EVENING MEETING—NOVEMBER 14, 1977

L. W. MINTURN—Biographical Sketch

L. W. Minturn received a degree in Geological Engineering from the Colorado School of Mines in 1937. His first significant job was running a gravity-meter exploration program in Colombia for The Tropical Oil Company. Following this he returned to the States and worked as an industrial engineer during World War II. In 1946 he transferred from this department of Alcoa to the raw materials section and prospected for various raw materials until 1949, when he became involved in the search for natural gas in the Gulf Coast. During the ensuing years he was closely involved in the discovery of the Appling, Lavaca Bay, South Copano Bay, and Tres Encinos fields of Texas and the South Section 28 and West Addis fields of Louisiana. He became an independent geologist and geophysicist in 1958 and, since that time, has been engaged in geological and geophysical research. He is a member of the Houston Geological Society, AAPG, and Tau Beta Pi.

THE TOPOGRAPHIC EXPRESSION OF OIL AND GAS FIELDS IN THE GULF COAST (Abstract)

by L. W. Minturn

Anticlines, the structural features in which oil and gas accumulate, are revealed in the topography by erosional patterns and by gross uplifts (geologic highs).

The relationship of erosional patterns to anticlines is developed by comparison of the aerial photograph of The Solitario, a large anticline in the Big Bend area of Texas, to the topographic map. A uniform method of annotating the topographic map is possible.

Fields in Texas which show erosional patterns include Trinity, South Stowell, West Ranch, Lovell's Lake, and Bear Creek. Some fields in Louisiana which show erosional patterns are Duck Lake, Laurel Ridge, Bourg, Fordoche Wilcox, and False River.

Gulf Coast fields which show gross uplifts include Jennings, Spindletop, Helen Gohlke, Pierce Junction, and fields of the Rincon area.

Topographic analysis of an undeveloped area in the Gulf Coast is used to define the anticlinal axes and the significant uplifts along them, and to determine how seismic lines should be placed to secure maximum information at minimum cost. It reveals that the whole area consists of anticlines separated by synclines.

Because topographic anomalies commonly coincide with anticlines, they are useful in locating oil and gas accumulations. Such anomalies are not always present because of intersecting anticlines and locally complex structure, loose sand on the surface, timing of the uplifts, amount of erosion, and other factors. Mapping may be inadequate to reveal some anomalies. Nevertheless, topographic analysis is one of the cheapest and most effective starting points for structural exploration.