### JOIDES Resolution

**Official Number:** 6151  
**Port of Registry:** Limassol, Cyprus  
**Year Built:** 1978  
**ABS Class:** A1 E Drilling Unit AMS ACCU  
**Ice Class:** 18  
**Constructed at:** Halifax, Nova Scotia, Canada  
**Last Upgrade:** 2009; Jurong Shipyard, Singapore  
**Operated by:** Siem Offshore AS  
**IMO Number:** 7423081

The **JOIDES Resolution**, a uniquely outfitted dynamically positioned drillship with a floating laboratory, has been investigating the Earth’s origin and evolution through scientific ocean coring worldwide since 1985. While contracted for the Ocean Drilling Program and the Integrated Ocean Drilling Program, operations have extended from north of the Arctic Circle to south of the Antarctic Circle and from the depths of the Mariana Trench to the coastal areas off New Jersey. The vessel has also conducted gas hydrate investigative programs for government agencies of Japan and India.

### Capabilities
- **Maximum water depth:** 27,000 ft  
- **Minimum water depth:** 300 ft  
- **Total hanging drill string length:** 30,000 ft  
- **Panama Canal capable (height and width):** 7½ sec  
- **Maximum operating conditions:** 15 ft heave; Total stroke: 20 ft  
- **Lift capacity:** 800,000 lb; 1,200,000 lb locked  
- **Heave Compensation System:** Western Gear model 800-17-20  
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### Core Retrieving Winch
- **National dual drum, independent drive**  
- **Motor:** D 79 electric, 750 hp  
- **Capacity:** 31,000 ft of ½ in. line per drum

### Derrick
- **Model:** Decro 147 ft  
- **Height above water line:** 192 ft  
- **Rating:** 1,200,000 lb static; 800,000 lb dynamic

### Drawworks
- **Model:** Oilwell E3000  
- **Motors:** 2 ea. EMD M89 – ALB x 1,200 hp ea. Line: ¾ in.  
- **Brakes:** Dual Baylor Elmagco model 7838

### Drill String Support
- **Type:** Dual elevator handler (no slips; protects pipe)  
- **Model:** Varco DEHS/471

### Drill String Bending Restraint
- **Moonpool guide horn (no riser support)**  
- **Type:** Horizontal racking (triples)  
- **Manufacturers:** Western Gear/VMW  
- **Capacity:** 24,700 ft of 5 in. drill pipe; 9,900 ft of 5½ in. drill pipe

### Cranes
- **Type:** Bucyrus Erie Pedestal type  
- **Manufacturer:** Nautronics  
- **Model:** 5002 (dual redundant)  
- **Capabilities:** 2% of water depth  
- **Signal:** GPS primary; Beacon secondary

### Personnel Complement
- **Capacity:** 129

### Scientific Spaces
- **Square footage:** 18,000 sq ft  
- **Refrigerated core storage:** 26,250 cu ft

### Normal Fuel Consumption
- **Cruising:** 33–38 mt/day  
- **DP (3 engines):** 16.5–19.5 mt/day  
- **DP (2 engines):** 12–13 mt/day  
- **In port:** 9–10 mt/day

### Transit Speed
- **10.5 kt (optimal)**

### Helideck
- **Super Puma AS332L2 capable**  
- **D-value:** 20; **T-value:** 9.3 mt

### Moonpool
- **22 ft diameter**

### ASK System
- **Manufacturer:** Nautronics  
- **Model:** 5002 (dual redundant)  
- **Type:** intermediate baseline  
- **Capabilities:** 2% of water depth  
- **Signal:** GPS primary; Beacon secondary

### ROTARY TABLE
- **Model:** Oilwell A-49 1/2  
- **Motor:** EMD D 79 MB  
- **Maximum speed:** 250 rpm

### MUD/CEMENT
- **Mud pumps:** 2 ea. Oilwell A1700PT triplex  
- **Liquid mud:** 3,740 bbl  
- **Bulk capacity:** 13,300 cu ft  
- **Cement unit:** Halliburton-400 HT

### PROPULSION
- **Electric motors:** 2 ea. EMD M89 – ALB x 1,200 hp ea. Line: ¾ in.  
- **Propulsion engines:** 7 EMD 16 cylinder diesel  
- **Normal fuel consumption:** 9,992 st

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### MOONPOOL
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Survey Capabilities
- Navigation system
- Bathymetry system
- Seismic sound source and acquisition systems

Drilling and Coring Capabilities
Drilling and Coring
- Soft sediment: Advanced Piston Corer (APC)
- Hard sediment: Extended Core Barrel (XCB)
- Hard rock: Rotary Core Barrel (RCB)
- Borehole reentry capabilities

Downhole Sampling Tools
- Recovery of cores at in situ pressure
- Recovery of in situ formation fluid

Drilling Parameters
- Rig Instrumentation System

Formation Measurement Capabilities
IODP and Third-Party Tools
- Formation temperature
- Formation pressure
- Resistivity at the bit

Formation Logging
- Resistivity
- Gamma ray attenuation density and lithology
- Natural gamma radiation
- Neutron porosity
- Acoustic velocity
- Bottom-of-hole check shot
- Vertical seismic profiling
- Borehole temperature

Long-Term Observatories
- Circulation Obviation Retrofit Kit (CORK)

Shipboard Analytical Capabilities
Geological Analyses of Core Samples
- Lithology, structures, fossils, etc.
- Microscopy
- X-ray diffraction mineralogy
- Stratigraphic correlation
- Heat flow analysis

Physical Properties of Core Samples
- Moisture and density analysis
- Magnetic susceptibility
- Gamma ray attenuation bulk density
- Natural gamma radiation
- Resistivity
- Thermal conductivity
- Spectral reflectance
- Magnetostatigraphy and rock magnetism
- Acoustic velocity
- Sediment strength

Chemistry and Microbiology
- Hydrocarbon and natural gas chromatography
- Organic constituent analysis
- Pyrolytic hydrocarbon content characterization
- CHNS analysis
- Total organic carbon analysis
- Coulometric carbonate analysis
- ICP-AES elemental analysis
- Ion analysis in aqueous samples and extracts
- Halogenated compound detection
- Microbiological microscopy
- Sample mass measurement
- Gas analysis
- Radioisotope van for sample preparation

Staff Support
- Drilling and coring technical support
- Laboratory and logging technical support
- Information Technology technical support
- Curatorial and data management support
- Publications and Web support

Network and Communications
- High-capacity data servers and ~7 TB storage system
- Wireless network available in laboratory areas
- Network connections available throughout ship
- Over 20 Mac and ~50 Windows workstations
- Over 20 Windows instrument hosts
- Laboratory Information Management System
- Printers throughout labs and large-format plotter
- Video distribution system
- 24/7 ship-to-shore communications
- Digital Asset Management System

Curation, Data, and Publication Services
- Shore-based, secure, refrigerated core storage
- Shore-based analytical equipment
- Janus relational database
- Production of state-of-the-art publications since 1986