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## Structural Styles in Central and Eastern Saudi Arabia

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Located on opposite margins of the West Rub' al Khali basin, two structural trends of the Central Arabia and Eastern Arabia share a general north-south structural orientation and similar transpressional structural styles in the Carboniferous Hercynian Orogeny. Multiple seismic profile and map geometry criteria (Harding, 1990) are used to identify the magnitude and direction of strike-slip faulting for the two trends.

Transpressional structures in Central Arabia, interpreted by Simms (1994), have been validated by recent 3D seismic surveys. The long, linear N-S trending master faults, of Infracambrian age, form an integral part of a right-lateral transpressional fault system with many distinctive coeval, en echelon flanking folds. Many oil fields are associated with these structures. Right-lateral slip of a minimum of 0.5 kilometers along individual fault is observed based on offsets of pre-existing faults.

Recent 3D seismic interpretation of the structural trend on the east basin margin indicates a left-lateral transpressional system, with much smaller strike-slip component. Most fault planes are sub-parallel but discontinuous along the strike, as opposed to their through-going and solitary counterparts in Central Arabia to the west. However, some amount of strike-slip movement can be inferred, based on the following evidence: (1) relatively linear fault traces and steeply dipping fault planes offsetting the top of basement; (2) relatively symmetrical shape of a few folds; (3) acute angular relationship of a few coeval, flanking folds to the causative fault trace; and (4) change of fault dip direction with depth.

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