



J. R. Killian, Jr.

James R. Killian, Jr.

1904–1988

By Paul E. Gray

With the Assistance of Walter L. Milne

When I entered the Massachusetts Institute of Technology (MIT) as a freshman in 1951, James Killian was just two years into his term as president. A decade later it became my privilege to know him well, and to respect and admire him, during much of the four decades he served MIT as president, chairman, honorary chairman, and senior adviser.

One of the great presidents of MIT, Dr. Killian was also a key figure in developing U.S. education and scientific policy during the middle years of the twentieth century. For nearly sixty years, until his death on January 29, 1988, his life was intimately bound up with the physical and intellectual development of MIT. In addition, for more than half those years he was a notably influential participant in national affairs concerned with engineering and science. His extraordinary impact was felt across a broad range of issues directly related to the central interests of the National Academy of Engineering (NAE).

Born in Blacksburg, South Carolina, on July 24, 1904, Killian received his B.S. in business and engineering administration from MIT in 1926 and then served in various capacities with MIT's *Technology Review* until 1939, when Karl Compton, then president of MIT, asked Killian to become his executive assistant. When Compton later became fully engaged in the national management of wartime research, operating responsibility for MIT was in Killian's hands. That task was made especially

challenging by MIT's assumption of large responsibility, beginning in 1940, for wartime projects that included the development of radar at the Radiation Laboratory, a technical undertaking second in size only to the Manhattan Project.

Following the war, Dr. Killian was elected president of MIT, serving from July 1, 1949, until January 1, 1959, when he became chairman of the MIT Corporation. In 1971 he became MIT's honorary chairman, a post he held until 1983. It was while he was MIT chairman that he was elected in 1967 to the National Academy of Engineering in a group of ninety-three new members that nearly doubled the size of the fledgling organization, then only two years old. His field was listed as "administration of education and public policy in engineering," and his first NAE service was on the Committee on Public Engineering Policy, which he returned to as a member from 1971 to 1973.

The end of World War II brought to the nation's universities the complexities of reorganization and of providing an education for returning veterans. More important at MIT, it brought a consciousness that MIT had made a quantum jump in its reach and in its capabilities, and the consequent need to prepare for a changing role for MIT absorbed Dr. Killian in the planning for this new era. However, while Killian was setting about to expand MIT's role as, in his words, "a university polarized around science," the world scene—including the reality of the cold war—was unstable. And the United States, which soon found itself engaged in a new technological race, again turned to MIT, among others, for help.

Under Killian's leadership, MIT established the Lincoln Laboratory that would develop an electronic continental defense system, a semiautomatic interconnected system so vast and sophisticated that it could not have been imagined even a few years earlier. During the same period, the MIT Instrumentation Laboratory was developing inertial guidance systems for intercontinental ballistic missiles—and the space vehicles and nuclear-powered submarines that were yet to come. There were other projects, too, of course, but these two large developments were especially notable among those for which Killian had a major initiating role and ultimate oversight.

During those early postwar years, Killian was also being drawn into national councils. He served on President Truman's Communications Policy Board, 1950–1951; on the President's Advisory Committee on Management, 1950–1952; as chairman of the Army Scientific Advisory Panel, 1951–1956; and as a member of the Science Advisory Committee of Truman's Office of Defense Mobilization in 1951. Later, in the mid-1950s he served President Eisenhower in evaluating national technological capabilities as chairman of the Technical Capabilities Panel of the President's Science Advisory Committee (PSAC) and in assessing national intelligence capabilities as chairman of the President's Board of Consultants on Foreign Intelligence. In the latter role, he served as chairman for two years, remained on the Board for a third, and was called back to such a Board by President Kennedy in 1961, when he again served for two years as its chairman.

