Bulletin de la Société belge de Géologie, T. 102 (1-2), 1993, p. 262.
Bulletin van de Belgische Vereniging voor Geologie. Ed. 1994

SEISMIC STRATIGRAPHY OF THE BILL BAILEY AND LOUSY BANK AREA

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The Bill Bailey and Lousy Banks are located southwest of the Faeroe Island Block. Together with this block, the bank area is thought to be part of a microcontinent flooded by Paleocene plateau basalts, constituting the acoustic basement in the area. The present-day basement topography reveals an organisation in 2 banks and an intermediate basin; there is nearly no sediment on the flattened crests; in between the banks, about 1,2 s of sediments are found.

Seismic stratigraphic interpretation allowed identification of 4 regional unconformities in the basin between and southward of the banks. They were regarded as sequence boundaries.
The lower reflector marks the most prominent boundary: it is an outstanding onlap surface for overlying reflectors, and also corresponds to a striking facies change. The latter characteristic suggests correlation with the well-known reflector R4 of the North Atlantic. The other reflectors were provisionally called BB3 to BB5. The unconformities are proposed to correlate with hiatuses at the Eocene/Oligocene boundary (R4), at the beginning (BB3 = R2) and at the end (BB4) of the middle Miocene, and at the end of the Pliocene (BB5). They probably have their origin in changes of the bottom current regime.

Stratal geometric patterns indicated that initially the subsidence of the basalt surface was more or less uniform. Since all overlying reflectors show onlap against R4, it is suggested that subsidence became non-uniform after erosion of this surface, so that the organisation in banks and basins became more prominent.

Structural interpretation revealed 2 kinds of sediment dynamic deformations: diapirism, and a pattern of intraformational faults.
The intraformational faults were not described before in the area, and look very similar to the stratigraphically bound fractures observed in Ypresian clay deposits of the Southern Bight of the North Sea. Their generation is most probably related to temporary states of abnormal pore pressure in fine-grained sediments.

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