



Robert W. Cairns

Robert W. Cairns

1909–1985

By Alexander H. Flax

Robert W. Cairns, former executive director of the American Chemical Society, died on January 27, 1985, of Alzheimer's disease. Dr. Cairns made substantial contributions to the technology of high explosives and propellants throughout his brilliant career, which included both government service and positions in private industry.

A native of Oberlin, Ohio, Robert Cairns received an A.B. from Oberlin College in 1930 and a Ph.D. from Johns Hopkins University in 1932; he then attended the advanced management program of the Harvard Graduate School of Business Administration. In 1934 Cairns began his thirty-seven-year career at Hercules as a research chemist, working on propellants and explosives.

He was named director of the Hercules Research Center near Wilmington, Delaware, in 1941. His successful career at Hercules continued with his appointment as director of research in 1955 and his election to the board of directors in 1960. He became vice-president of Hercules in 1967 but retired from the company in 1971 to become deputy assistant secretary for science and technology in the U.S. Department of Commerce.

Dr. Cairns also served the U.S. government on several occasions while still at Hercules. During a leave of absence from the company from 1953 to 1954, he was appointed deputy

assistant secretary of defense for research and development. From time to time, Cairns also served as a consultant to various federal departments and agencies. In 1968 the presidents of the National Academy of Sciences and the National Academy of Engineering appointed him chairman of the new Joint Committee on Scientific and Technical Communication. Dr. Cairns became a member of the National Academy of Engineering (NAE) in 1969 and served as a member of the NAE Council from 1970 to 1974.

Early in his career at Hercules, Cairns investigated the fundamentals of detonation in solid explosives. These studies subsequently provided the foundation for many chemical developments in the Hercules laboratories, developments that led to numerous successful achievements in the company's military programs. These achievements, in addition to Cairns's research in the optical and photographic recording of detonations and explosive reactions, created a major breakthrough in providing improved experimental techniques for the study of extremely fast chemical reactions. The combination of knowledge and experience gained from Dr. Cairns's basic, applied research in explosives resulted in the starting point for the early stages of George Kistiakowsky's development of military explosives for the U.S. National Defense Research Committee.

Robert Cairns's early recognition of the potentialities of double base propellants for rocket applications led to the development of high-potential solventless propellants for all U.S. military rockets used in World War II. Cairns directed the role of Hercules as the sole supplier of these propellants by developing the manufacturing processes needed to produce the propellants.

A significant outgrowth of this background and experience was the practical development of a newly discovered and quite revolutionary technique for casting explosive, propellant compositions of any size. The development of this technique was a vital factor in Hercules's current role as the supplier of the final propellant stages of all present U.S. Intercontinental

Ballistic Missiles (ICBMs), the propulsion stages of the Sprint, and the point-defense propellant stages of the anti-ICBM.

In 1972 Dr. Cairns was named executive director of the American Chemical Society (ACS), after having been appointed president of the society in 1968. This second appointment enabled Cairns to continue his successful career with ACS during which he eventually held all three major policy and administrative positions in the society. In addition to being named executive director, he became chairman of the board of directors in 1972.

The international aspects of chemistry were of special interest to Cairns for many years. When he became executive director of ACS in 1972, he had been active for some time in the International Union of Pure and Applied Chemistry (IUPAC), a nonprofit association of forty-five national organizations that makes recommendations for action on chemical matters of international importance and promotes cooperation among chemists of member countries. At the time of his ACS appointment, Dr. Cairns was president of IUPAC's Division of Applied Chemistry. In 1973 he was elected vice-president of IUPAC and then served as the union's president from 1975 to 1977.

In addition to his service with ACS, Dr. Cairns was a member of the American Institute of Chemical Engineers, the American Physical Society, and the Commercial Chemical Development Association. He also served as president of the Industrial Research Institute and from 1961 to 1962 was chairman of the American Section of the Society of Chemical Industry. He was president of the University of Delaware Research Foundation and a member of the honorary societies Phi Beta Kappa and Sigma Xi.

One of Dr. Cairns's most notable honors was his selection as recipient of the Perkin Medal in 1969 from the Society of Chemical Industry. Established in 1906, the Perkin Medal is the highest honor given for outstanding work in applied chemistry in the United States. The citation in part read

"... for his leadership of group effort in the field of polymer chemistry."

In 1974 Cairns received the Industrial Research Institute Medal. This medal is given annually "for outstanding accomplishment in, or management of, industrial research which contributes broadly to the development of industry or the public welfare." Dr. Cairns was recognized primarily for his "perceptive understanding and effective leadership of industrial research and development, ranging from basic research to commercialization."

Robert Cairns was a dedicated and well-liked man. The ACS news report stated that "Cairns was a highly visible figure at ACS—his 6'7" height and head of snowy white hair were hard to miss. His gracious and friendly manner was well-known to all personnel at ACS headquarters."

The Robert Cairns family includes his wife, the former Katherine Kuhn of Columbus, Ohio; three sons, Michael John, Robert Christopher, and Stephen William Waldo; and a daughter, Lindsey Ann.

