

National Marine Facilities – Sea Systems

RVOC Meeting

St. Petersburg, FL, USA

24th – 27th April 2007



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**NATIONAL MARINE
FACILITIES
SEA SYSTEMS**

Past Year Highlights

- Formation of Sea Systems, incorporating:
 - Research Ship Unit
 - UK Ocean Research Services
- Sale of RRS Charles Darwin to Gardline Surveys
- Delivery of RRS James Cook
- Isis ROV cruise to Antarctica



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NERC Programme 2007

- *RRS Discovery*
 - N. Atlantic
- *RRS James Cook*
 - Trials until end of February, N Atlantic to the Caribbean at the end of the year
- *RRS James Clark Ross*
 - Transit via north from Antarctic; summer in N. Atlantic (Baffin Bay)
- **Barthers**
 - Ron Brown - (RAPID) N. Atlantic
 - Meteor – TOBI
 - Celtic Explorer – PAP
 - G. O. Sars – AMT?



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Forward look: Proposed NERC Programme 2008

- *RRS Discovery*
 - North Atlantic
- *RRS James Cook*
 - East Pacific, North Atlantic, Southern Ocean
- *RRS James Clark Ross*
 - Transit via north from Antarctic; summer in Greenland Sea
- Barters
 - RV Sonne – Sumatra
 - UNOLS (TBC) - RAPID



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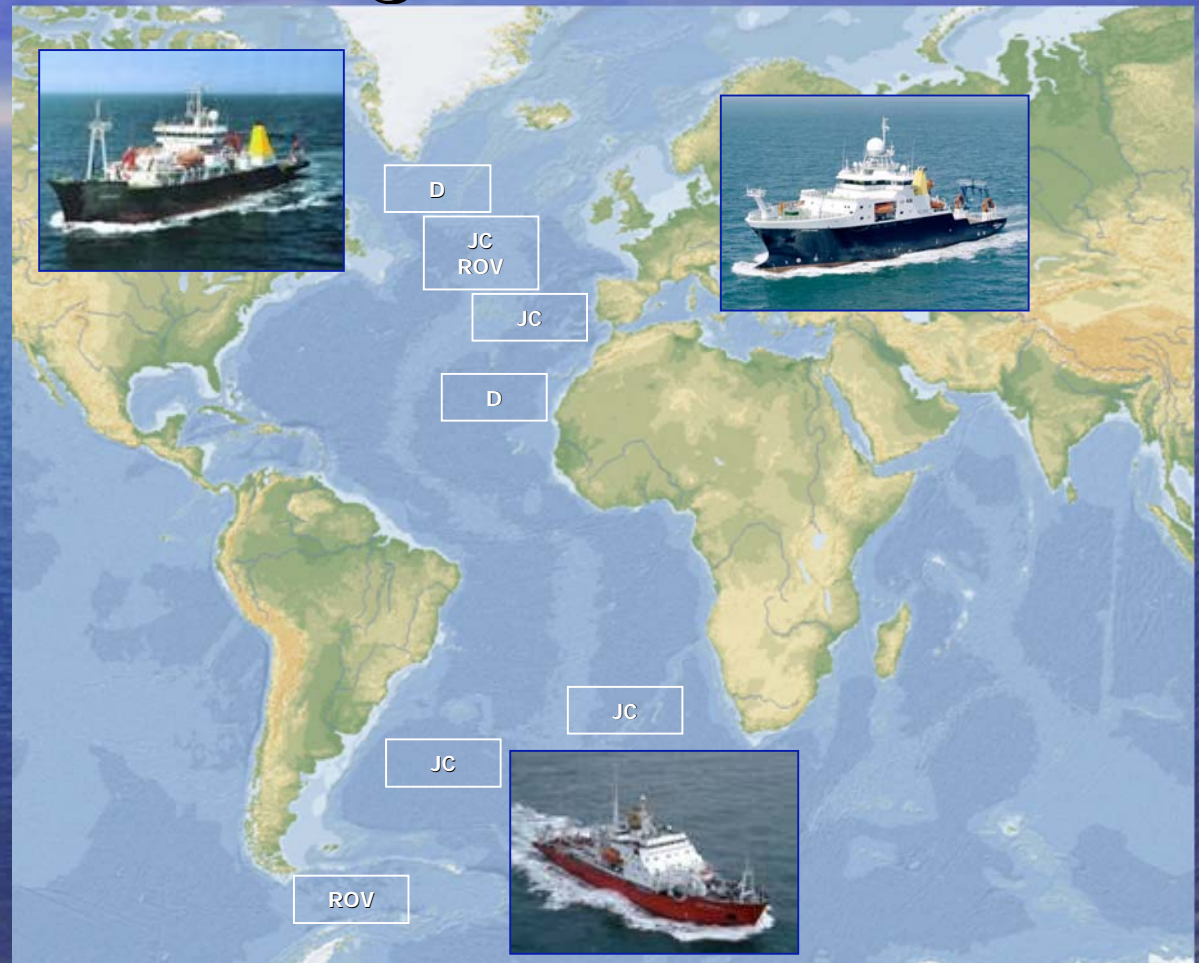
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Forward look: Proposed NERC Programme 2009

