



Photograph by Fabian Bachrach.

Frank R. Milliken

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1914-1991

By Nathaniel Arbiter

FRANK R. MILLIKEN, who had retired as chief executive officer of the Kennecott Copper Corporation in 1979 and had been elected to the National Academy of Engineering (NAE) in 1975, died at his winter home in Tucson, Arizona, on December 4, 1991, of coronary failure.

Frank was born on January 25, 1914, in Malden, Massachusetts, where he received his early education. Entering Massachusetts Institute of Technology (MIT) in 1931, he received the B.S. degree in mining engineering in 1934.

From that year on, he began his lifelong association with the mining industry, which was to bring him to eventual leadership of one of this country's major copper producers—the Kennecott Corporation. Starting his career during the depression of the 1930s, he worked briefly for the Peru Mining Company in Deming, New Mexico, as a metallurgist, before occupying the post of chief metallurgist for the General Engineering Company in Salt Lake City, Utah, from 1936 to 1941. He then worked briefly as test engineer at the Utah Copper Company's Magna Concentrator during 1941, foreshadowing his eventual long-term association with Kennecott, its parent company. Joining the National Lead Company's Titanium Division in 1941, his first position was as superintendent of its concentrator in Tahawus, New York, making this operation a model of technical efficiency. This resulted in his becoming assistant manager of the titanium division in 1949, a post he occupied until 1952.

In that year he rejoined Kennecott as the vice-president of mining, becoming executive vice-president and director in 1958, president and chief executive officer in 1961, and finally chairman and chief executive officer in 1978 prior to his retirement in 1979. During the hectic times for the copper industry in the 1960s and 1970s, Frank received national attention through his astute and aggressive management policies, as well as for his involvement in public affairs. That period, in addition to intensified promulgation of strikes by organized labor, saw the nationalization of the copper mines held by Kennecott and Anaconda in Chile and the beginnings of enforcement of new environmental protection regulations under the Environmental Protection Agency. These enforcements were to drastically alter copper smelting practice and, through the increased availability of sulfuric acid, provide new sources of copper through the leaching of low-grade ores. Kennecott, under Frank's leadership and through his support of its research department, was to play an important role in these developments.

Another area on which Frank focused was the expansion of Kennecott's activities into other mineral-related fields, some successful, others not. His predecessor at Kennecott's helm, Charles R. Cox, had started this endeavor with the attempted acquisition of the Okonite Company, a copper fabricator; the Quebec Iron and Titanium Company; and several South African gold mining ventures. The first ran afoul of antitrust regulations, and the others had technical and financial problems. Under Milliken, the major diversification from copper was the acquisition of Peabody Coal in 1966, whose sales and assets then totaled one-third of Kennecott's. However, the Federal Trade Commission detected antitrust implications and started legal actions, which it eventually won in 1977. This forced Milliken to sell Peabody for a price near one billion dollars, instead of spinning off the shares, a move described by *Fortune* magazine as brilliant.

The next and the most dramatic of any of Frank's actions was the acquisition of the Carborundum Company in late November 1977. Because of the depression in the copper industry, Kennecott's directors had advised avoiding any expansion of copper capacity, with Carborundum an attractive alternative.

However, this led to a classic proxy battle, as well as a court battle, pitting Kennecott against T. R. Berner, a veteran of such wars, who was chief executive of Curtiss-Wright Corporation. With no holds barred by Berner, including personal attacks against Frank, both the proxy and legal battles were joined in the spring of 1978, with Kennecott the winner in both. Peter Grace, a Kennecott director, said that Frank's campaign resembled his earlier aggressive tactics in the 1930s as an all-American goalie on MIT's hockey team and as a winning substitute varsity wrestler.

His election to the National Academy of Engineering in 1975 was not only a tribute to his leadership in a major industry, but to Frank's manifold activities in the public interest as well. These activities included his service as deputy chairman of the Federal Reserve Bank of New York, chairman of the Federal Reserve Board of New York, director and vice-chairman of the American Mining Congress, a member of the Business Council, and head of the United Fund of Greater New York. In addition, he headed the International Copper Research Association and the United States Copper Association. He received the U.S. Treasury Department's Distinguished Service Award in 1965 for help in selling government bonds. His memberships in professional societies included Tau Beta Pi fraternity; the Mining and Metallurgical Society of America; and the American Institute of Mining, Metallurgical, and Petroleum Engineers (AIME), in which he was designated a distinguished member of its Society of Mining Engineers. Other honors he received were the Robert H. Richards Award of AIME, the Copper Man of the Year Award from the Copper Club, and the Distinguished Service Award from the American Mining Congress.

One of Frank's most enduring and dedicated associations was with MIT, which began in 1954 when he became a member of the visiting committee for geology and geophysics. He was elected a member of the Corporation in 1962; he became a life member in 1977 and life member emeritus in 1986. During these years he served on numerous committees, both administrative and educational. The latter included the visiting committees for the departments of chemistry, earth sciences, nuclear engineering, and metallurgy and material sciences. A former president of the

institute called him "a devoted and generous alumnus, and a trustee of extraordinary dedication ... a valued counselor to its president's and chairmen." In token of this he received MIT's Corporate Leadership Award in 1976. He also received honorary degrees from the Colorado School of Mines and the University of Utah.

Survived by his devoted wife of fifty-six years, Barbara Kingsbury Milliken, and by their two sons, Frank and David, Frank's later years were devoted to his family, and until his health deteriorated, to his favorite sports, golf and fishing. He will be long remembered as a public servant and as an engineer who fought successfully for his company's survival, during a period when many other mining companies succumbed to declining resources, to domestic and foreign economic and political pressures, and to corporate wars.

