

A TECTONIC HISTORY OF THE BERING SEA AND THE EVOLUTION OF TERTIARY STRIKE-SLIP BASINS OF THE BERING SHELF

Dan **W.Worrall**, ISBN 0-8137-2257-8; Geological Society of America, Boulder, Colorado, 1991; Special Paper 257, 120 p.,

Review by Christopher G. Kendall

This excellent text by Dan Worrall is the outgrowth of a compilation assembled while he was working with the structural geology research group of the Shell Development Company and their lease sale groups in the early 1980's prior to the Navarin Basin OCS lease sale. The book describes the complex interplay of the North Slope block, eastern Siberia with the subducting northern margin of the Pacific Ocean crust from the Late Cretaceous to the present. It explains how the major basins of the Bering Sea developed in response to the development of a network of strike-slip faults when the island arc system of the Bowers-Shrishov-Olyutorsky zone collided with the Beringian margin and the present Aleutian Island chain came into existence. The book begins with a description of the Tectonic history of the Bering Sea. Worrall divides this area as a series of regions each of which he describes separately. These are the North Slope Block, the East Siberian Block, the South Anyui-Brooks Suture, the Beringian margin, and the Olyurtorsky Collision zone and the modern Aleutian arc. Worrall follows this by tracing the structural evolution of the Tertiary Basins of the Outer Bering shelf with a strong emphasis on their seismic character and its interpretation in conjunction with the subsidence history of the basin. The book concludes with a major section which traces the evolution of the Norton Basin as portion of the inner Bering Shelf. The book is loaded with clear and well drawn maps and cross-sections which illustrate the structure, geology, magnetics, and seismic character of the area. The text is well referenced and as such is a helpful text for those looking at the region for the first time.

The quality of the illustrations, particularly the seismic cross-sections and the large enclosed tectonic map for the Bering Sea are excellent. Shell has done a great service to the geological community at large and the oil industry in particular by allowing someone with Worrall's experience to publish this book with all its data. While it is true that most of the information in the book is already in the public domain and for the sake of the clarity of the publication is necessarily abridged, other companies who have played this region or have a vested interest in it will find the text very much to the point and useful to them. I guess it is safe to say that the big secret to this book is that there are no secrets, but even if this is true most of us can learn from this compilation. The text is short but well written and should be useful to those working in the region. The text's length and clarity make it a good buy for the oil company professional, the academic or the geology graduate student interested in the structural evolution of compressional margins. I enjoyed this book and am glad to have it on my shelves.