- *RRS Discovery*
 - North Atlantic
- *RRS James Cook*
 - Atlantic, Southern Ocean
- *RRS James Clark Ross*
 - Minimal NERC days



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James Cook

Length Overall:	89.50 m
Breadth:	18.60 m
Draft:	5.50-5.70 m
Displacement:	5368t GRT
Class:	Lloyds +100A1, Ice 1C, FS, +LMC, UMS DP(AM) Research Vessel
Maximum Speed:	15 kts SS4
Cruising Speed:	12 kts SS4
Maximum Endurance:	50 days
Science & Stores DW:	385 t
Scientific Berths:	32 singles
Officers:	9 singles
Crew & Technicians:	13 singles
Open Deck Spaces:	446 m ² - Afterdeck & Starboard Amidships
Total Lab Areas:	277.5 m ²



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James Cook – Snapshots of Progress



3 Mar 05



6 Jun 05



27 Jun 05



8 Sep 05



3 Oct 05



4 Nov 05



17 Nov 05



18 Nov 05



13 Jan 06



10 Feb 06



17 Mar 06



24 Mar 06



9 Jun 06



28 Aug 06



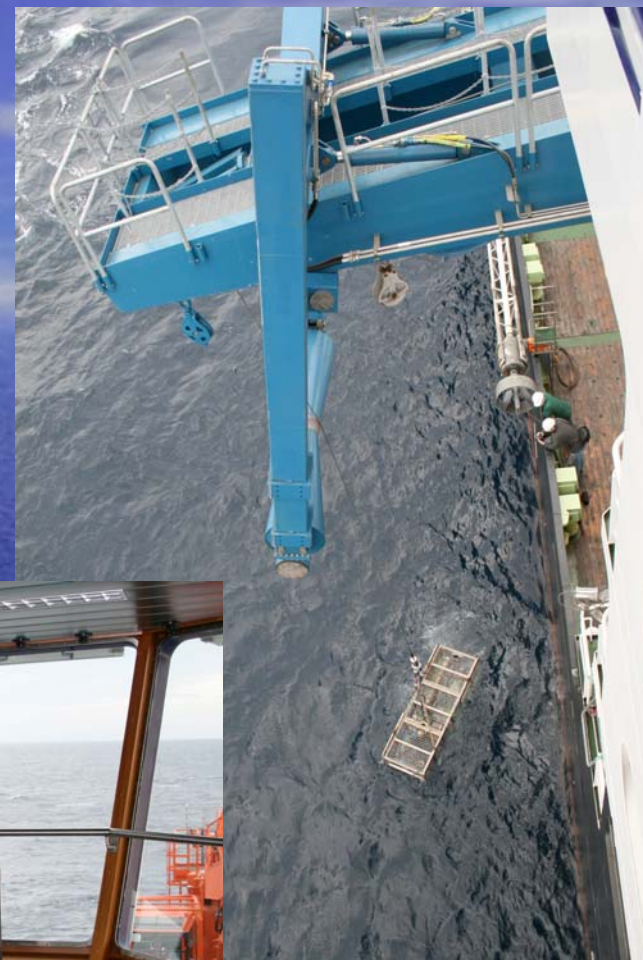
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Wheelhouse



