Joseph Mayo Pettit

1916–1986

By William Kays, Oswald Villard, Jr., and William Rambo

Joseph Mayo Pettit, professor emeritus of electrical engineering and president of the Georgia Institute of Technology, died on September 15, 1986, in Atlanta after an eleven-month battle with cancer. Pettit was dean of the Stanford School of Engineering from 1958 until 1972, when he went to Georgia Tech as president.

Born in Rochester, Minnesota, on July 15, 1916, Joe was the son of Joseph Asahel and Florence (Anderson) Pettit. His father was a Portland, Oregon, surgeon and his mother a registered nurse. He was named in part for the physician who delivered him, Dr. Joseph Mayo, a friend of the Pettits and a member of the Rochester family that founded the Mayo Clinic.

He received his B.S. in 1938 from the University of California at Berkeley. Transferring to Stanford that year, he was awarded an M.S. in electrical engineering in 1940 and a Ph.D. in 1942. He married Florence Rowell West in 1940; he is survived by her and by a son, Joseph B., of Santa Barbara, California; by two daughters, Mrs. Marjorie Wilbur and Mrs. Marilyn Backlund, both of Palo Alto, California; and by three grandchildren.

From 1942 to 1945 Pettit served with the National Defense Research Committee's Radio Research Laboratory at Harvard University. The staff of this laboratory, which was devoted
to radar countermeasures, eventually numbered approximately a thousand. Pettit became the assistant executive engineer. In 1944 he was a technical observer with the U.S. Air Force (USAF), serving in Indochina. In recognition of this service, he received the Presidential Certificate of Merit. In 1945 he served as associate technical director of a USAF branch laboratory in Malvern, England.

From 1945 to 1947 Pettit was a supervising engineer at the Airborne Instruments Laboratory in New York City. In 1947 he returned to Stanford as an associate professor of electrical engineering; he was named a full professor in 1954. He authored or coauthored three engineering textbooks published by McGraw-Hill and was a major contributor to a two-volume compendium of the results of the Harvard laboratory's wartime research.

In 1958, after a year as associate dean under Fred Terman, Joe succeeded to the post of dean of engineering. This was at the beginning of the "Sputnik" era, and he was quick to see the opportunities for growth, as well as the opportunity to lead a good but provincial engineering school into national prominence. Under Terman's leadership, the Electrical Engineering Department had already made that move, but the rest of the school had a long way to go.

The next thirteen years were, indeed, an extraordinary period. The university, with Fred Terman as provost during the first eight years, became a national force, and the School of Engineering under Pettit led the way. The departmental structure was expanded from five to ten departments. The departments added were Material Science and Engineering, Applied Mechanics, Operations Research, Chemical Engineering, and Engineering Economic Systems. Funds for expansion became available, and Pettit was able to secure major grants from both the National Science Foundation and the Ford Foundation to make this expansion possible. Major new buildings, including the McCullough Building for electrical engineering and the newly formed Center for Materials Research, the Durand Building for the Aeronautics and Astronautics Department and the Space Sciences Program, and
the Skilling Classroom Building, were all built during this period.

At the same time, the school's sponsored research program expanded several-fold, and, although the program in electrical engineering continued to be the largest, all of the departments participated in an unprecedented expansion. During this period, the School of Engineering emerged as one of the major graduate engineering schools in the country, while the undergraduate program continued to offer an educational experience that encompassed the liberal arts—a more wide-ranging program than could be found at most other engineering schools.

How far the school had come under Pettit's leadership became evident in 1965, when the results of the first national survey of graduate engineering programs were published as the Carter Report. Every department had become one of the leaders in the country. By the end of the 1960s, Stanford was the leading producer of Ph.D.s in engineering in the United States. All of this expansion required a much larger faculty. As dean, Joe Pettit played a major role in recruiting the faculty that was really the key to the subsequent success of the school. Whole new areas of research were initiated by appointing people with established reputations, while more rigorous criteria were enforced in the appointment of junior faculty.

Pettit was an early member of the newly formed National Academy of Engineering, and by the end of his tenure, Stanford was exceeded only by the Massachusetts Institute of Technology in the number of National Academy of Engineering members on its faculty.

Educational innovation was of greatest interest to Joe Pettit, and he was undoubtedly the foremost national pioneer in the development of televised instruction as an adjunct to the graduate program. He introduced a radically flexible undergraduate academic program, and his use of student ratings of instructors, although not a new idea, was nevertheless introduced and developed to new levels.

His interest in education led him to be very active in the
American Society for Engineering Education, and his activities culminated in his being elected president of that institution. From that point on, he was universally recognized as one of the two or three national leaders in engineering education.

By 1971, however, he was ready for a change, and the call came from Georgia Tech. The move to this institution brought a succession of challenges that Pettit met with enthusiasm. His basic ideas were firm and clearly enunciated in his inaugural address: recruiting and retaining outstanding faculty, strengthening the graduate program, and upgrading facilities, with quality always the goal.

His colleagues have remarked on his overriding insistence on quality. Their consistent support was enlisted by his ready acknowledgment of the achievements of individuals and groups, by his leadership, and by his steady availability for consultation and advice. The success that attended his planning was also no doubt contagious.

During Pettit's fourteen-year tenure as president of Georgia Tech, both undergraduate and graduate enrollment increased by forty percent. The female student enrollment alone increased fivefold to more than twenty-three hundred by 1986. The link between an effective graduate program and suitable research opportunities had been firmly established in Joe's Stanford experience. With his strong encouragement, research expenditures increased more than eight hundred percent, to more than $100 million in 1985 and 1986.

The additions and improvements in facilities ranged from new student residences and academic buildings to the bookstore and athletic areas. They included a research building on the Tech campus, designed to facilitate interactions with Atlanta's plans for expansion as a major technology center. The improvements also reached into the state as a whole in accordance with a long-standing institutional mission.

Looking toward the 1986 centennial year observance, Pettit initiated a five-year, $100 million centennial campaign in
1983. It was to have been completed in 1988. The goal was in fact met in June 1986, prompting him to remark, "What we have set out to do we have accomplished, like good Georgia Tech engineers—within budget and ahead of schedule." It is perhaps illustrative of the full range of Joe Pettit's interests and administration that, in its centennial year observance, the institute established in his honor an endowed chair, a graduate fellowship program, and an athletic scholarship.

Although he felt secure in his plans and actions in the academic domain, his background was not always as complete as he might have liked for dealing with some other matters coming before a university president. Joe was apt to remark, not always humorously, about such miscellaneous matters as his involvements with the state government or about the problems of finding a football coach acceptable to all constituencies.

The Pettits at times expressed the hope of returning to the Stanford community, possibly upon Joe's retirement in 1987. It is fortunate for a great many that the Georgia Tech years, the crowning period in a remarkable career, have left a visible wealth of accomplishments with values that will be appreciated for years to come.