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DYNAMIC OIL COMPANY CO-OPERATION

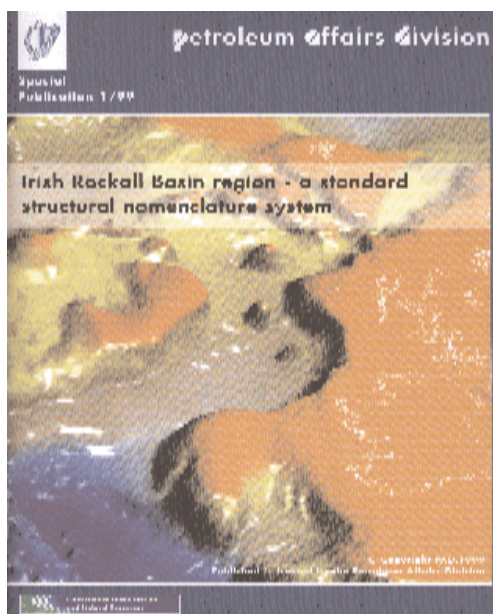
The Rockall Studies Group (RSG) of the Irish Petroleum Infrastructure Programme (PIP) was set up by the Petroleum Affairs Division in June 1997. The group's aim is to promote a wide range of research relevant to hydrocarbon exploration in the Irish Rockall Trough area. At present, the RSG has 15 members: Agip, Anadarko, BG, BP ('BP Amoco', incorporating former members ARCO and Union Texas), British-Borneo, Elf ('TotalFinaElf'), Enterprise Oil, Mobil, Murphy, Phillips, Saga ('Norsk Hydro'), Shell, Statoil, Total and the Petroleum Affairs Division of the Department of the Marine and Natural Resources. Membership includes all current licence-holders in the Rockall Trough.

Since its establishment three years ago, the RSG has proved to be a highly effective and cohesive organisation, capable of executing large as well as small-scale research projects. The combined results of these projects are contributing towards a greater understanding of the Rockall Trough by all those involved in exploring the region.

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NEW MAP PUBLISHED

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On 20th December 1999 the Minister for the Marine and Natural Resources Dr Michael Woods, TD launched a Special Publication of the Petroleum Affairs Division entitled "Irish Rockall Basin region – a standard structural nomenclature system", based on work undertaken by the RSG. The publication, which is the first of its kind for the Irish Offshore, proposes a formal structural nomenclature system for the Irish Rockall Basin and its immediate environs. There are two full colour A0 size enclosures, a structural elements map and representative geoseismic sections. The structural development of the Irish Atlantic Margin is briefly discussed and structural nomenclature systems in neighbouring countries are reviewed.

The approach to the naming of geological structures is examined and a system established for the area. A very useful definition of structural and bathymetric features is included.

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Bathymetric and geological features are described with information on the derivation of each name. For geological features a type section and the main references are given.

The detailed reference list is an excellent starting point for explorationists new to the area. The structural elements map is an essential wallchart for anyone involved in Rockall Basin exploration (to obtain your copy visit <http://www.csa.ie> or contact the Secretariat - address at the bottom of page 4).

This volume is published as a guideline for explorationists and academic researchers alike working in the Irish Rockall Basin region and will be of interest to any inquisitive geoscientist who is stimulated by new discoveries. The structural nomenclature system presented is endorsed by the Petroleum Affairs Division of the Department of the Marine and Natural Resources and is recommended for use by all workers in the region.

DEEPER INSIGHTS ON BASIN FORMATION

On 14th April 1999 the M/V "Akademik Boris Petrov" commenced a Wide Aperture Reflection/Refraction Profiling (WARRP) seismic survey using airgun and OBS (Ocean Bottom Seismometer) technology in the Rockall Trough, up to 400km West of Ireland.

The Irish Marine Institute's "Celtic Voyager" was also involved, providing explosives as a further seismic energy source to achieve deep penetration below the crust.

In spite of bad weather the combined operation went smoothly and was completed on 1st June when the ships left the survey area.

