The Ocean Drilling Program

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INTRODUCTION

The Ocean Drilling Program (ODP), an international program of scientific ocean drilling, is the successor program to the Deep Sea Drilling Project (DSDP). ODP commenced its field operations with a shakedown and sea trials cruise in January 1985 in the Gulf of Mexico. Approximately every two months since that time, an internationally staffed expedition of our drilling research vessel the SEDCO/BP 471 (Fig. 1) or better known to the scientific community as the JOIDES RESOLUTION has taken place in very remote but geologically important areas of the world's oceans (Rabinowitz et al, 1984-1987).

The JOIDES RESOLUTION has drilled at over 100 sites (as of November, 1987) in the North Atlantic, including the Norwegian Sea, Labrador Sea and Baffin Bay and Mediterranean Sea; in the eastern Pacific off the Galapagos and coast of Peru; in the Weddell Sea and Subantarctic South Atlantic; and in regions of the Indian Ocean (Fig. 2).

FACILITIES

The JOIDES RESOLUTION has a seven-story laboratory structure located forward of the derrick on the starboard side. Within this unique structure are separate laboratory spaces containing state of the art equipment for shipboard analyses of cores (Kidd et al, 1985). Instrumentation is available for study of the physical properties of sediments and rock, paleomagnetics, paleontology, and petrology. There are well-equipped laboratories for inorganic and organic chemical analyses and for analyses by X-ray diffraction and X-ray fluorescence. The scientific tasks are also supported by a photographic laboratory, an electronics repair shop, the capability for gathering analog and digital underway geophysical data, a global positioning navigation system, a central computer processing unit with 50 microcomputers distributed throughout the laboratory spaces and an excellent reference library. The ship has living quarters for up to 50 scientists and technical support staff and a crew of 65. It can drill in water depths exceeding 8 km.
Fig. 1. JOIDES RESOLUTION, drillship for the Ocean Drilling Program. Note Laboratory Module on Starboard side forward of the derrick.

MAJOR THRUSTS - ODP

The major thrusts thus far within the Ocean Drilling Program can be summarized as follows.

Operational
- Testing operational limits of JOIDES RESOLUTION
- High latitude operation

Technical
- Retrieval of sedimentary rocks
- Retrieval of basement (basaltic) rocks

Scientific
- Paleoenvironments
- Continental Margins
- Ocean Crust