



*F. A. L. Hallowsay*

## Frederic A. L. Holloway

1914-1990

By J. F. Mathis

FREDERIC ANCRUM LORD HOLLOWAY, former vice-president of science and technology for Exxon Corporation, died on November 30, 1990, at the age of seventy-six.

Fred was born in 1914, in Lumberton, North Carolina, to Elisha Andrew Holloway and Cammie Anderson (Lord). He graduated from the Georgia Institute of Technology in 1935 with a bachelor of science degree in chemical engineering. In 1939 he completed the doctor of science program in chemical engineering at the Massachusetts Institute of Technology. In 1941 he married May Bolling Cross. They had four children.

He was elected to the National Academy of Engineering (NAE) in 1965 in the Academy's second election, the first after its formation. He believed in being active. In a letter to President Eric A. Walker in 1966 he said, "It has been my feeling for some time that if the NAE is to fulfill its objectives, there must be a serious intent [for a member] to devote some time to service. As a matter of fact, I feel this should be one of the requirements for membership.... As far as my personal position is concerned, I would be happy to devote a reasonable number of days ... each year...

The NAE took him at his word. From 1966 to 1972 he served on the NAE Committee on Public Engineering Policy. Then until 1975 he served on the Committee on Environmental Engineering, which was organized under the NAE and later

became part of the Assembly of Engineering, National Research Council (NRC). In 1971 he was elected to the NAE Council, and from 1971 to 1975 and from 1977 to 1986 he served on its Executive Committee. He was elected treasurer in 1977 and served two successive terms. It is clear that Fred made a major, positive impact on the affairs of the Academy. He also served from 1971 to 1985 on the Governing Board of the NRC.

In addition, Fred was vice-chairman and chairman of the American Section of the Society of Chemical Industry (London) in 1970-1971. He belonged to numerous professional societies and was honored by Georgia Tech and Stevens Institute of Technology.

Fred's entire business career was with Exxon, spanning the period from pre-World War II until after the Arab oil crisis in the 1970s. He was an expert in refining petroleum and saw Exxon's refinery operations grow from a small base in the United States to a worldwide operation. This was a very exciting period in the history of the oil business and Exxon, and Fred played a key role throughout it.

Fred joined the Exxon refinery at Baton Rouge, Louisiana, as a process engineer in 1939, just as World War II was breaking out. The United States could see that before long it would be involved, and petroleum production for military purposes would be strained to the utmost. It was also a period in which revolutionary new refining technologies were being introduced. Fred was in the thick of all this. Three key process patents bear his name. Exxon's new fluidized catalytic cracking process was first started up at Baton Rouge in 1941; it eventually became the industry's standard process to convert heavy liquids to gasoline. Fred worked on that. Aviation gasoline components were at a premium; a cold acid dimerization process was quickly thrown into operation in Baton Rouge. Fred worked on that too. It is fair to say that Fred, along with his colleagues in Exxon and other U.S. refineries, had a direct hand in helping the allies win the war.

By 1953 Fred had become general superintendent of the Baton Rouge refinery, a lofty position for a young man of thirty-nine. Two years later he was posted to New Jersey to the head

quarters of Esso Standard Oil Company, which owned and operated the Baton Rouge and several other East Coast refineries. When Exxon U.S.A. was formed in 1961 from Esso Standard, Humble Oil, and other companies, Fred moved to Houston to become its first vice-president for manufacturing planning. Just a year later he was sent to the parent Exxon Corporation in New York to serve as deputy refining coordinator for Exxon's refining operations all over the world. In all these assignments Fred honed his considerable management and analytical skills, investing in operations that made sense and cutting out those that did not meet his rigorous standards.

Until 1964 Fred had only peripheral involvement with Exxon's refining research activity, the Exxon Research and Engineering Company (ER&E). Eger V. Merphree was ER&E's charismatic and innovative president through the 1950s. After he died Exxon decided to insert someone with operating experience into the job to build a better bridge between the research and business communities; it was almost inevitable that they eventually chose Fred. The veteran ER&E researchers were considerably concerned over Exxon's bringing in a tough, demanding businessman to run the company. However, before Fred's tenure was over in 1968, he had gained their undying respect. ER&E was prospering as never before. For example, major programs in environmental engineering and computer science were created. But the thing that pleased the researchers most was that Fred started the Corporate Research Laboratories (CRL) to conduct basic science in technical fields of intrinsic interest to Exxon and to market the inventions. He in effect was gambling that the inventions would be used and would pay off. Not all, but many did, and CRL still exists today.

Fred spent the last decade of his career in Exxon's headquarters, dividing his time about evenly between heading the corporate planning department and the science and technology department. This was the period in which the Organization of Petroleum Exporting Countries (OPEC) cartel caused the price of oil to quintuple and long lines to form at America's service stations. It was during the "Energy Crisis" that Fred caused Exxon to invest in massive programs on synthetic fuels and other

alternate energy sources. Major research and development efforts were unleashed on coal liquefaction, coal gasification, shale oil production and refining, advanced batteries, solar cells, and so on. While none of these technologies was put to use in his lifetime, it is entirely possible that they or their second-generation variants will return in the years to come.

After his retirement from Exxon, and to no one's surprise, Fred remained active in the NAE and the business community. He was a director of the Gulf States Utilities Company and advisory director of the Construction Specialties Company. He was an enthusiastic golfer and belonged to a number of major country clubs.

More so than most people, Fred had two sides. One was his public side—a tough, demanding, logical, and somewhat aloof side that instilled respect in all and fear in some. The other was a soft, warm, and personal side he rarely exposed to the public because basically he was a shy person. I'll never forget his saying to me in private, "I'd give anything to be able to tell a joke." Well, jokes or not, nearly everyone who knew Fred both respected him and liked him very much. He was a first-rate engineer and businessman, and a fine father and man.

