6. S. RUSSELL CASEY, Woodley Petroleum Company, Houston, Texas, and RALPH B. CANTRELL, Lane-Wells Corporation, Houston, Texas
Davis Sand Lens, Hardin Field, Liberty County, Texas

The Davis sand lens of the Hardin field is a buried off-shore barrier (bar). It is in the upper Saline Bayou member of the Yegua (upper Eocene) formation.

The sand was first recognized as a separate sand in the Woodley Petroleum Company's Emma Davis well No. 1; the sand was encountered at a depth of 7,511 to 7,525 feet. Two wells are now producing gas and distillate from this sand, and one well is producing 36° oil. It is a separate and closed reservoir.

An isopach map of the interval containing the Davis lens shows a marked thickening within the area where the best development of the Davis sand is found. It discloses that the bar along its long axis is approximately 9,400 feet in length, and the width varies from approximately 300 feet to 1,200 feet. The total area covered by the lens is approximately 250 acres. The contours of the isopach map are lines of sedimentation from which the section to be penetrated may be postulated in advance of the drill.

The Davis "zone," wherein the lens is found, is composed of alternating sand, sandy shale and shale, and is arenaceous in character indicating lagoonal or tidal-flat deposition. The main sand is a medium-grained quartz sand, containing few other minerals, as compared to the finer-grained, more mineralized sands of the Yegua formation.

The lens was laid down as a barrier beach or off-shore bar by a retreating Yegua sea.

7. MICHEL T. HALBOUTY, consulting geologist, Houston, Texas
Oil and Gas Stratigraphic Reservoirs in University Oil Field, East Baton Rouge Parish, Louisiana

The University field, East Baton Rouge Parish, Louisiana, is a deep-seated domal type structure with minor faulting.

Production from the field is obtained from Miocene sands. The main and most important oil-producing horizon is the 6,400-foot sand. Other producing sands are the 4,300-foot gas sand, the 6,700-foot oil sand and the 7,100-foot gas sand. Aside from these four producing horizons, there are three sands which are potentially productive, the 4,100-foot and 6,200-foot sands in which oil has been cored, and the 6,900-foot sand carrying gas. To date, no attempt has been made to produce from these latter sands.

This field is of particular interest because of the presence of a greater number of stratigraphic traps (oil and gas reservoirs) than are known in any other field of the Gulf Coast except in piercement-type domes.

Accumulation in the productive 4,300-foot sand, and in the 4,100-foot and 6,200-foot potentially productive sands is controlled by stratigraphic factors which created traps.

Individual contour maps on these three sands delineate their respective lines of pinchout and with the assistance of cross sections of the sands in the field, provide an accurate picture of the stratigraphic traps which they form. An hypothesized explanation based on the assumption that erratic contemporaneous deposition of sediments from different sources in the same area is given.

8. DOROTHY A. JUNG, Republic Production Company, Houston, Texas, and DORIS S. MALKIN, Speed Oil Company, Houston, Texas
Marine Sedimentation and Oil Accumulation on Gulf Coast

The marine sands of the Gulf Coast are prolific petroleum reservoirs. Deposition of these sands has taken place during a series of advances and retreats of the sea. A résumé of the sedimentation and depositional conditions occurring in a marine advance, or transgression, and in a marine retreat, or regression, is presented. The resulting stratigraphic sequences, the "marine overlap" and "marine offlap" are discussed under ideal conditions, and illustrated by electrical log profiles. Particular reference is made to possibilities for petroleum accumulation as influenced by stratigraphic conditions.

Sands deposited in a transgressive sea, such as the "Cockfield," upper Wilcox (Sabinetown), *Marginulina*-upper Frio, and lower Miocene sands, are believed to present conditions favorable for the migration, accumulation, and recovery of oil. Although sands deposited in a regressive sea, such as parts of the Rockdale (Wilcox), lower Yegua, Vicksburg-lower Frio, and Catahoula, are not considered theoretically as favorable, local structural or environmental conditions may effect excellent reservoirs.

The compound features representing a marine invasion followed by a retreat, or the reverse, are also considered and electrical log profiles presented. The economic significance in petroleum geology of the resultant sand wedges and shale wedges is dis-