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LAUNCH OF THE PETROLEUM INFRASTRUCTURE PROGRAMME (PIP)

Major Petroleum Exploration Initiative

The Petroleum Affairs Division (PAD) of the Department of the Marine and Natural Resources initiated the Rockall studies Group (RSG) under the Petroleum Infrastructure Programme (PIP) in June 1997. This innovative research programme with a budget of IR£4.8 million over four years makes the Irish sector of the Rockall Trough unique. It is the only exploration province in NW Europe where all active companies are involved in a single joint industry programme covering geological, geophysical, geotechnical, environmental and metocean data gathering and research.

FIRST AGM OF PIP AT THE PAD OFFICES ON 17TH JULY 1997



Back row (l-r): Herve Quinquis (Shell), Peter Haynes (BG), Jeremy Gardener-Browne (Murphy), Rocco Valentinetti (AGIP), Andrew Wilson (Enterprise Oil), Lindsay Duncan (Union Texas), Pierre Eliet (Total), Chris Bird (BP Amoco), Stephen Hertig (ARCO), Martin Farrell (PAD)

Front row (l-r): Geirr Haarr (Statoil), Graham Rollinson (Saga), Pat Ryan (PAD), Noel Murphy (PAD), John McGoldrick (Enterprise), James Hersch (Anadarko)

Not pictured: John Lander (British-Borneo), Phillip Newman (Elf), Ray Charles (Mobil), John Chamberlain (Phillips).

The first AGM of the RSG management committee was at the office of the PAD at Beggars Bush in Dublin on 17th July 1997. Sixteen Oil Companies with exploration licences for the Rockall Trough and the PAD are represented on the committee. The research is focussing on four areas of investigation each administered by a technical committee:

- **Sub Surface:** This area covers deep crustal investigations and includes wide angle/OBS seismic acquisition, and gravity / magnetic studies.
- **Seabed:** This area focuses on all aspects of the sea and near surface sediments; research activity includes stratigraphic investigation using shallow drilling and slope stability analysis utilising high resolution shal-

low seismic, sidescan sonar profiling and seabed coring.

- **Metocean:** A strategy for metocean studies has been prepared to stimulate regional metocean projects.
- **Environmental:** this area of investigation includes seabird and cetacean monitoring, biological and geochemical sampling and benthic studies.

Dr Michael Woods TD, Minister for the Marine and Natural Resources officially launched the Programme on 27th February 1998 at a reception in Jury's Hotel in Dublin. Members of the management and technical committees of the PIP Rockall Studies Group as well as representatives from several research organisations, universities and government agencies attended the buffet luncheon.

Project Proposals

Sixty-four project proposals covering the four areas of investigation were received to date. The technical and management committees reviewed these and twenty-five of the projects were approved. Three data review projects have been completed. Contracts have been signed for twenty of the projects. Eleven of those contracts are with organisations based in Ireland. The experience obtained and contacts made by Irish personnel will provide a strong basis for winning further business for Ireland in the future.

The Dublin based CSA Group, which has considerable experience in working with petroleum and mineral exploration companies both in Ireland and overseas, provides secretariat services to the Rockall Studies Group.

SITE SURVEY FOR SHALLOW DRILLING PROGRAMME COMPLETED

It is intended to drill four boreholes on the margins of the Irish Rockall Trough to improve understanding of the regional geology. Prior to any drilling seven site surveys were undertaken by the RRS Challenger to assess the suitability of the sites and to select the most appropriate sites for drilling.



RRS Challenger

On June 18th 1998 the RRS Challenger set sail from Galway with a crew of nineteen including Oonagh O'Loughlin from the PAD. During the cruise shallow seismic (sparker and airgun) and gravity cores were acquired at the proposed drilling sites. The recovery of gravity cores was generally good.

Operations were completed in the early hours of June 28th 1998. All of the proposed sites were visited and a total of 286km of shallow seismic acquired. Forty-five gravity cores yielded good recovery in water depths ranging from 700m to 2800m. This was the first of the data acquisition projects undertaken by the

Rockall Studies Group. In spite of the difficult weather conditions at the outset the operation was successfully carried out on time and within budget. The gravity cores have arrived in the Secretariat's core store at Dundrum and geochemical, geotechnical and sedimentological studies on the core will begin shortly.

FASCINATING SEABED IMAGES

On 24th July 1998 the RV Pelagia completed an exciting twenty eight-day cruise which acquired high resolution side scan sonar imagery and sub bottom profiler (3.5 kHz) along the eastern and western margins of the Rockall Trough. Southampton Oceanography Centre provided the TOBI (Towed Ocean Bottom Instrument), a deep towed multi-sensor sonar system which acquires sonar

imagery at 30kHz with a nominal swath width of 6 km and a resolution of 5 metres.

