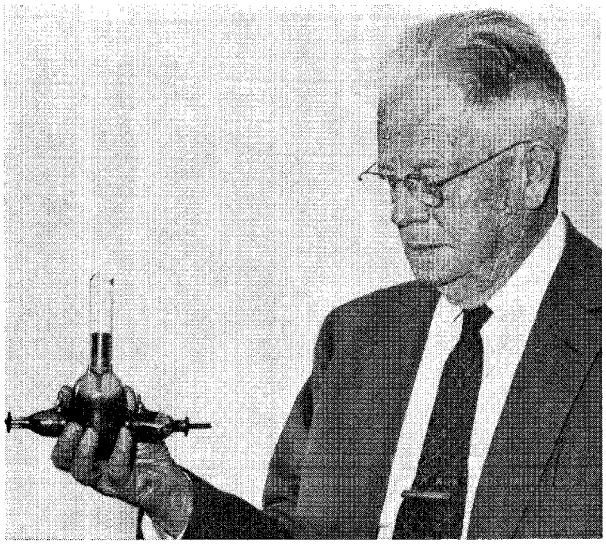
ROYAL W. SORENSEN

(1882-1965)

This tribute to Royal Sorensen was delivered by Frederick C. Lindvall, Caltech professor of electrical and mechanical engineering, and chairman of the division of engineering and applied science, at a memorial service held on October 29 at the First Baptist Church in Pasadena. Dr. Sorensen died at his home in Pasadena, on October 27, after a long illness.



Royal Sorensen with the 1923 model of his vacuum switch, now on display at the Smithsonian Institute.

Royal Wasson Sorensen was a distinguished engineer and educator who also lived as a man with a deep feeling of professional responsibility to his community and his fellow man. Born in a log cabin in Wabaunsee County, Kansas, on April 25, 1882, he spent his childhood and college years in Colorado. His engineering career began with graduation from the University of Colorado in 1905. He then became a transformer design engineer with the General Electric Company in Pittsfield, Massachusetts. In 1910, Royal Sorensen left industry to teach electrical engineering in a new, virtually unknown institution in California — the Throop College of Technology — because he was impressed with the educational objectives of its founders and the opportunities presented for improved engineering education.

Professor Sorensen grew with Throop and also as an engineer, participating in California's pioneer work in high-voltage long-distance transmission of electrical power. Indeed, in these early days he foresaw more clearly than most of his contemporaries the great need for the large-scale electrical power transmission grid which has since come into being.

In 1921, Throop College became the California Institute of Technology, which marked the start of its great growth in the basic sciences and mathematics. Professor Sorensen was quick to recognize the merit of a stronger scientific base for his engineering students and to endorse the then novel idea of an unusually large amount of undergraduate education in the humanities for engineering students. He also foresaw that the best future professional practice would require education beyond the traditional baccalaureate degree and conceived a plan for graduate study in electrical engineering at Caltech which consisted in large measure of advanced work in basic science and mathematics, rather than of advanced topics solely in specialized engineering areas. From the master's and doctoral programs in electrical engineering, begun in the early 20s, have come a large group of alumni whose achievements attest to the merits of Professor Sorensen's concept.

At this same time, a High Voltage Laboratory was erected on the Caltech campus as a cooperative development with the Southern California Edison Company to solve some of the emerging problems in power transmission. Professor Sorensen personally designed the transformers and conceived the chain or cascade connection through which the four transformers operated as the first million-volt power testing facility in the United States.

Keenly aware of the serious problems of control and protection of high-voltage power systems, Professor Sorensen in 1923 began experiments with power current interruption in vacuum and by 1925 had demonstrated the feasibility of the concept. However, commercial application would be forced to wait until 1960 when new vacuum technology and metallurgy had made possible a vacuum switch of acceptable commercial reliability. A measure of the significance of the vacuum switch invention is the fact that the original 1923 model was accepted in 1962 for permanent display in the Smithsonian Institute in Washington.

His professional work was internationally known, and his honors and awards were numerous and distinguished. Among these: His alma mater, University of Colorado, conferred on him the degree of D. Sc. He served his professional society, the Amer-

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ican Institute of Electrical Engineers, as national president in 1940-41 and in later years was designated as Honorary Member, a distinction few engineers achieve. For his professional work and for his contributions to engineering education in Japan, the Japanese Institute of Electrical Engineers designated Professor Sorensen as an Honorary Member. His pleasure in this recognition was in a sense a measure of his broad interest in people everywhere. Another and more personal honor was the establishment by a group of senior engineers in the Los Angeles area, all Fellows of the Institute of Electrical and Electronic Engineers, of an informal organization known as the Royal W. Sorensen Fellows. The group appreciated this additional opportunity of association with Royal, and its name will now sustain his memory in local engineering circles. In furtherance of professional ideals, Professor Sorensen served for several years on the California State Board of Registration of Professional Engineers. In the community he was well known for his long and devoted service to his church, to the Pasadena YMCA, and the Tuberculosis Association.

In all, Professor Sorensen was officially a part of Caltech for 42 years and Caltech was a part of him. He contributed more than his inventions, his educational innovations, and his professional activities. He served the Institute and the students for many years in the additional capacity of Director of Athletics. He was concerned both for the student's education and for his physical well-being. His influence on students thus extended far beyond the bounds of his electrical engineering classroom. His extensive knowledge of students was matched only by his amazing memory for their names and careers. In 1948 the Caltech Alumni Association made him an honorary member — a distinction held by only seven men — and at the time of his retirement from the Institute an alumni group established a fund for a Royal W. Sorensen Fellowship.

In 1952, Royal Sorensen became Professor Emeritus, which for him meant "retired" in name only. Continuous productive professional and community service followed until his health no longer permitted. He came often to his campus office, to faculty meetings, and to student affairs, particularly those of the Caltech YMCA. He was instrumental in establishing the Caltech YMCA in 1916 and served continuously on its Board of Directors for almost 50 years.

As a friend, a colleague, and a wise counselor he will be sorely missed, but we will cherish his memory and be ever grateful for all of his kindly help and wise guidance along the road. These words must surely be inadequate. Yet who can know the measure of a man?

CALTECH ALUMNI ATHENAEUM MEMBERSHIP

The Board of Governors of the Athenaeum has extended the privilege of membership in the Athenaeum to members of the Caltech Alumni Association. Those alumni who are members of the Association in good standing may avail themselves of this privilege of becoming an Athenaeum member. All the facilities of the Athenaeum will be available to these members with the exception of extending overnight guest privileges to others.

Any alumnus interested in this membership should procure an application card from the Alumni Association.

Donald S. Clark, Secretary
Alumni Association