DOUBLE PRESENTATION—APRIL 30, 1986

THOMAS G. FAILS—Biographical Sketch

Thomas G. Fails, currently an independent operator located in Denver, Colorado, specializes in South Louisiana exploration. He attended Ohio State University and received a Geological Engineering degree from the Colorado School of Mines in 1954. He earned an MA degree in geology from Columbia University in 1955.

Mr. Fails worked for Shell Oil Co. from 1955-66, obtaining the position of Senior Geologist with the Marine Division in New Orleans. In 1966 he worked as a geologist for South Louisiana Exploration Venture. He joined Trend Exploration Ltd. as District Geologist in New Orleans in 1967 and was promoted in 1970 to Vice President (London) responsible for exploration in Europe, Africa, and the Middle East. He left Trend to become an independent in 1976.

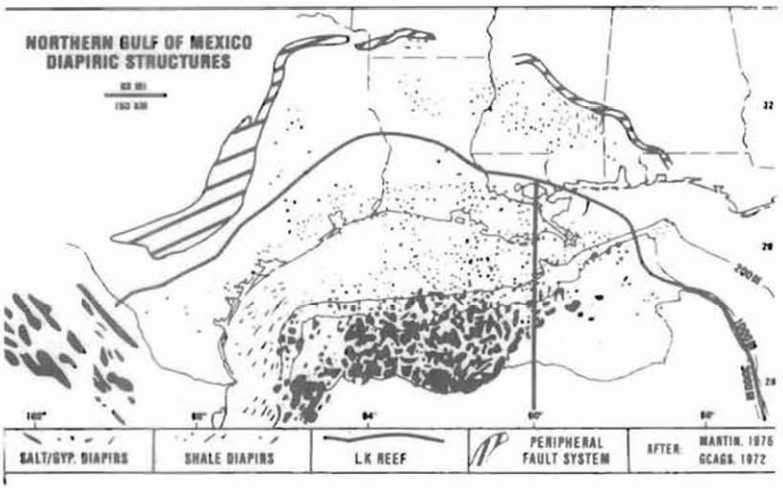
Mr. Fails is a Certified Petroleum Geologist of A.A.P.G. and A.I.P.G. He is a member of the Rocky Mountain Association of Geologists, an ex-Director of the Petroleum Exploration Society of Great Britain, a Fellow of the Geological Society of London, and an ex-Director of the Irish Petroleum Exploration Group. He was named in the "Who's Who in the West" in 1978 and "Who's Who in Technology Today" in 1982.

Mr. Fails has a number of publications to his credit including "Permian Stratigraphy at Carlin Canyon, Nevada," "Pleistocene Stratigraphy of the Louisiana Continental Shelf" (abstract - with J. B. Sachs), "Lake Pelto Field," "Klondike, South Klondike and Bayou Henry Fields," and several Shell Oil Company Serial Memorandums (internal publications) on salt dome geology and Pleistocene stratigraphy.

DIAPIRISM AND GROWTH FAULTING IN THE GULF OF MEXICO SALT BASIN, WITH EMPHASIS ON SOUTH LOUISIANA

Data published during the recent past has improved understanding of initiation of salt and clay diapirism and of growth faulting on the central Gulf continental slope. Growth faults appear on diapir flanks during initial development, as well as along upper slope depocenter flanks and the continental shelf edge. Rapid deposition, differential loading and subsidence on the upper slope and outer shelf enhances segmentation of salt ridge/massifs into individual diapiric spines, causing additional diapir-related growth faulting. Most growth faults originating on the slope remain active and, projected upward 5000 to 20,000 feet, provide the structural framework within which much Gulf Coast petroleum exploration takes place.

Study of 30 piercement and 21 semi-piercement salt domes plus 111 non-piercement domes in south Louisiana formed by salt and/or clay diapirs reveals important growth fault variations genetically related to diapiric structure type. Fault patterns associated with piercement and semi-piercement salt domes are different and more complex than those on non-piercement features, but important variations exist between salt-cored and clay-cored non-piercement structures as well. Counter-regional faults, often in compensating or crossing patterns, are far-more common on piercements and semi-piercements. Fault splitting and crestal grabens are particularly common on semi-piercement structures. Local-extent growth faults related to differing flank subsidence rates around high-relief diapirs play a major role on these structures. In contrast, fault patterns are less complex on non-piercement diapiric structures, although on those definitely associated with salt diapirism, multiple-fault patterns, particularly crossing or compensated, are more common than with clay diapirs and diapirs less-certainly associated with salt intrusions. Counter-regional faults, compensating and crossing systems and splitting are less common; most major faults appear to be regional growth faults sometimes only indirectly related to diapir development. While Houston Embayment diapiric structures were not included in the diapir-fault study, the conclusions drawn concerning south Louisiana almost certainly apply in the diapiric areas of southeast Texas as well. Implications for additional deep exploration around diapiric structures exist, and one example will be presented.



"After Trippet, et al 1982"