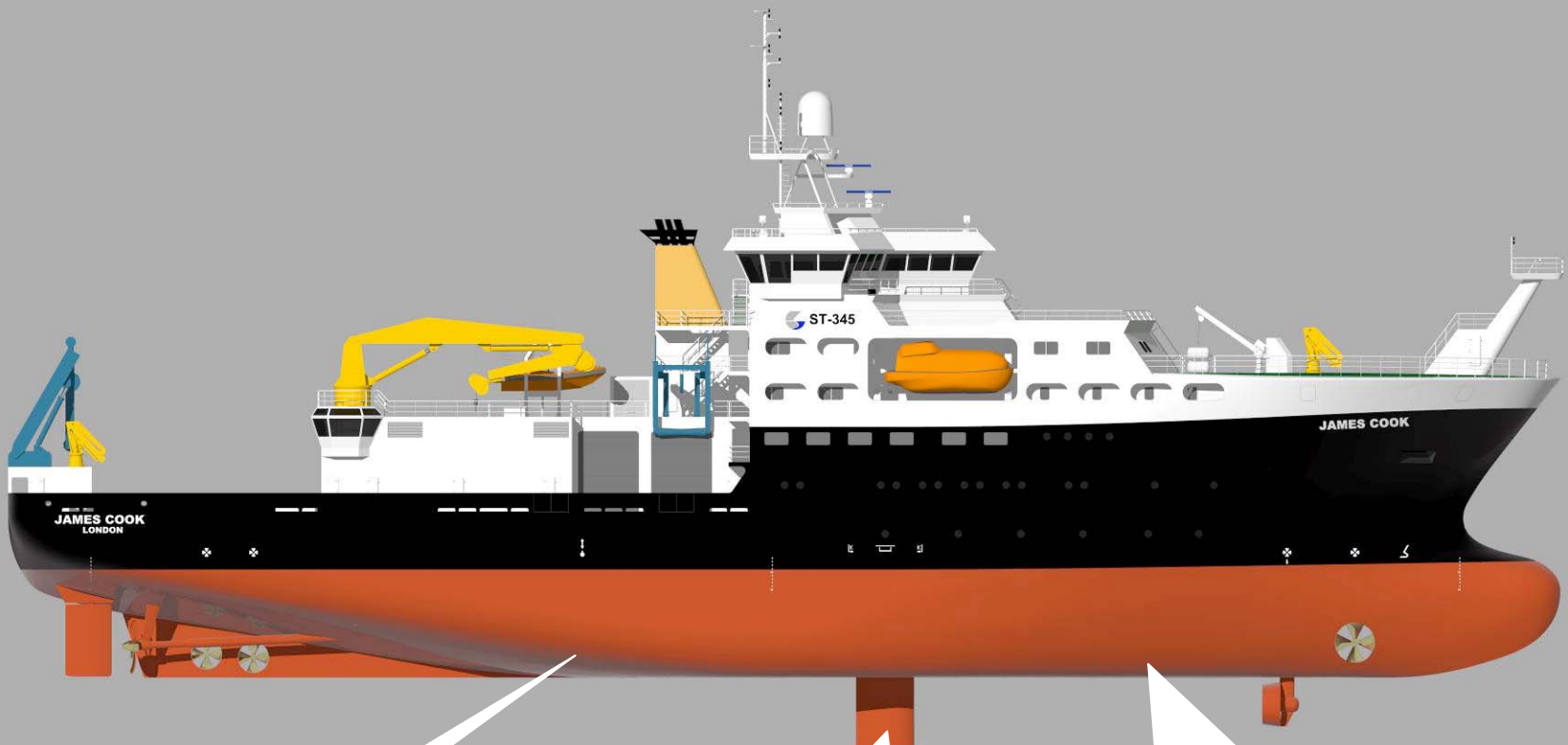
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Transducers



