

National Marine Facilities – Sea Systems



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Master Mariner

Research Ship Manager



RVOC Meeting
University of Maryland Center for Environmental
Science
Chesapeake Biological Laboratory
Solomons, MD
23 – 25 April 2013



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NATURAL ENVIRONMENT RESEARCH COUNCIL



**NATIONAL MARINE
FACILITIES
SEA SYSTEMS**

Who are we?

- The organisation assigned by the Natural Environmental Research Council (NERC) to manage and operate the 'blue water' UK government scientific research vessels. Based at the National Oceanography Centre at Southampton (NOC) providing:
 - Research Ship Management
 - Programme Management
 - Scientific Engineering
 - Logistic Support Services
 - Finance and HR services are provided by NOC Business Support Services
 - Procurement provided by a Shared Services Centre



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Past Year 'Highlights'

- RRS Discovery
 - Full year on science (7 cruises) but 2 significant passage legs
 - Final cruise in November-December.
 - Disposal for recycling February 2013
- RRS James Cook
 - Full year on science (7 cruises) but 3 significant passage legs
 - Positive TV exposure
- Shore Support
 - Stability of team members



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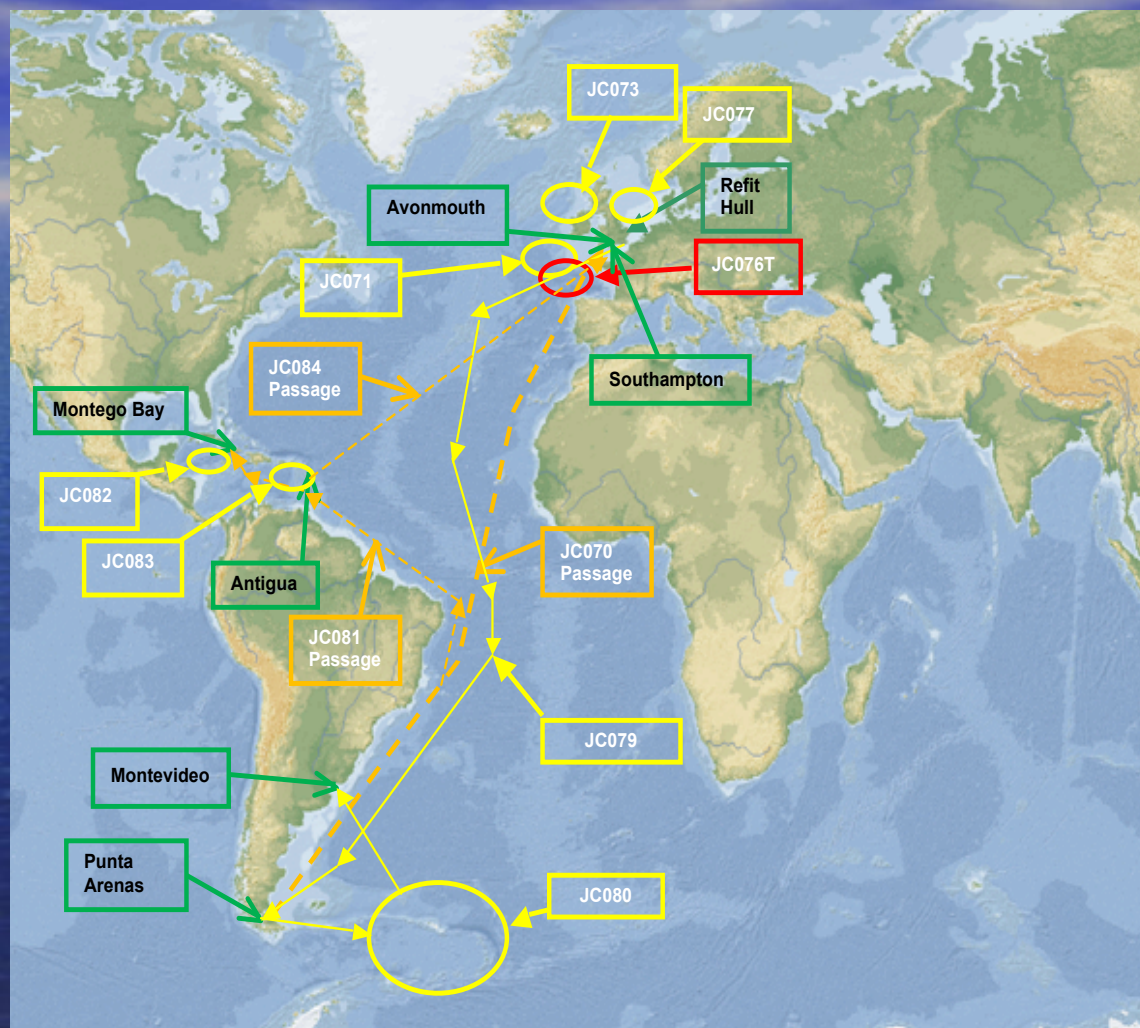
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NERC Programme 2012-2013

