# Leg 100

**January 28, 1985 MIAMI, FL** -- *JOIDES Resolution*, a scientific drillship arrived in port today after 18 days of sea trials which took the ship from Pascagoula, Miss., into the Gulf of Mexico, through the Straits of Florida and into the port of Miami.

"It was a totally successful shakedown for a unique ship," announced Dr. Philip Rabinowitz, director of the Ocean Drilling Program (ODP). "I feel sure that we are turning over a scientifically and mechanically sound vessel that should meet the needs of the scientific community for ten years or more."

The ship, whose registered name is SEDCO/BP 471, is the drilling vessel for ODP, a $30 million-dollar-a-year scientific program which promises to be the premier international project in the earth sciences for at least the next decade. The program's purpose is to discover more about the mystery of the Earth hidden beneath the ocean floor.

The National Science Foundation, with contributions from several non-U.S. countries, provides program funding.

Texas A&M University is the science operator for the program. As science operator, the university will coordinate a series of cruises, each lasting approximately two months, which will carry a different international team of scientists each leg.

The shakedown was to ensure that all systems--drilling, scientific and support--were functioning properly. The cruise also gave the drilling and scientific technical crew an opportunity to learn shipboard operations.

Arch McLerran, manager of operations and drilling development, said he was pleased with the drilling operations and ship performance. The 470 foot ship boasts the world's largest heave compensator, a device which keeps the drill string stable relative to the ocean floor. "Unlike drilling in oilfield or off shore, our goal is to collect the most complete and undisturbed cores possible, McLerran explained. "Because of this goal, our equipment needs are different from those of a commercial drilling vessel."

A dynamic positioning system, supported by 12 powerful

thrusters with 750 hp each, allows the ship to maintain a relatively stable position, sometimes in hostile sea conditions, over a long period of time in relation to the hole being drilled in the sea bottom.

The ship's re-entry system also was tested successfully. This system allows re-entry into a drill hole in water depths up to eight kilometers in order to change drill bits or perform specialized scientific experiments.

ODP staff scientists tested the laboratory equipment under shipboard conditions. The group, headed by Dr. Rob Kidd, manager of science operations, also sampled cores obtained from a site west of the Florida shelf.

"Our scientific goal during this cruise was to determine depositional and erosive activity occurring form the Pliocene epoch--more than 3 million years ago--to the present," Kidd said. "We can then correlate this data to worldwide sea level changes."

Kidd said he was especially pleased with the ship's hydraulic piston coring system which gives relatively complete and undisturbed sediment sections. Double piston coring, in which another hole is drilled to overlap the uppermost parts of the original drill hole, was also successful. "This method ensures that we have obtained a complete biostratigraphic sequence," Kidd explained.

The scientific equipment on board the ship is located in a seven-story, 12,000-square-foot laboratory stack. "All of our equipment is state-of the-art and the whole component of scientific instruments is unparalleled," said Dr. Lou Garrison, deputy director of the program.

"I am convinced that in several fields we have the most advanced scientific capabilities in the world," he said.

Sophisticated equipment in 12 labs allows scientists to analyze cores by measuring various physical and chemical properties. Much of the equipment was developed specifically for the vessel.

While the ship is under way between drillsites, digital single-

channel seismic reflection profiles are collected and the data processed on board.

All on-board experiments are supported by a pair of VAX computers which serve as a central processor and data library for 50 microcomputers distributed throughout the laboratories. The system also provides graphics and word processing functions for shipboard scientists.

During the shakedown, all on-board scientific, drilling and operational equipment was tested under varying sea conditions. "We had the opportunity to perform tests in 18-foot seas with winds up to 40 knots," said Bill Merrell, principal investigator for the program.

"I was amazed at how stable the vessel remained. Also, the science and living quarters were relatively free from noise and vibration," he noted.

The NSF funds the program through the Joint Oceanographic Institutions, Inc. (JOI, Inc.) which manages the project. JOI, Inc., is a not-for-profit consortium of 10 major oceanographic institutions. Joint Oceanographic Institutions for Deep Earth Sampling (JOIDES), an international group of scientists, provides overall planning and program advice.

JOIDES members are University of California, Columbia University, University of Hawaii, University of Miami, Oregon State University, University of Rhode Island, Texas A&M, University of Texas, University of Washington and Woods Hole Oceanographic Institution. Institutions in France and the Federal Republic of Germany are also members. Others in Canada and Japan have announced their intentions to join as well, Rabinowitz said.