2 x USBL Spar:
Sonardyne USBL

2 x Drop Keels:
EK60 (12, 18, 38, 70, 120, 200 kHz) E/S
75kHz ADCP
150kHz ADCP
EM710 (70-100kHz) MBES (2° x 2°)

Hull flush mount:
EM120 (12kHz) MBES (1° x 1°)
SBP120 (2-7kHz) Sub-bottom profiler

Propulsion

Diesel Generators:	4 x Wartsila 9L20 1,770Kw
Propulsion Motors:	2 x Teco Westinghouse 2,500Kw



1 x 600 Kw Standard Tunnel Thruster
1 x 800 Kw Super Silent Tunnel Thruster

1200 Kw Super Silent Tunnel Thruster

1350 Kw Azimuth Thruster:



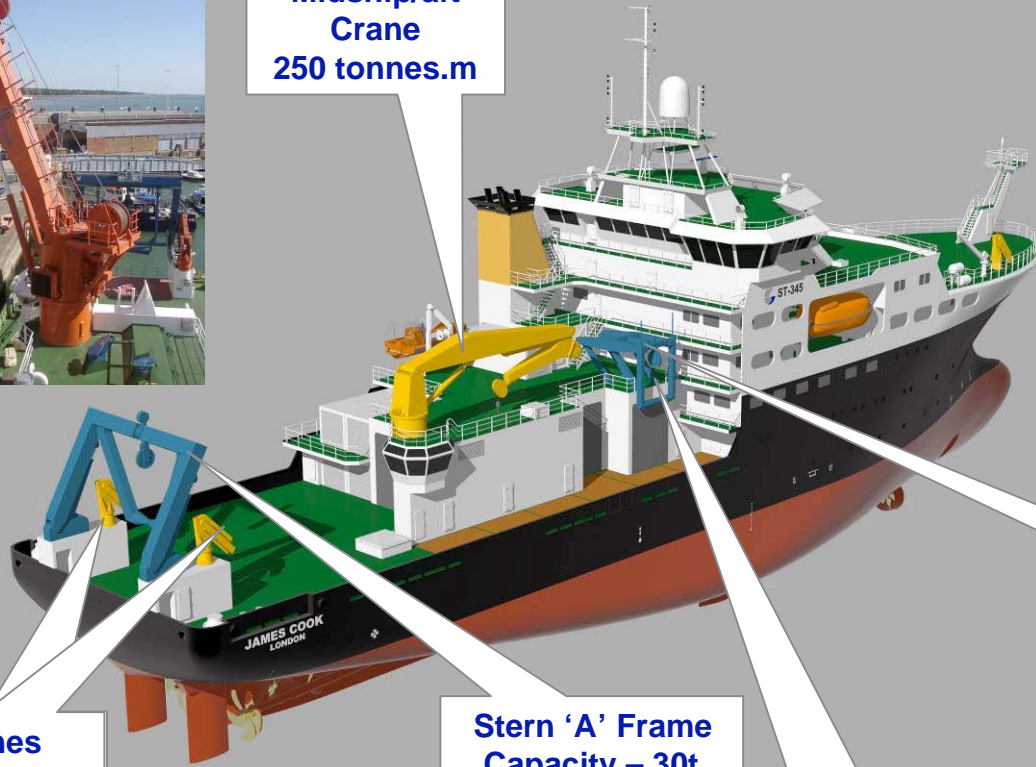
Handling



**Midship/aft
Crane
250 tonnes.m**



**Starboard 'A' Frame
Capacity – 30t
Max. Height – 5m**



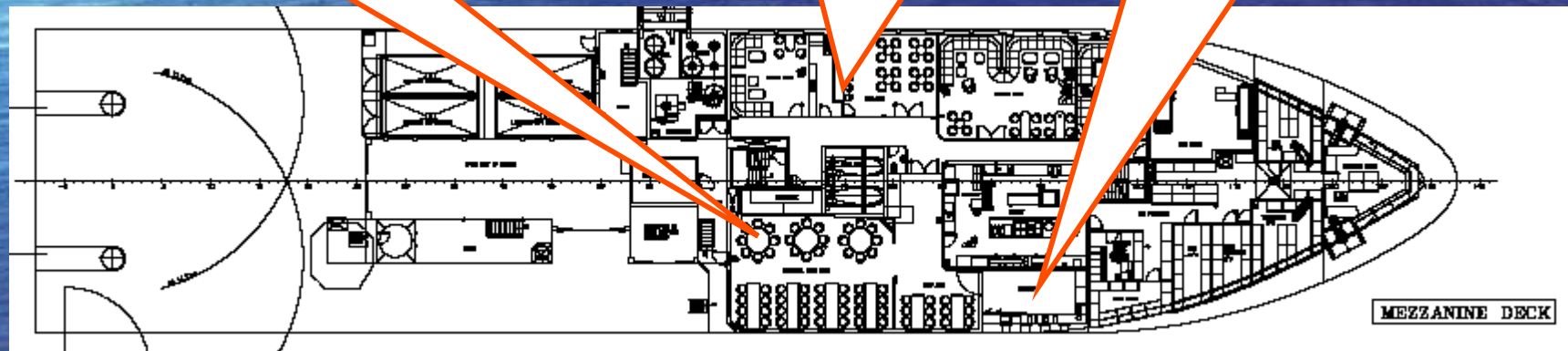
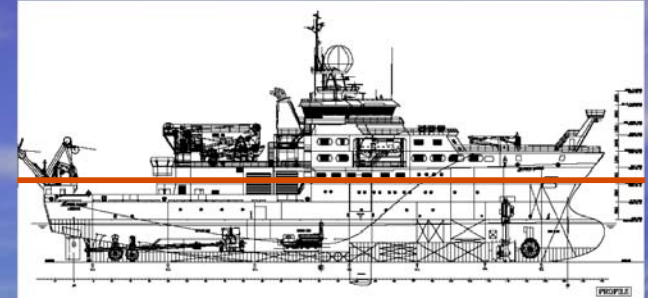
**Aft Cranes
40T.m**

**Stern 'A' Frame
Capacity – 30t
Max. Height – 8m**

**Starboard Hydro boom
Capacity – 5T
Max. Height – 4.5m**



Cook Deck Layout

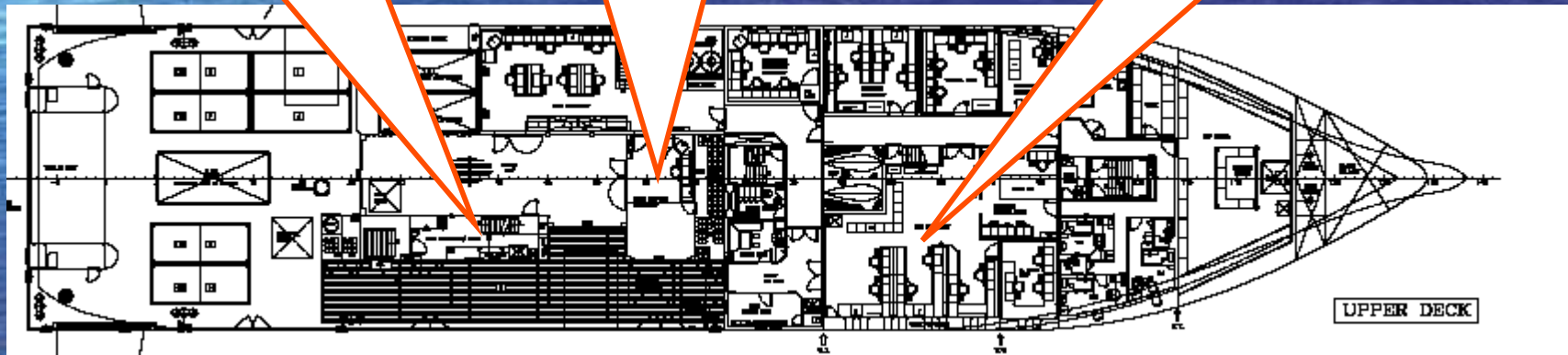
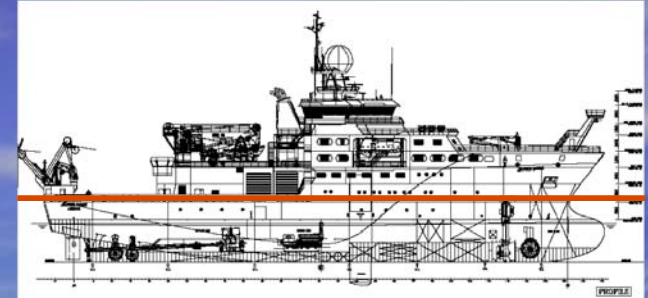


