



*Phillip Eisenberg*

## Phillip Eisenberg

1919–1984

By John V. Wehausen

Phillip Eisenberg died of cardiac arrest on December 16, 1984. For more than thirty years, he had been a leader in the application of hydrodynamics to ships and offshore structures as well as to related industrial hydrodynamic problems. He was one of the founders in 1959 of Hydronautics, Inc., a firm that, from its inception, was noted for its excellent staff and its forward-looking leadership. Phillip Eisenberg served as its president until he sold his interest in the company in April 1983.

Eisenberg was born in Detroit, Michigan, on November 6, 1919. He attended the Detroit public schools and graduated from Wayne State University with a B.S. in civil engineering in 1941. Following a further year of study at the University of Iowa's Institute of Hydraulic Research, he began his professional career as a research engineer at the U.S. Navy's David Taylor Model Basin, in Washington, D.C.

In 1944 Eisenberg received his commission as an ensign in the Navy and served on the Naval Technical Mission in Europe. Following the war, he returned to his job as a civilian at the Taylor Model Basin, becoming head of the Fluid Phenomena Branch. He interrupted his work there for further study at the California Institute of Technology, from which he received a civil engineering degree in 1948.

Upon his return to the Taylor Model Basin from the California

Institute of Technology, Eisenberg continued as head of the Fluid Phenomena Branch until 1953, when he left to become head of the Mechanics Branch of the Office of Naval Research. He held this position until 1959 when he and Marshall Tulin founded Hydronautics, Inc., which was first located in a rather modest setting in Rockville, Maryland, and later moved to its present location in Laurel, Maryland.

This bare-bones description of Eisenberg's career gives virtually no sense of his importance to the field of naval hydrodynamics (a term that he introduced), an importance based on his own contributions and the influence he brought to bear on its development during his years at the Office of Naval Research and at Hydronautics, Inc. During Eisenberg's years at the Taylor Model Basin and his early years at Hydronautics (before he became so involved in its administration), there were few aspects of ship hydrodynamics to which he did not contribute.

One field, however, consistently drew Eisenberg to it and evoked his interest—cavitation and the damage resulting from it. His first publication on this subject appeared in 1947; his last, in 1978. Some of these publications are research papers and some are expository review articles. One of the latter has become a standard reference on the subject of cavitation.

Eisenberg's six years as head of the Mechanics Branch of the Office of Naval Research were fruitful in a different way. The previous years had given him an overview of the research needs of the U.S. Navy in naval hydrodynamics, and he used the influence of his new position to develop a research program that would support these vital needs. Moreover, an important legacy of these six years is the biennial symposium on naval hydrodynamics, the nineteenth of which was held in September 1984. The symposia bring together the active researchers in naval hydrodynamics from all over the world for a week of lectures and discussions. Their published proceedings form an important part of the literature of the field.

One consequence of holding a position as a research administrator can be a growing sense of frustration at seeing others doing all the interesting research work. There may also be an awareness of a dangerous tendency to use the "royal we" in speaking of this work. To avoid these pitfalls, Eisenberg and his colleague Marshall Tulin decided to form their own consulting company in 1959.

As noted earlier, Hydronautics, Inc., began rather modestly. The company's headquarters consisted of several rooms in a former residence that had been converted for business purposes. The company's experimental tank was actually a plastic backyard swimming pool. Nonetheless, the company prospered, and within five years it had become an important national resource for naval hydrodynamics research, acquiring an international reputation for the excellence of its research and engineering development. Those who have worked at Hydronautics credit this excellence to the stimulating atmosphere provided by its leadership.

Phillip Eisenberg has not lacked formal recognition of his talents and accomplishments. For his work at the Taylor Model Basin during World War II, he received the U.S. Navy Meritorious Civilian Award in 1944. He was elected president of the Society of Naval Architects and Marine Engineers in 1973 and president of the Marine Technology Society in 1976. He was a fellow in both of these societies as well as a fellow of the American Society of Mechanical Engineers, the Royal Institution of Naval Architects, and the American Association for the Advancement of Science.

In addition, Eisenberg was a Gibbs Brothers Medalist of the National Academy of Sciences in 1974 and a David W. Taylor Medalist of the Society of Naval Architects and Marine Engineers in 1971; he received the Lockheed Award for Ocean Science and Engineering of the Marine Technology Society in 1980. He was elected to membership in the National Academy of Engineering in 1974.

Eisenberg was also generous with his time, serving on visiting committees for university departments; on policy committees

for the National Science Foundation, the National Research Council, and the National Academy of Engineering; and on numerous technical committees for various organizations. He was the editor of the *Journal of Ship Research* from 1961 to 1970.

These remarks would be incomplete, however, without reference to Phillip Eisenberg's personal character. He was a man of staunch integrity who set high standards of personal conduct for himself and for others. His professional standards were also high but not unrealistic. Phillip's colleagues enjoyed working with him, and he maintained a warm relationship with them. He was always a loyal and helpful friend and also a good companion. He and his wife Edith, a college classmate, were a congenial, mutually supportive couple, and it was always a pleasure to visit with them and their two daughters, Elyse and Jean, at their home.

Eisenberg's death did not come unexpectedly. His health was doubly threatened, and he had known this since early 1984. Nevertheless, he faced the not-too-hopeful future with equanimity and optimism and continued his planned work insofar as his health permitted. Although he had already lived a full and fruitful life, he was still active in public service after his retirement from Hydronautics. Phillip Eisenberg's counsel will be missed by many, but he will be missed even more as a friend.

