkins worked with faculty, using faculty seminars, personal contacts, and invited scholars to challenge them to familiarize themselves with the new concepts and the new technology that was

emerging. He stressed the need to be prepared for change. He also believed that contemporary engineers should have a better understanding of the social sciences and the humanities if they were to respond to society's needs and demands. His ideas about a dynamic and changing curriculum were challenged and resisted by some; but with patience and sincerity, he pressed his points. Younger members of the faculty rallied to his cause, and he, in turn, encouraged them to absorb themselves in the work at the scientific frontier of engineering. This they did with a sense of pride and dedication; and curricula changed to reflect an emphasis on applied science rather than the "art" of engineering. Despite his administrative responsibilities, he, himself, devoted as much time as he possibly could to remain at the research forefront of his own specialty-heat and mass transfer.

On the national scene in the early 1960's, Dr. Hawkins was asked to be cochairman of the American Society of Engineering Education's goals study. This study was undertaken at the request of the Engineers Council for Professional Development and was financially underwritten by the National Science Foundation. Once more he made clear his beliefs in a scientifically oriented engineering curriculum, heavily bolstered by advanced graduate study. He was joined in this by many educators who contributed to this study; but again he ran into opposition from some educators across the country. However, as time went by, the view expressed in the Goals Report, was, by and large, accepted nationally.

On July 1, 1967, Dr. Hawkins was appointed Vice-President for Academic Affairs; and, at a meeting of the Board of Trustees in September 1971, he was designated Vice-President Emeritus for Academic Affairs. Following his retirement, he served the University in several postretirement positions, among which was one year as Acting Dean of Engineering, Acting Head of Aeronautical Engineering, Interim Provost, Special Assistant to the Provost, and others. He finally retired in July 1974, retaining the titles of Professor Emeritus of Thermodynamics, Westinghouse Research Professor Emeritus of Heat Transfer, and Vice-President Emeritus for Academic Affairs.

Dr. Hawkins was elected to membership in the National

Academy of Engineering (April 1967). He was a Life Fellow and Honorary Member of the American Society of Mechanical Engineers, a Fellow of the American Institute of Chemical Engineers, and an Honorary Member of the American Society for Engineering Education (ASEE). In 1969-70 he was President-Elect and in June 1970 he became President of this latter organization. In June 1974, Dr. Hawkins was honored by being awarded the Lamme Gold Medal by ASEE. He also held memberships in the National Society of Professional Engineers, Scabbard and Blade, Sigma Xi, Tau Beta Pi, Pi Tau Sigma, Phi Kappa Phi, and Sigma Pi Sigma.

Dr. Hawkins is the author of five college textbooks and the author of approximately 240 articles and abstracts on engineering and related subjects, a number stemming from his own research work. He served as a consultant to a number of industries and to governmental and other organizations.

His hobbies included rifles and pistols, collection of selected categories of stamps, and wood carving (using both machine and hand tools-especially in the making of decorative water fowl and the Hopi Indian Kachina dolls). In this last category he was considered an expert, both as a craftsman with a knife and as a curator of the legends that surround each of the more than 280 varieties of these Kachina figures.

Until his death, George Hawkins was a scholar, artist, artisan, engineer, and friend. He leaves behind a rich heritage in the field of engineering education, both at Purdue University and throughout the nation.