The quality of the imagery and the wealth of detail surpassed expectations. Numerous canyons, slump features, carbonate mounds, areas of rock outcrop, sand waves and other sedimentological features were seen. In spite of the sometimes poor weather conditions the RV

Pelagia proved to be a very stable platform for the launching, towing and recovery of the side scan sonar equipment.

As a result more data than originally planned was acquired within the time frame for the cruise. The Dublin Institute of Advanced Studies and University College Dublin are processing the data. A full

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LAUNCHING TOBI



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interpretation will be carried out once processing is complete. The cruise report together with preliminary interpretation issued early in the New Year.

The final report will provide valuable information relating to slope stability, sedimentological processes and biological activity in this largely unknown and under explored region west of Ireland.

Data Review Projects Completed

To avoid duplication of effort the Environmental and Seabed technical committees requested a review of existing data and research on the Rockall Trough. University College Dublin and the Coastal Resources Centre at NUI Cork participated in this



RV PELAGIA

mammoth task. Over the past forty years the vast majority of cruises were carried out by government research vessels as part of national maritime research programmes. The Deep Sea Drilling Programme (DSDP) also operated in the area. Dur-

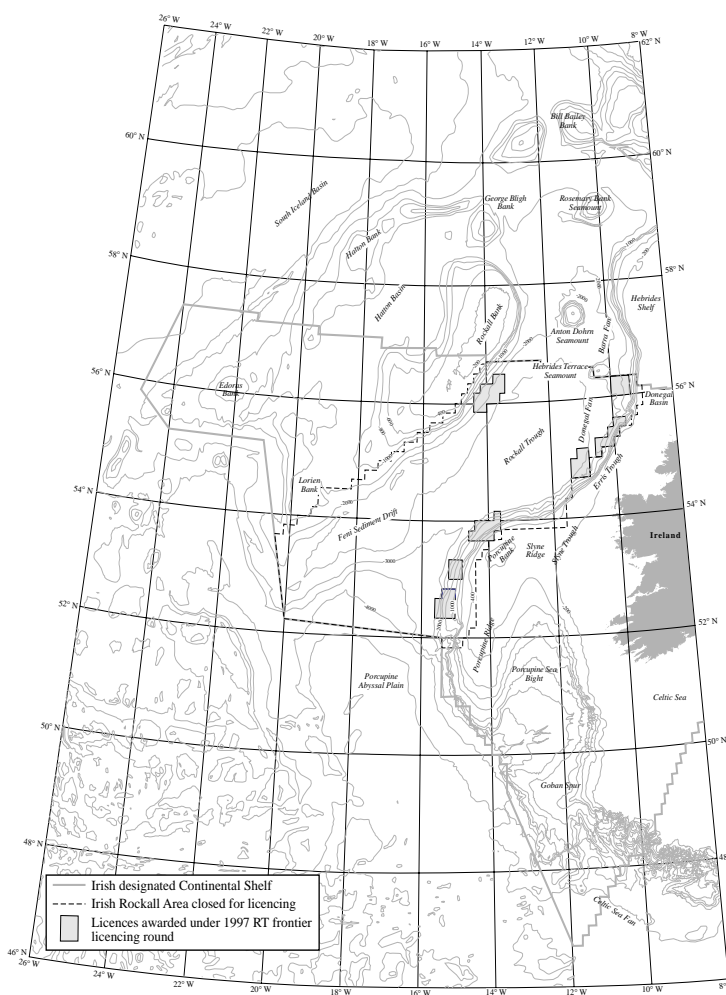
ing the last ten years various EU programmes have funded cruises in the Rockall area. Naval vessels on behalf of national defence agencies have carried out additional work, mostly hydrographical.

METOCEAN STRATEGY DEFINED

The Rockall area experiences some of the most harsh metocean conditions in the world. The severity of winds and waves and their impact on off-shore operations in the area are widely known. Interacting oceanic processes combined with complex bathymetry means that the current regime is potentially of greater concern.

The Irish Marine Data Centre of the Marine Institute in conjunction with Shell Expro Metocean Services have formulated a strategy aimed at directing future metocean studies in the Rockall area. An extensive data search showed that whereas there is generally sufficient wind and wave data to develop a regional picture there is a lack of long-term simultaneous current measurements.

The Metocean Strategy Report defines the scope and estimates the cost of gathering such data at a number of locations in the Rockall area. This valuable report has targeted key strategic requirements for contributing to the safety and cost effectiveness of future exploration activities in the Rockall area.



