

# Real-Time Met-Ocean Monitoring System for the Drillship *Glomar Jack Ryan*

## Project Characteristics:

- *Real-time Environmental Monitoring System*
- *38 kHz and 300 kHz ADCPs*
- *Meteorological Monitoring*
- *Oceanographic Monitoring*
- *PC-based Data Acquisition System*

Strong currents can present hazards to drilling operations, especially as drilling moves into increasingly deeper water. The forces on risers increase dramatically. Both real-time and historical oceanographic and meteorological data become critical components of daily drilling operations and long-term planning.

Real-time current monitoring is also extremely useful when drilling operations are conducted from a dynamically positioned drill ship, because the current profile can also be used to assist in positioning the vessel.

Woods Hole Group designed and built a real-time meteorological and oceanographic monitoring system for the Drillship *Glomar Jack Ryan*, operating in the Gulf of Mexico, the Atlantic Ocean off South America (Trinidad), and offshore Australia while under lease to ExxonMobil. For other operators, including Chevron, BP Brasil, and BP Angola, the system also has been utilized offshore Brazil and West Africa.

The system, which we installed in 2000, consists of a Teledyne RD Instruments' downward-looking 38 kHz phased-array acoustic Doppler current profiler (ADCP) suspended below the surface, and sensors that measure wind speed and direction. The system also included an upward-looking 300 kHz ADCP to measure near-surface currents, as well as a meteorological monitoring system.



Jack Ryan Drillship

Woods Hole Group's proprietary Integrated Real-Time Monitoring System (IRMS) software was used to network, archive, and telemeter the data, as well as to generate real-time user-specific displays on a PC. Data were used onboard to make day-to-day operational decisions. Archived data were used for offshore design purposes.

Woods Hole Group serviced the monitoring system on site every three months. We also provided data QA/QC, management, and services for automated daily transfer of data from the rig to the client's shore side facilities.