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SPOTLIGHT 1. *Glomar Challenger*

The purpose-built Deep Sea Drilling Project (DSDP) research vessel *Glomar Challenger* operated from 1968 through 1983. Its objective was fundamental exploration of the ocean basins. The ship was owned, designed, and built by Global Marine Inc., while Scripps Institution of Oceanography was responsible for the management and operations of the program.

Over its 15-year history, 96 expeditions recovered more than 97 km of core (see table below). Despite primarily using spot coring rather than continuous coring early in the program, the impact of scientific ocean drilling with *Glomar Challenger* was immediate: among other early accomplishments, Leg 3 provided crucial data that validated the seafloor spreading hypothesis. The scientific results from DSDP Legs 1 to 96 were published in the *Initial Reports of the Deep Sea Drilling Project* (http://deepseadrilling.org/i_reports.htm). These reports describe the core and scientific data obtained at sea and include scientific papers based on post-cruise data obtained by individual investigators working in shore-based laboratories. DSDP data are available online from NOAA's National Centers for Environmental Information (<http://www.ngdc.noaa.gov/mgg/geology/dsdp/start.htm>).

Many of the techniques and tools that are now considered routine in scientific drilling were initially designed, tested, and refined on *Glomar Challenger*. For example, Leg 15 in 1970 marked the first use of reentry systems that provide the capability to replace worn-out bits mid-expedition in order to allow deeper penetration. The initial rotary coring system used by DSDP was augmented in 1979 with deployment of the Hydraulic Piston Corer, an early version of the current Advanced Piston Corer, revolutionizing scientific ocean drilling by recovering undisturbed sequences of unlithified sediment. This technology advancement was followed by deployment of the Extended Core Barrel on Leg 90 in 1982, which brought improved recovery in moderately lithified sediments that are not well recovered by either piston or rotary coring.

— Mitch Malone and Brad Clement

GLOMAR CHALLENGER STATISTICS Deep Sea Drilling Project (1968–1983)

Expeditions	96
Distance Traveled (nmi)	375,632
Number of Sites	624
Number of Holes	1,053
Number of Cores	19,119
Core Recovery (m)	97,056
Deepest Water (m)	7,044
Deepest Hole (m)	1,741

