



Hezzie Raymond Brannon, Jr.

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By Claude R. Hocott

H. Ray Brannon was a research scientist and engineer for Exxon Production Research Company from 1952 to 1986. He retired as senior research scientist (the major technical classification) in August 1986. It was that career of versatile, imaginative, and pioneering accomplishments that earned him the distinction of election to the National Academy of Engineering.

Ray was born January 23, 1926, in Midland City, Alabama, and attended Auburn University in that state. He received a B.S. in engineering physics in 1950 and an M.S. in physics in 1951. While at the university he was elected to Phi Kappa Phi, Sigma Pi Sigma, Sigma Xi, and Tau Beta Pi honorary societies. Shortly after graduation he began his career with Exxon. From the outset, his work demonstrated versatility and practicability in a broad area, including radiocarbon dating of recent earth sediments and gamma-ray logging of bore holes into these sediments of importance to geologists and engineers in exploration and development of petroleum deposits. He also developed the first gravity meter for the measurement of sediment density in shallow bore holes. This meter was most useful in the detection of foundation support for heavy construction. His numerical analysis methods for oil and gas reservoirs were a significant contribution to the emerging technology of modeling and prediction that forms the heart of modern reservoir management of oil fields.

In 1968 Ray moved into the rapidly growing areas of oceanography and marine technology, the application of which formed the basis for development of the nation's offshore petroleum deposits. His analysis of storm waves and the application of random noise analysis to storm waves led to the development of design technology in common use today. This work formed the basis for improved calculation of wave forces on offshore structures and enabled the design of platforms in ever deeper water for petroleum development and production. He led and supervised the engineering design of one of the earliest deep-sea, surface-piercing drilling and production platforms. His early development of the gravity meter for bore measurement of the density of sediments helped in the identification of suitable foundation support for the heavy platforms needed in this endeavor. Ray was involved in practically every development in offshore structures: platforms, pipelines, and submerged and bottom-founded drilling and production systems. It was these inventions and innovations that formed the basis for the overall petroleum industry and marine technology that is used today around the world. Ray held four patents and was the author or coauthor of ten publications.

Ray was especially active in cooperative efforts of both industry and professional societies through publications, consultation, and advisory groups. He was a member of the Society of Petroleum Engineers, the Society of Exploration Geophysicists, and the American Physical Society. The crowning effort of his career was his participation in panels, workshops, and committees of the National Research Council. His work on the Marine Board in the Commission on Engineering and Technical Systems (formerly the Assembly of Engineering) from 1976 to 1986 included service on the Panel on Civil/Naval Ocean Engineering in 1982 and 1983. In the Assembly of Engineering, Ray served on the Committee on Assessment of Safety and Outer Continental Shelf Activities (1980 and 1981) and on the Panel of Verification Guidelines for Offshore Structures (1978 and 1979) and the Panel on Offshore Structures Certification (1976 and 1977) of the Committee on Offshore Energy Technology.