- *RRS James Cook*
 - N Atlantic
 - S Atlantic
 - Atlantic Meridional Transect
 - Southern Ocean
 - Caribbean



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Ship Issues – James Cook

- One medical issue requiring diversion (1 marine crew),
- Bubble sweep-down issues continue,
- Continued restrictions on use of main propulsion. Year end figures indicate that usage has kept within NERC usage targets,
- Difficulties sourcing engineer and ETO posts,
- Short and medium term sickness,
- Support for navigation and DP systems - Upgrades



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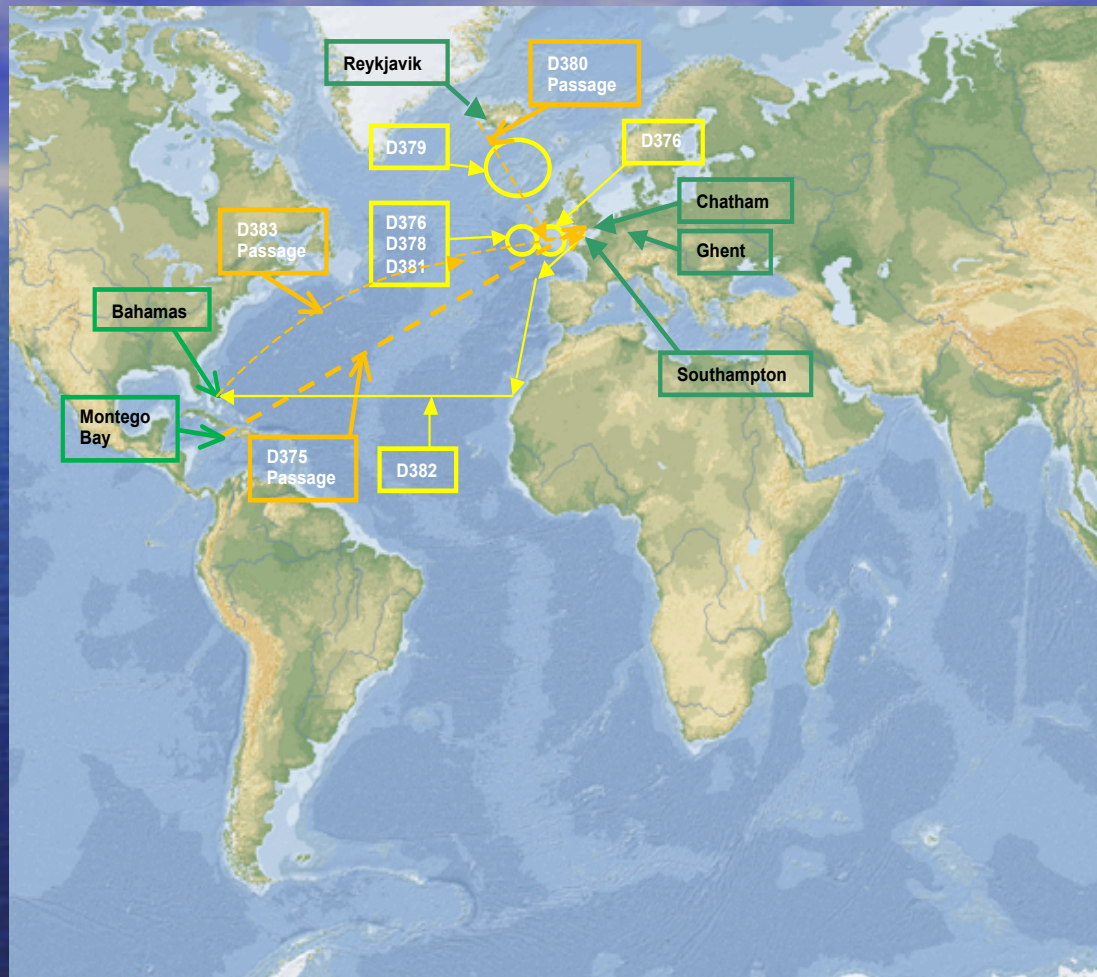
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NERC Programme 2012-2013

