



CLARK
BLANCHARD
MILLIKAN

(1903-1966)

Clark B. Millikan, professor of aeronautics and director of Caltech's Graduate Aeronautical Laboratories, died of a heart attack at the Huntington Hospital in Pasadena on January 2. He was 62 years old.

A graduate of Yale University in 1924, he received his PhD in physics and mathematics at Caltech in 1928. He joined the Caltech faculty the same year, became full professor of aeronautics in 1940, and in 1949 was appointed director of the Guggenheim Aeronautical Laboratory. His title was changed in 1961 to director of the Graduate Aeronautical Laboratories. He was a member of the executive committee of the Institute from 1945 to 1947, and had been chairman of the Institute's Jet Propulsion Laboratory committee since 1949.

A pioneer in the development of multi-engine,

high-altitude airplanes, jet propulsion, and guided missiles, Clark Millikan's scientific contributions began with his development of the large wind tunnels at Caltech and the associated Southern California Cooperative Wind Tunnel in Pasadena, which Caltech operated for five major aircraft companies. This was one of the first uses of wind tunnels as a detailed engineering development tool for the development of aircraft, and under Clark Millikan's direction these facilities were carried to a high state of effectiveness. The Caltech wind tunnels helped solve design problems for more than 600 types of aircraft, including virtually all of America's military aircraft, and several military missiles in World War II.

Clark Millikan's further contributions are represented by the large-scale engineering activities

which grew out of the research in the aeronautics department at Caltech in the area of rockets and guided missiles. This work during World War II led to the establishment of the Jet Propulsion Laboratory, the Aerojet-General Corporation, and to many other related activities in the modern guided missile and space industry.

For his work for the Air Force, Army, and Navy in aeronautics and ballistic missiles during World War II, he received the U.S. Presidential Medal for Merit and the British government's King's Medal for Service in the Cause of Freedom.

He was a member of the Air Force Scientific Advisory Board, and also of the Scientific Advisory Committee of the Army Ballistic Research Laboratory. He was an honorary fellow of the American Institute of Aeronautics, of which organization he was president in 1937, and was a fellow of the Royal Aeronautical Society of Great Britain, the American Academy of Arts and Sciences, and the American Physical Society.

He was elected to the National Academy of Sciences in 1964 and was a founding member of its offspring, the National Academy of Engineering.

In accordance with the wishes of the Millikan family, contributions to Caltech in memory of Dr. Millikan are being placed in a special fund to be known as the Clark B. Millikan Scholarship, to assist worthy students in their education.

A memorial service for Clark Millikan was held in Beckman Auditorium on January 6. Some excerpts from the tributes to him on that occasion follow.

THE SCIENTIST

by William Zisch, President, Aerojet-General Corporation

We are this afternoon memorializing a man of achievement, a man beloved among his colleagues, a man devoted to his family, a man dedicated to his country.

Clark Blanchard Millikan did great honor to his father, also world renowned. To what greater achievement can one aspire?

Seldom does the occasion occur where one has such an opportunity. Yes, but there is more—his constancy and loyal support of another of distinction, the late Theodore von Karman.

Clark's modesty could not conceal his name from being synonymous with GALCIT and all it means to each of us. His continuing encouragement and tireless efforts developed many of today's leaders in the field of aeronautics, rocketry, missiles, and space science, in industry and in the Armed Forces, in addition to academic institutions.

It is clear to me his life was guided and inspired by the principle: "What is excellent is enduring."

Our country today benefits from the fact that the first college course in rocket propulsion in the United States was taught by a man guided by the star of excellence.

The breadth and depth of his interests, activities, and talents were not restricted to the laboratory alone. Thus his inspiration and leadership in his many associations were enhanced. He was sought after as a member of corporate boards of directors in industry. He chaired many important committees dealing with the protection of our country. His vitality was limitless. His unselfish giving of himself was an inspiration.

THE FRIEND

by Philip W. Pillsbury, Yale, 1924

From Clark's favorite restaurant, Mory's in New Haven, at Yale, friends sent this message today:

"Members of the Yale class of 1924 gathered here mourn deeply the death of our beloved classmate, Clark Millikan. We honor the unaffected greatness of mind, heart, and soul which brought him the highest professional distinction and the admiration and affection of all who knew him, regardless of age, culture, and nationality. We share with all you members of his family, colleagues, and friends poignant loss and profound pride in unforgettable memory."

Clark Millikan, we salute you. You have enriched the lives of every one of us with whom you have come in contact. You have taught us your principles of life: real wisdom, humor, affection, critical ability, and judgment—a rich legacy to inherit.

THE MAN

by Lee A. DuBridges, President, Caltech

Clark Millikan was a man of many talents and many interests. He was also possessed of unbounded energy which enabled him to enter into a multiplicity of activities with zeal and enthusiasm.

