Remotely operated sea bed rockdrills and vibrocorers: new advances

Heather Stewart
On behalf of the Marine Geology and Operations Team
Overview

• Background

• The BGS 55m rockdrill

• The BGS battery-operated vibrocorers

• Summary
Background – remotely operated rockdrills and vibrocorers
55m Rockdrill (RD2)

- Capable of coring up to 55m below sea bed
- 1.7m core lengths
- Can operate in water depths up to 4000m
- Additional sensors:
  - Gas flow meters
  - Down-hole logging tools
  - CTD
• Wire-line coring tools
• 4.8m high, 3m wide
• Comes in 7 containers including its own Launch and Recovery System (LARS)
A tool arm located in the centre of the drill moves the drill rods and core barrels from the tool racks to drill centre and back again.
A view of the back deck
Gas flow meters

- BGS developed concept to assess volume of gas hydrates.
  - Battery data logger
  - Patent pending
Gas flow meters
BGS Vibrocorers
• Umbilical deployed Vibrocorer
  • Operates to 2000m WD

• Scientific requirement 6000m WD

• Solution: autonomous, battery powered system
BGS battery-operated vibrocorers
Example of vibrocorer penetration graphs downloaded from the automated system.
High-latitude Operations

- Flexible options to operate on vessels able to work in ice prone areas.
- Battery system can be used on vessels with limited deck space.
The BGS have a number of remotely operated vibrocorers and rockdrills available to the scientific community.

The recently developed RD2 system:
- Core up to 55m below sea floor.
- Up to 4000m water depth.
- Gas flow meter technology specifically developed for gas hydrate research.

Autonomous, battery-operated vibrocoring system:
- Compatible with 3m and 6m systems.
- Up to 6000m water depth.
- No extra power and lift umbilical so can fit onto vessels with limited vessel space.
Thank you

Contact information

• Engineers:
  • Iain Pheasant (iph@bgs.ac.uk)
  • Michael Wilson (mdwi@bgs.ac.uk)

• Geologists:
  • Alan Stevenson (agst@bgs.ac.uk)
  • Heather Stewart (hast@bgs.ac.uk)

@BGSMarineGeo
www.bgs.ac.uk