- *RRS Discovery*
 - Refit
 - N Atlantic
 - RAPID Trans Atlantic
 - Disposal



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Ship Issues - Discovery

- Loss of CTD due to operator error,
- DipClear issues with Portugal and Morocco,
- Additional cruise time,
- Disposal programme,



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Ship Issues – Both

- Delay in disposal of Discovery adversely affecting manning for new vessel,
- Age profile of seafarers / succession planning,
- Appropriate medical standards for fitness,
- New OH provider appointed,
- Alcohol and Drug Policy,
- Greater use of port of Southampton



**National Oceanography
Centre, Southampton**

UNIVERSITY OF SOUTHAMPTON AND
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Shore Issues

- UKG austerity measures,
- Prioritisation of tasks with less resources,
- Fuel usage

| Ship | Estimated usage mT | Cost at £431/mT | Cost Delivered | Actual usage mT | Fuel uplifted mT | Average cost GBP /mT | Consumption mT/day | | | |
|------------|--------------------|-----------------|----------------|-----------------|------------------|----------------------|--------------------|-----|-----|-----|
| | | | | | | | Sci | Pas | Tri | Alo |
| Discovery | 1527 | £457,939 | £637,633 | 1323 | 1061 | £644 | 5 | 6.2 | 0 | 2.2 |
| James Cook | 2693 | £1,314,419 | £2,074,724 | 2776 | 3049 | £674 | 8.7 | 11 | 7.5 | 2.5 |
| | 4220 | £1,772,358 | £2,712,357 | 4099 | 4110 | | | | | |



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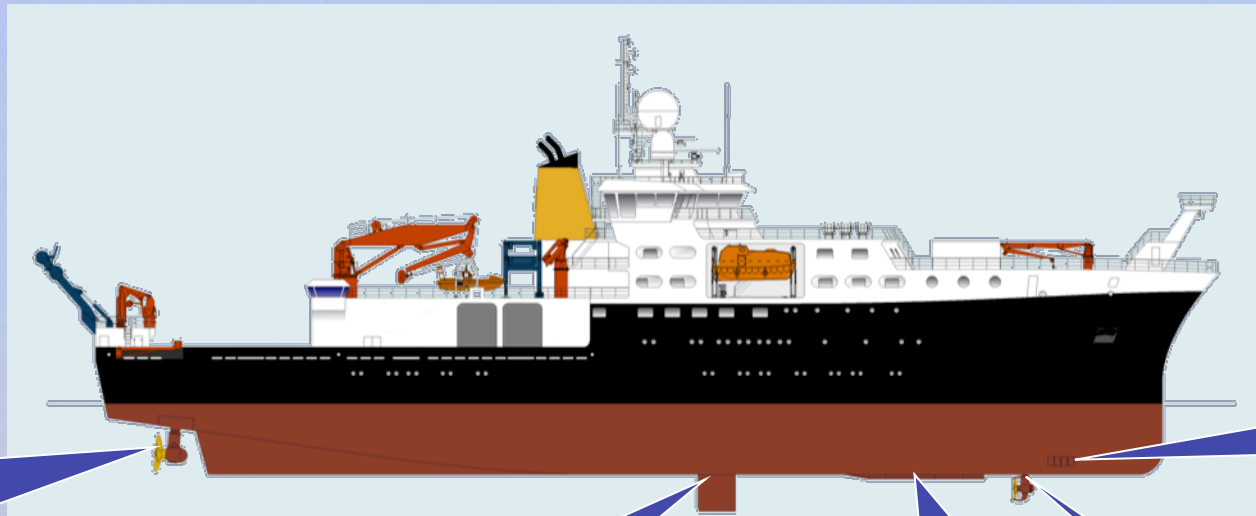
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New RRS Discovery – Outline