Clark's distinguished father, Robert A. Millikan, the physicist, used to enjoy telling of an incident which took place about the end of World War II. A stranger, on being introduced to Robert Millikan, exclaimed:

"Oh, are you *the* Dr. Millikan?"

Being used to such questions, Robert Millikan smiled modestly. *But the stranger continued:*

"You are the great aeronautical engineer?"

Dr. Millikan's smile became a proud grin.

"Oh, no," said he, "that is my son."

Clark was a famous aeronautical engineer. He devoted a full 40 years of his life to the effective pursuit of his beloved profession. He was honored all over the world for his many achievements. For most

men there would have been time and energy left for no other pursuits at all.

But not so for Clark!

He also found time to be a skilled musician, a sportsman, a scholar, a devoted teacher, a well-informed citizen active in many civic organizations, a leading light in many circles in Washington, a husband and father, a great and valued member of the Caltech faculty, and a fine companion and friend to many, many people.

I first met Clark when I came to Caltech as a research fellow in 1926. He was then a graduate student in physics and mathematics, devoting a good share of his time to Professor Harry Bateman's courses in hydrodynamics and aerodynamics—courses generally regarded as the most demanding in time, energy, and in mathematical skill of any ever given at the Institute. But in them Clark was a bright star.

He enjoyed, too, his studies and his personal friendships with such men as Richard Tolman, Paul Epstein, Eric Temple Bell, and later with a host of Caltech faculty members. Most of all, Clark became attached, after his arrival in 1928, to Theodore von Karman, with whom he worked intimately for over 20 years.

Yet, even in those student days he found time for much besides study: for learning to fly (and taking his friends on some hair-raising stunt flights); for helping Albert Merrill build an airplane; for extended trips into the desert which he loved; for playing tennis—and bridge and poker; for music; and for reading—reading—reading.

Professor Clinton Judy, then professor of English, used to conduct a literary discussion group regularly at his home near the campus. Clark was one of the privileged few to be admitted to this select group. And he was one of the most active participants. Literature, both ancient and ultramodern, philosophy, history, the most abstruse ideas in economics and political science—all he discussed avidly and with deep perception. Such discussions were often continued through the week around the lunch table in the old faculty club. There I often listened with amazement to discussions far beyond my comprehension. I was just a physicist. Clark was that, too—and an erudite scholar in many other fields besides.

Music was one of his most intense lifelong loves. I do not know when Clark's musical activities began. I do know he was a member of the Yale Glee Club, and he never lost his joy in singing. Many an informal party and Sunset Club outing which I have attended in recent years was enlivened by his fine singing—and there was *no* song that he did not know, no matter how many verses it contained. I

know, too, that when he was a graduate student he was already an accomplished pianist, and was still at that time taking piano lessons and playing at every opportunity.

His athletic activities were always close to his heart, too. He was a star track man at Yale. He played tennis and badminton, was a sailing enthusiast, and an inveterate swimmer. When the Caltech Alumni Swimming Pool was opened in 1954, he became its most faithful user, swimming for a half-hour before lunch every day, until he later built his own swimming pool at his home. All of these activities—musical, sports, literary, travel—which he enjoyed as a student, he continued throughout his life.

Clark will always be remembered primarily, of course, as a great scientist-engineer. He was honored by election to the National Academy of Sciences and was a founding member of the National Academy of Engineering. He was adviser to the highest levels of government, a pioneer in aeronautics and in space, a founder and the guiding spirit for many years of the Caltech Jet Propulsion Laboratory and of the Aerojet Corporation.

Yet, to most of us he will be remembered as a friend—congenial, gay, ebullient, untiring. If he had a fault, it was that he would never admit that he was tired or sick or needed a rest. Just last week, as he lay helplessly in his hospital bed, he muttered unhappily, "I guess I am just a lazy bum."

Like all men, he had his tragedies, his disappointments, his frustrations. But he knew that life was worth living—that joy came in work, in service, in friendship, in love. During recent months he must have known that the illness he suffered would never leave him. Had he spared himself, he might have lived a little longer. But that was not in his makeup. He would not even admit to his friends that anything was wrong. Life was to be lived, and it was to be lived intensely, devotedly, and with joy. He could not have tolerated being an invalid.

He will be sorely missed in many circles—in the Sunset Club, at the Lost Angels' Camp in the Bohemian Grove, among his wide circle of friends. He will be missed greatly at Caltech where, for far longer than any other person, he participated in and guided the activities of one of the world's great aeronautical centers. His kindly wisdom will be missed on the campus and in many other quarters. Most of all, he will be missed by his own family, to whom our sympathies go in full measure.

He will be missed—but not forgotten. His memory will live forever in the hearts of his students, his colleagues, in the annals of the institution to which he devoted his life.