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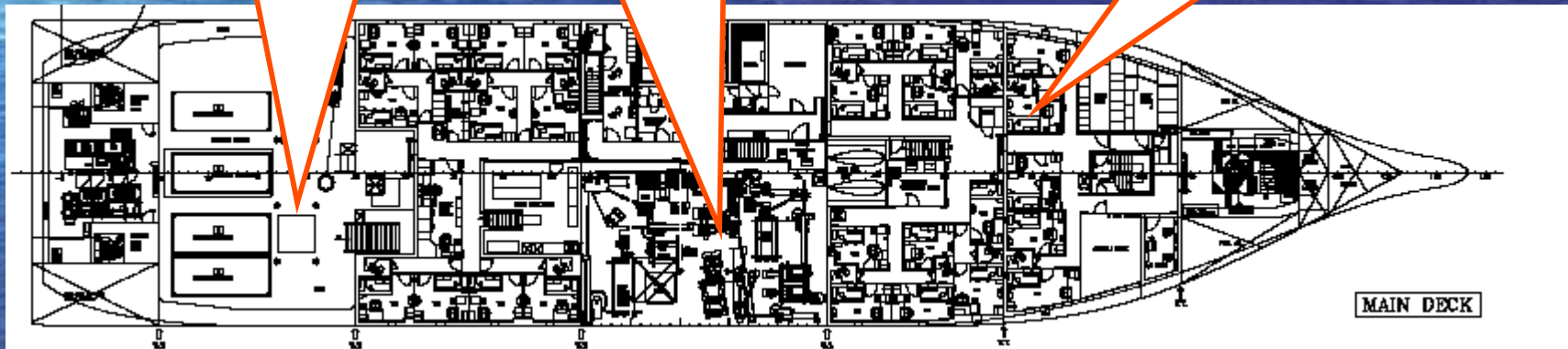
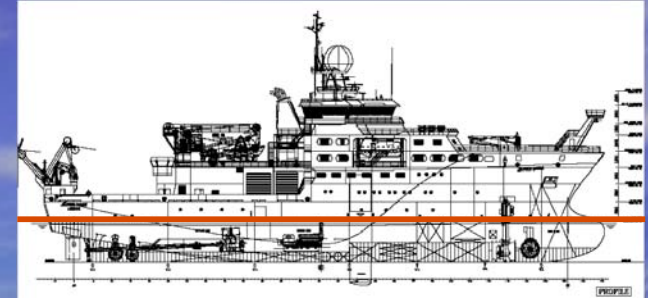
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Cook – Next Steps

- 17 Apr – Completed first science cruise
- Spring – e. Summer 2 more science cruises (including major 54d ROV cruise)
- Guarantee dry-dock August
- Outstanding issue:
 - Significant bubble-sweepdown problem
 - Hydrographic (multibeam) suite
 - Non-toxic (pumped SW system)
 - May require significant bow redesign/rebuild



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Discovery Replacement

- £60M (US\$120M)
- In service 2011/12
- By then Discovery 49 yrs old
- Reduce days at sea
- Barter
- Charter



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