- 50 days endurance (L 99.7m, B 18m, D 6.5m)
- Scientific Transit Speed – 12 knots max
- 23 Officers & Crew
- 28 Scientists & Technicians
- DP Capable (DP2) SS6/7
- Minimal Ice Class – for hull life (Lloyds 1D)
- Overside/overstern lifting - 20tonnes
- Low URN but not as low as RRS James Cook



**2 x Azimuth Thruster
(2 x 2,200kW Motors)**

Drop Keels:

Port:

- EA600 12kHz
 - 10kHz TX/RX
 - Flow noise Hydrophone
- ### **Stbd:**
- EK60
 - 18/38/60/120/200/333kHz

**1,575kW
Tees Gill Thruster**

Multibeam Blister:

- EM122 1° x 1° 12kHz
- SBP120 3° x 3°
- EM710 2° x 2° 70-100kHz
- 75kHz ADCP
- 150kHz ADCP
- Flow noise Hydrophone

**1,350kW
Azimuth Thruster**



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Lab & Scientific Spaces

| LABORATORY SPACE (m2) | RRS Discovery | RRS James Cook | New RRS Discovery |
|-------------------------------|----------------------|----------------------|----------------------|
| MAIN LAB & SCIENTIFIC CONTROL | 92 | 110 | 121 |
| COMPUTER ROOM | 21 | 14 | 15 |
| DECK LAB | 65 | 65 | 65 |
| CHEMISTRY LAB | 18 | 30 | - |
| GENERAL PURPOSE LAB | - | - | 53 |
| CLEAN CHEMISTRY LAB | - | - | 16 |
| CONTROLLED TEMPERATURE LAB | 18 | 24 | 26 |
| WATER SAMPLING ROOM | 23 | 32 | 27 |
| SEALED LAB/DARK ROOM | 8 | 4 | 8 |
| SALINOMETER ROOM | - | - | 13 |
| STABLE LAB/GRAVIMETER ROOM | 10 | 5 | 4 |
| TOTAL LABORATORIES | 255 | 284 | 348 |
| Notes: | 2,745ft ² | 3,057ft ² | 3,746ft ² |

| SCIENTIFIC STORES/WORKSHOPS (m2) | RRS Discovery | RRS James Cook | New RRS Discovery |
|----------------------------------|----------------------|----------------------|----------------------|
| HANGAR | 62 | 82 | 85 |
| CORE STORE | 10 | 2 | 6.5 |
| ELECTRONICS WORKSHOP | 14 | 14 | 14 |
| SCIENTIFIC STORE | 144 | 220 | 180 |
| WINCH ROOM | 109 | 145 | 180 |
| DECK WORKSHOP | 35 | 14 | 26 |
| TOTAL STORES/WORKSHOPS | 374 | 477 | 491.5 |
| Notes: | 4,026ft ² | 5,135ft ² | 5,290ft ² |