This was a truly international team involving GeoPro of Hamburg and the Russian Academy of Science as contractors, led by University College Dublin and the Dublin Institute for Advanced Studies (DIAS). The purpose of the survey was to acquire data along four profiles to define velocity distribution



M/V Akademik Boris Petrov

of the sedimentary layers, the geometrical structure of crystalline basement and to penetrate the crust.

It was hoped that the results would further the understanding of the nature and thickness of the sedimentary succession as well as the tectonic history of the Basin. Data quality for the lines is excellent with energy propagating to greater distances than originally anticipated.

Modelling of the sedimentary succession on all four lines has been completed. Interpretation and modelling of the basement to Moho sequence is ongoing. ■

DEEPWATER DRILLING RECORD SET

On 27th July 1999 the Norwegian drill ship M/V Bucentaur arrived in Cork following a very successful shallow drilling programme in the Rockall Basin on behalf of the Rockall Studies Group. The three week operation began early in July at the first drilling site NW of Donegal where the water depth exceeded 1000m. Core samples were obtained from five deep water drill sites in all. The drill ship's Norwegian crew was joined by geologists from the Petroleum Affairs Division and the British Geological Survey which was under contract to the Rockall Studies Group

When the rock samples, from as deep as 170m below the seabed, were recovered at surface the on board team was quick to analyse the results and transmit reports instantaneously to a secure internet website. Eager members of the Rockall Studies Group were then able to view the results as they came available, review progress and make operational decisions where necessary. The geological information obtained will considerably assist hydrocarbon exploration and geological research in the Rockall Basin.

In addition to the geological success of the drilling pro-

gramme an operational record was set for the Bucentaur when the night shift of 24th July had in excess of one mile of drill pipe below the rotary table.

The cores are currently being examined at a core laboratory in Dublin by Irish researchers on behalf of the Rockall Studies Group.

M/V Bucentaur



NEW PIP GROUP

The Porcupine Studies Group, Group 3 of the Petroleum Infrastructure Programme, devoted to providing a forum for co-operation and funding for regional data gathering and research in the Porcupine Basin area was inaugurated by the Minister for the Marine and Natural Resources Dr Michael Woods, TD. The Porcupine Studies Group was set up by the Petroleum Affairs Division in conjunction with licence awards under

the South Porcupine frontier round in March, 1999 and present membership comprises Agip, Chevron, Elf ('TotalFinaElf'), Enterprise Oil, Marathon, Phillips, Statoil and the Petroleum Affairs Division.

The Porcupine Studies Group will interact with the Rockall Studies Group on various projects including a shared website and database inventory.

The new group is participating directly in the RSG's cetacean

and seabird project which has now been extended to include the Porcupine Basin. ■



WHALE WATCHING IRISH STYLE

As part of RSG's environmental research in the Rockall Trough, the Cetaceans and Seabirds at Sea Team (CSS) at the Coastal Resources Centre, University College Cork (UCC) is undertaking a major three-year study of whales, dolphins and seabirds. Dr Niamh Connolly provides management for the project and Scientific support is provided by the Department of Zoology and Animal Ecology, UCC. All members of the team have sea-going experience, and between them have surveyed cetaceans and seabirds from the Arctic and Scandinavia, through north-west European waters, as well as in the Antarctic.

The principal aims of the project are to identify the distributions of the various types of whales, dolphins and seabirds, and to provide independent scientific information essential for conservation and management purposes.

Surveys are conducted, primarily, on 'vessels of opportunity', i.e. vessels operating in the Rockall Trough region for any purpose, which are willing to



provide a spare berth for a surveyor.

Coverage achieved from such vessels is now being supplemented by a survey from a dedicated charter ship, the "Emerald Dawn", which departed Dingle in County Kerry on 30th July 2000. This charter will carry a full cetacean and seabird survey team on board, and will focus on areas of least coverage and greatest importance. Irish waters have received some survey coverage in previous years, primarily from the Seabirds at Sea Team of the Joint Nature Conservation Committee in the UK. As far as is possible data from existing surveys will be referred to when analysing the RSG's results.

Although the deep waters of the

Rockall Trough are the target survey areas, data collected in neighbouring regions will provide a comparative context in which to place the results. The continental shelf waters to the west of Ireland, the deep waters west of Scotland, and the shallow Irish Sea all provide interesting and useful comparisons.