During that time, it became apparent then, as again today, that there was a growing shortage of scientific and engineering manpower in the United States; this shortage was viewed with special concern in the context of the 1950s because of the reports that the Soviet Union was educating increasing numbers of technical professionals. Dr. Killian was one of the first to warn of the situation and to lead the public discussion of what could and should be done about it. Again, then, as now, reasons for the shortage could be traced in part to the secondary schools.

Acting on his concern, Killian served from 1954 to 1956 as a member of the Committee for the White House Conference on Education, which stimulated positive changes and responses in the form of curriculum developments in the schools and in growing and effective federal fellowship programs. At MIT, Killian gave support to the Physical Sciences Study Committee (PSSC), which was formed in 1956 to develop a markedly different physics course for secondary schools. When PSSC was organized on a broader and more permanent basis as Educational Services, Inc., he became the Chairman of the Board.

Later, motivated by the same sense of service and concern, he became a leader in advancing the cause of educational television when he accepted the chairmanship of the Carnegie Commis

sion on Educational Television. In this project, Dr. Killian saw an opportunity to broaden the horizons of this new technology and acted upon it. Considered "the father of public broadcasting," he was a leader in support of the congressional act that established the Corporation for Public Broadcasting (PBS). He later served as chairman of PBS and received two George Foster Peabody Awards for his "outstanding contributions to public broadcasting" in the United States.

During the early 1950s, Dr. Killian's participation in studies concerned with the U.S.S.R.'s growing military power earned him great respect for his knowledge and leadership not only from the scientific and academic communities but also from industry and government. This became especially important at the time of national trauma in October 1957 when the Soviets launched the first Sputnik. The American public was sharply aroused, and the effectiveness of government, science, and education was brought into question.

President Eisenhower then turned to Dr. Killian for help. Giving a nationwide address on the situation, the President announced the appointment of Killian as his special assistant for science and technology. With direct access to the President, and a congenial relationship, Killian put into place a strong mechanism for providing U.S. presidents with the best scientific advice the nation had to offer. As the columnist Arthur Krock wrote in Killian's obituary in the *New York Times*, he "repaired a dangerous national deficiency by bringing science and technology into the inner circles of the government."

Of the many other contributions Killian made as presidential science adviser from 1957 to 1959, one of the most significant was the establishment on his recommendation in 1958 of the National Aeronautics and Space Administration (NASA) around the nucleus of the existing National Advisory Committee for Aeronautics. NASA was given the responsibility for peaceful exploration of space.

Perhaps of even more lasting importance, Killian also brought into being official concern for arms control and disarmament. It began when a panel of the President's Science Advisory Committee that he established, and whose work he represented in the

top councils of government, reported that a nuclear test ban, soundly grounded on scientific principles and knowledge, was possible. That report started the concerned governments down the long road to an atmospheric test ban agreement and had a seminal effect in altering the climate within the government and the nation for consideration of arms control issues.

After Killian returned to MIT as chairman in 1959 and throughout his subsequent intensive involvement in institution building, Dr. Killian continued to play an important national role. He was on the panel of the Rockefeller Brothers Fund that published from 1958 to 1961 a series of six special studies under the general title "Prospect for America," and he served in 1960–1961 on President Eisenhower's Commission on National Goals, which issued an additional comprehensive report "Goals for Americans." Later, from 1962 to 1965 he was chairman of a committee formed by the National Research Council to study the utilization of scientific and engineering manpower.

For these and many other accomplishments and services, Killian received numerous awards and honors including, of special interest for this record, the President's Certificate of Merit (1948), the Public Welfare Medal of the National Academy of Sciences (1957), and the Marconi International Fellowship from the NAE (1975). In addition, he was awarded thirty-nine honorary degrees, including a doctor of laws from Harvard University in 1950 and a doctor of engineering from the University of Illinois in 1960. But he placed little store on such trappings, reminding colleagues of a line from George Meredith's novel *Vittoria* expressing a philosophy he shared: "Life is but a little holding lent to do a mighty labor." This memorial note sets down but a small part of the "mighty labor" James Killian performed on behalf of education, science, engineering, and the country.