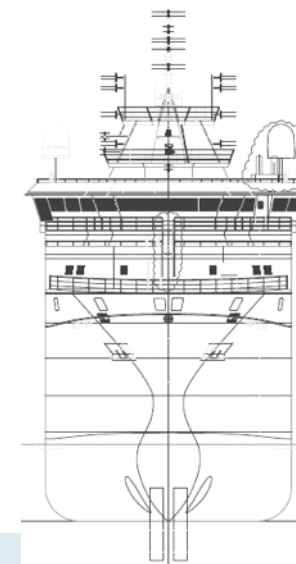
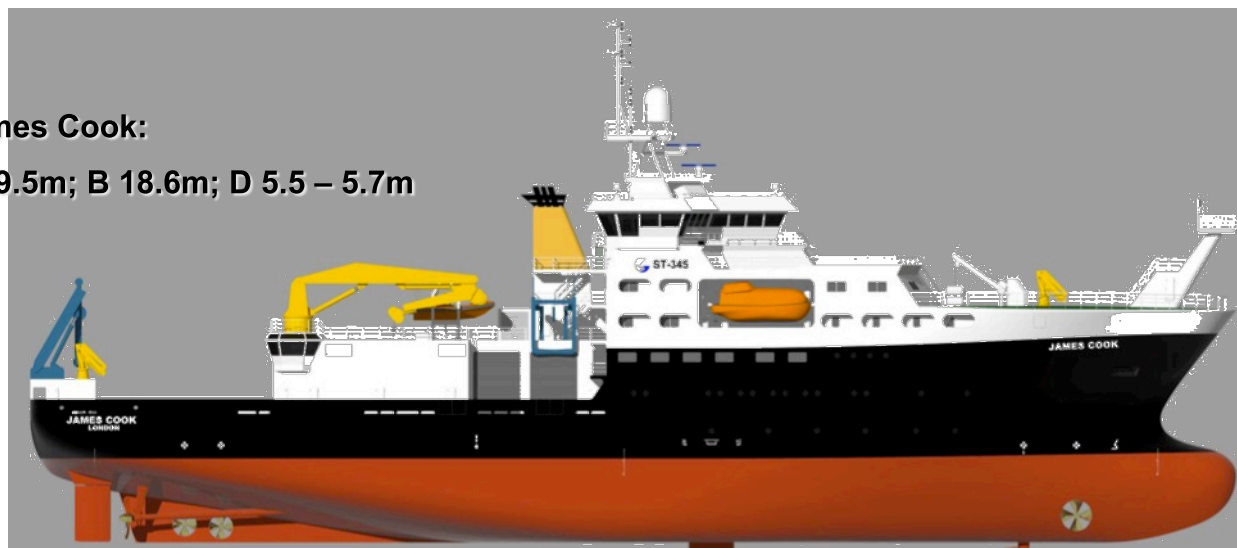
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James Cook:

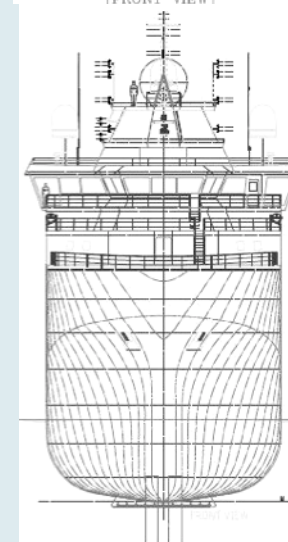
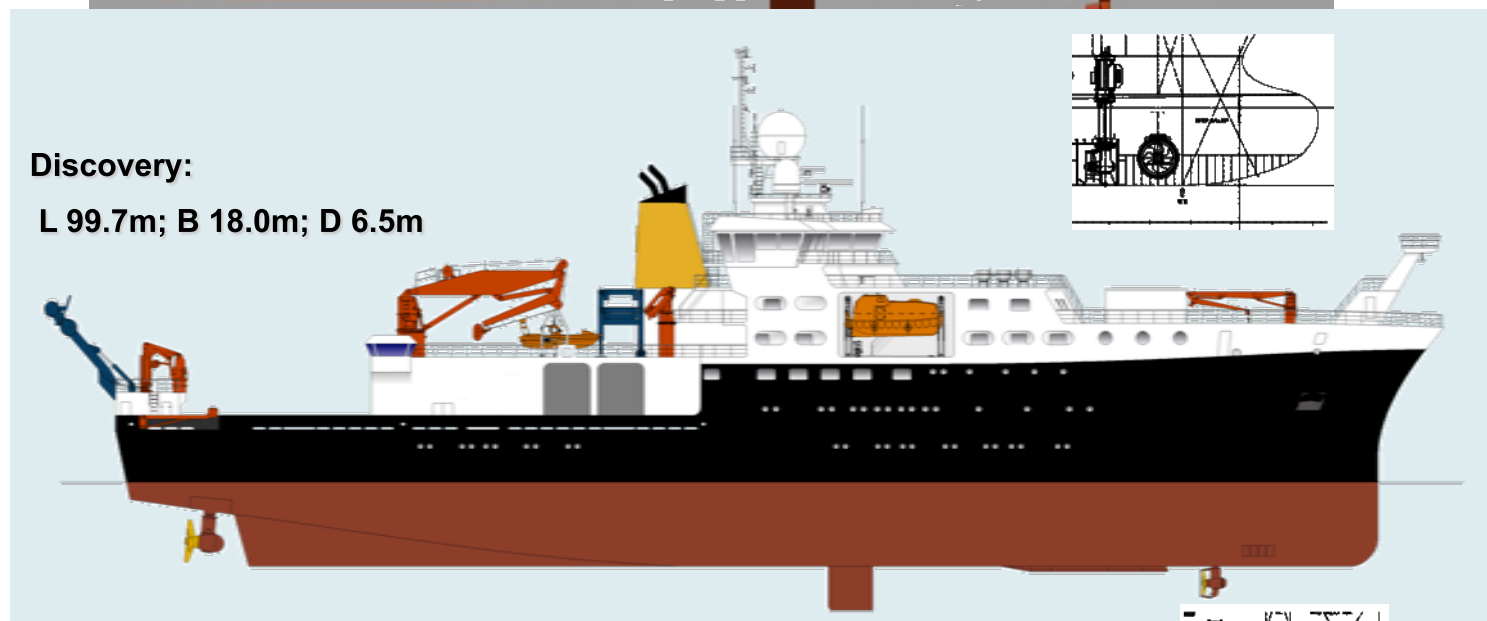
L 89.5m; B 18.6m; D 5.5 – 5.7m