Surveys have taken place on a range of vessel types, from drilling and seismic ships to fishery research trawlers and Irish Naval vessels. Co-operation with the Irish Naval Service has provided a very important source of survey platforms, especially over the winter months when there is a shortage of other vessels operating in the region.

Preliminary results suggest that the deep waters of the Rockall Trough provide an important habitat for cetaceans, while seabird densities are generally low. Bird densities increase over the continental shelf, in waters less than 200m deep. Results to date also indicate that cetaceans appear to show habitat preference. The larger whales have been recorded in the deeper waters, along with smaller species such as pilot whales, and pelagic dolphins (including 'common', 'white-sided' and occasional 'striped' varieties). Harbour porpoises, white-beaked dolphins and minke whales have to date been recorded in shallow shelf waters only. The project is scheduled to run until July 2001, and our understanding of both cetaceans and seabirds in Irish waters will be significantly improved by this time.



EXCITING INTERACTIVE ENCOUNTER

On 29th March 2000 geologists, geophysicists, geochemists, oceanographers and environmentalists met in Dublin to present the results of RSG-funded research, swap ideas, share concepts, argue technical cases and learn. It was a busy session with each researcher strictly limited to a fifteen minute presentation with some time for discussion. The forum was chaired by Mr Noel Murphy of the Petroleum Affairs Division.

A secure web-enabled RSG data inventory, which will be operational in August 2000, was described. Information on all the projects will be posted on the site by researchers and the website will allow the lively debate and interaction to continue.

The interpretation results of the 1998 TRIM (TOBI Rockall and Irish Margin) deep-towed sidescan sonar survey were presented by DIAS. The type and extent of recent slope failure and the distribution and morphology of canyon systems and debris flows were revealed. The survey has also increased our knowledge of the extent of cold water corals and carbonate

mounds off the west coast of Ireland.

Other environmental projects presented data on the distribution of seabirds, whales and dolphins in the Rockall Trough area and early results of a baseline study to establish levels of metal contamination in seabed sediment.



Researchers examine deepwater core from Rockall

The metocean session was treated to a presentation on current measurements in the deep offshore which reveal severe wave conditions and large scale eddies lasting several days in the harsh environment along Ireland's Atlantic Frontier. This work forms part of the large-

scale Shamrock (Shared Assessment of Metocean conditions in the Rockall trough) joint industry project being undertaken at present by Fugro GEOS and AMERGEN and which was stimulated by the RSG's metocean strategy (refer RSG website).

Mathematics dominated the subsurface session when geophysicists discussed algorithms, wave simulation, coherence and velocity modelling in a number of innovative basin modelling projects involving Irish Universities. This work will improve our understanding of the Rockall Basin evolution and provide new geophysical techniques to apply in future exploration work worldwide.

The geological core and geophysical data collected for the RSG by RRV Challenger in 1998 and RV Bucentaur in 1999 are under scrutiny by nine different projects including sedimentological analysis, multi-sensor core logging, high resolution biostratigraphy, fluid inclusion studies, assessment of thermal maturity, shallow stratigraphy and geohazard studies and geotechnical and geochemical analysis. ■

PLANS FOR 2000-2001

As reports from ongoing projects poured in the technical committees reviewed the results. New projects that address specific data gaps identified by earlier work were approved by management committee in June 2000. Some of the projects involve further analysis of the new data acquired by the RSG, others are new data acquisition projects.

Shallow stratigraphy, geohazards and slope failure investigation are just some of the topics for new projects. Further benefits should accrue from an important information exchange agreement recently signed with the EU-funded

STRATAGEM (The Stratigraphic Development of the Glaciated European Margin) project.

This aims to define the architecture and spatial variability of mid to late Cenozoic period strata within a single stratigraphic framework. Meanwhile, through co-operation with EU research cruises, focussed data acquisition to address specific geological and environmental issues will continue throughout the summer/autumn of 2000.

Following the success of the technical forum in March 2000, it is hoped to convene a further forum for information exchange during the first quarter of 2001. ■

Further information on the Rockall Studies Group is available on the Group's website: <http://www.rsg.ie> and from the RSG Secretariat at 7 Dundrum Business Park, Windy Arbour, Dublin 14.