Exploration Britain
Geological Society Special Publications

*Series Editor J. Brooks*
Exploration Britain
Geological insights for the next decade

EDITED BY

R. F. P. HARDMAN
Amerada Hess
London, UK

1992
Published by
The Geological Society
London
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Preface

This volume contains a representative selection of papers presented at a 1991 Bath Conference dedicated to assisting explorationists to achieve UK reserve replacement targets. The conference was planned by senior explorationists from Amerada Hess (Richard Hardman), Amoco (Peter Pangman), Badley Ashton (Mike Ashton), Department of Energy (John Brooks), Esso (Gerry Mudd) and Fina (Gerry Orbell) with the helpful cooperation of many other companies who responded to specific requests for papers.

According to G. C. Mudd, to date on the UK Continental shelf over 43 billion barrels of oil equivalents have been discovered of which one third have now been produced. It is generally predicted that there remain some 10 billion barrels of oil equivalents awaiting discovery generally in small fields and in subtle traps. The need to replace reserves that will be produced during the 1990s from the much bigger fields that were found during the early exploration period (see, e.g., Bowen 1991 *in* Abbots, I. L. (ed.) *United Kingdom Oil and Gas Fields, 25 Years Commemorative Volume*, Geological Society Memoir 14) is recognized as a tough challenge by most operators. This volume is designed to help.

The papers presented fall into three categories: methods, studies and case histories. Within the ‘Methods’ section the paper by Bray *et al.*, on the application of fission track analysis to exploration, provides a fully detailed account of the benefits of a significant new exploration method. It is shown that fission track analysis can be combined with vitrinite reflection analysis to provide a detailed understanding of basin history, timing of source rock maturity, and thereby give a better method of trap analysis.

The volume is strong on studies. There are several excellent papers. It is invidious to single out the study by Hodgson *et al.* on salt related tectonics in the Central Graben for special mention, but this is a most important paper comprehensively treating the impact of salt on exploration of the Central Graben and bringing several new ideas forward. The paper by Cockings *et al.* on the sequence stratigraphy of the Southern part of the Viking Graben is likely to be the standard reference paper for the Jurassic of this area for many years to come and there are several other papers of an equal standard.

There are many excellent case histories. Of note among papers of consistently high standard is the paper by Harker & Chermak on the Scapa Field. This is typical of the type of exploration that has to succeed if the North Sea is to continue as one of the most active exploration theatres in the world.

In concluding I would like to pay a special tribute to John Brooks. In many ways the Bath Conference was his conference. His enthusiasm for exploration is undiminished. He has continued to defy the sceptics as his vision has triumphed, and the exploration frontiers have been rolled back in the North Sea and elsewhere around Britain. The success of the conference was both directly and indirectly a result of the energy and excitement that exploration continues to generate in him. All of us involved in the business of exploration owe him a great deal.

*R.F.P. Hardman*