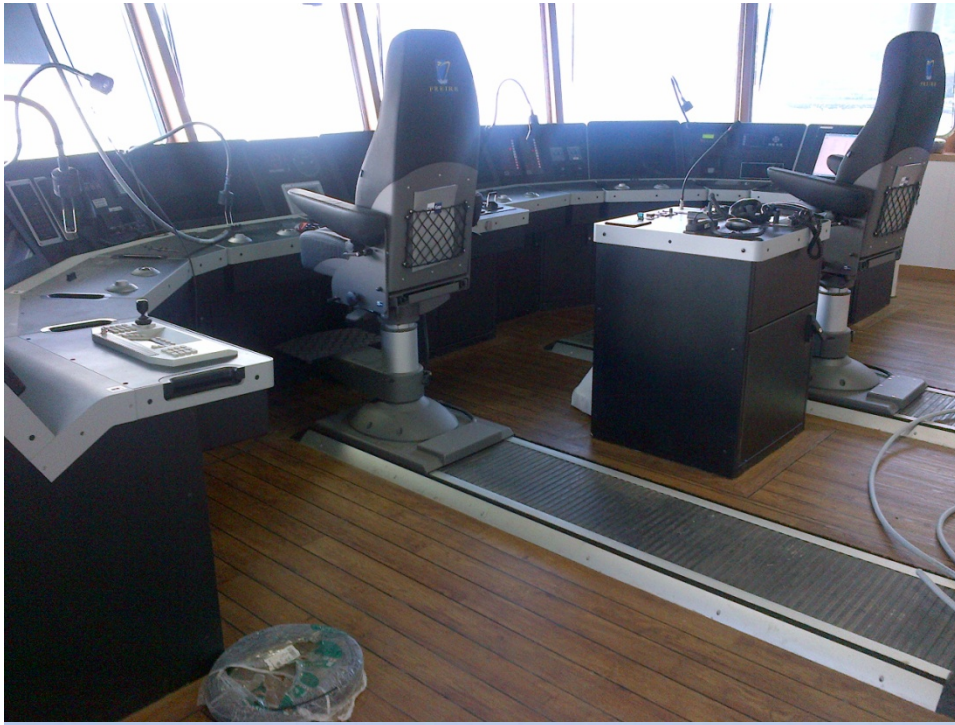


[FRONT VIEW]

Discovery:

L 99.7m; B 18.0m; D 6.5m







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