Rockall Area

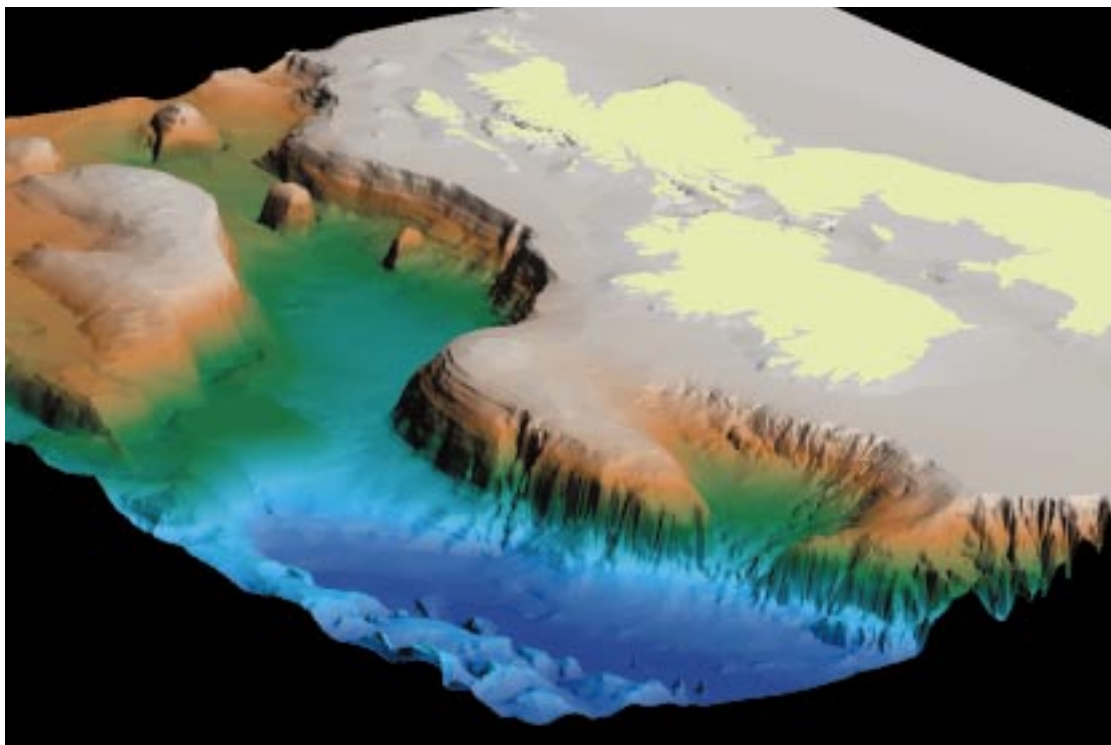
Projection: UTM Zone 28 (Central Meridian 15°W) System: ED50.
Bathymetry Source: GEBCO 97, water depths in metres.

NAME THAT BASIN

Imagine the excitement of medieval explorers confronted with a new continent. Every new headland and bay requires a new name. This is all very flattering to begin with but can get out of hand. Such is the problem faced by the modern explorers of the complex geological structures that lie deep

in the Rockall Trough west of Ireland. The Rockall Structural Nomenclature Project addresses the problem. ERA-Maptec Ltd and University College Dublin are assisting the Group with this task. The project will establish an agreed formal structural nomenclature for the Rockall Trough and the adjacent areas.

Major structures have been recognised in the region and it is desirable to define and name these at the outset to avoid misunderstanding and a proliferation of names. A nomenclature report including a structural elements map and illustrative geoseismic sections is being finalised.



NEW CONTRACTS SIGNED

The strong local involvement in the Rockall Studies Group projects was further boosted in late 1998 when a series of contracts was signed with NUI Galway and University College Dublin for seismic processing, sedimentology and crystalline basement studies. The contract awards indicate the intense interest that the oil companies have in ongoing research in Irish universities. A full list of contracts awarded, together with project titles and key individuals, is available on the RSG website.

PLANS FOR 1999

The shallow drilling programme is scheduled for spring 1999. The results of the site surveys conducted in 1998 will dictate where the four shallow boreholes will be drilled. A drill ship operating in water depths of up to 1,500 metres will take cores down to 300m beneath the seabed. The cores will be used to identify the age and lithology of the sections drilled, to calibrate seismic reflectors and improve understanding of the regional geology. The cores will be stored in

Ireland where they can be easily accessed by the Irish researchers involved in the Rockall Studies Group.

Preparations are already underway for RAPIDS 3, a project that will acquire deep wide-angle seismic profiles across the Rockall Trough. The project team composed of University College Dublin, Dublin Institute for Advanced Studies and Hamburg University provide a unique combination of technology, practical skills and outstanding scientific ability.

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.