



# National Marine Facilities – Sea Systems

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Director National Marine  
Facilities



**National  
Oceanography Centre**  
NATURAL ENVIRONMENT RESEARCH COUNCIL

<http://noc.ac.uk>



# Final departure and disposal of old RRS Discovery



**National  
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<http://noc.ac.uk>

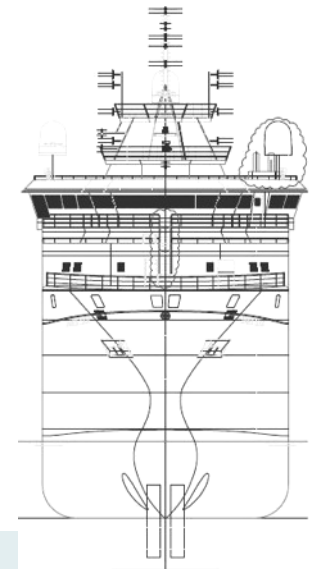


# Naming by HRH Princess Royal – 10 Oct 2013



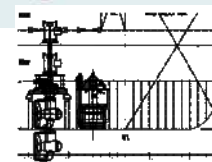
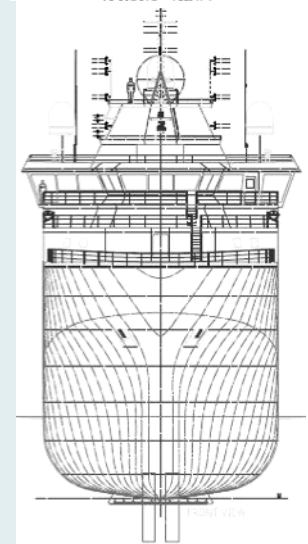
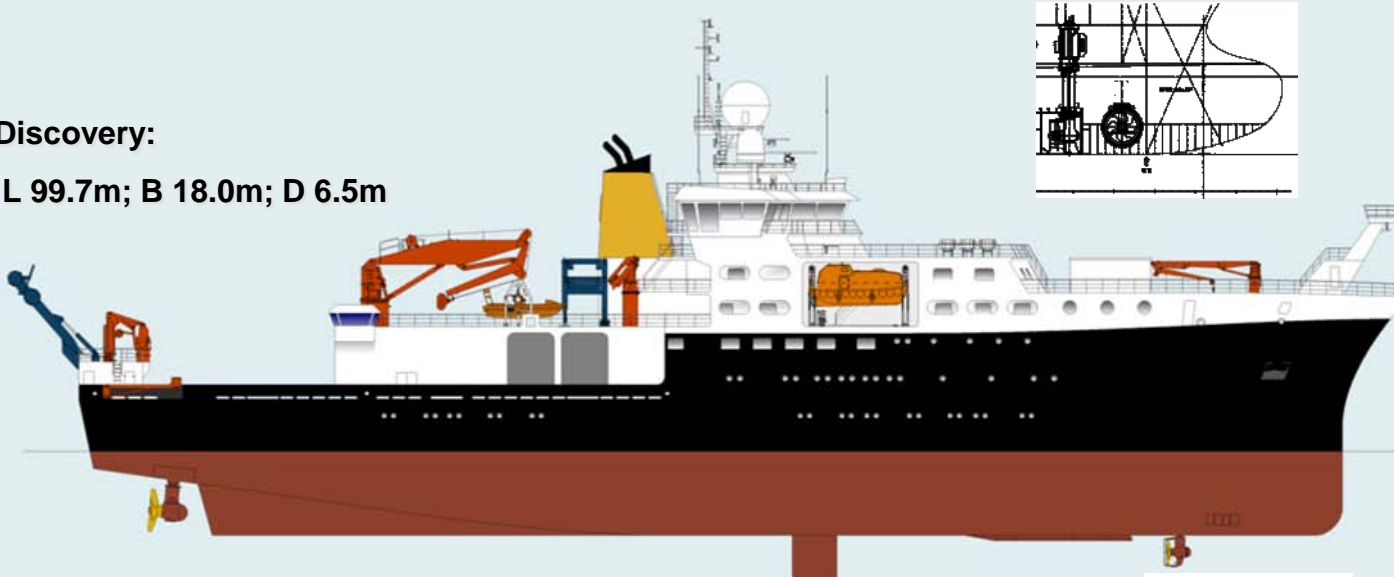
**James Cook:**

**L 89.5m; B 18.6m; D 5.5 – 5.7m**

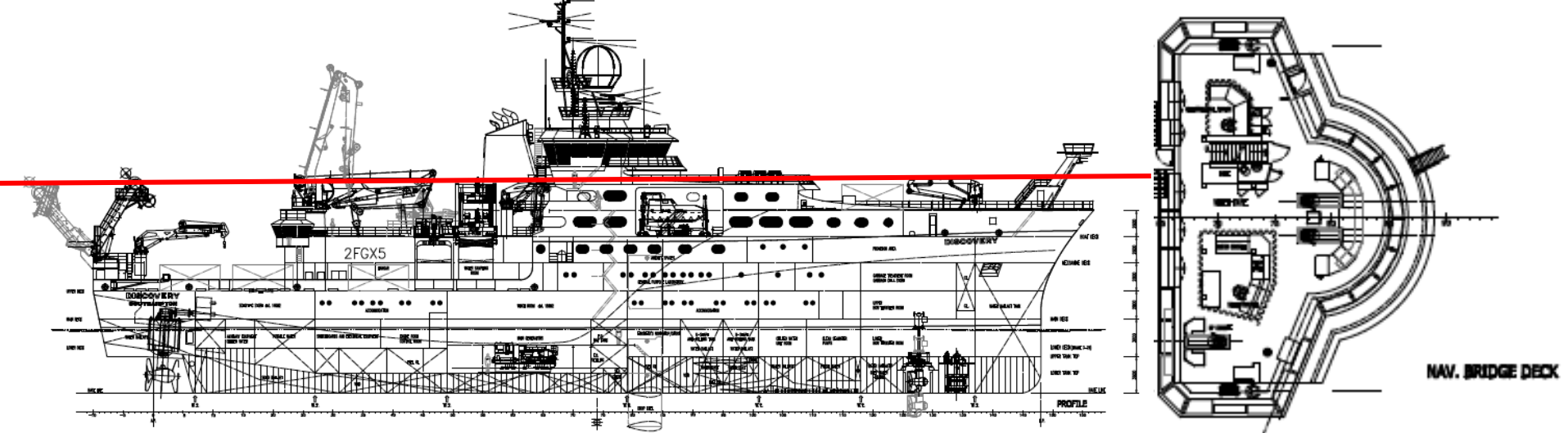


**Discovery:**

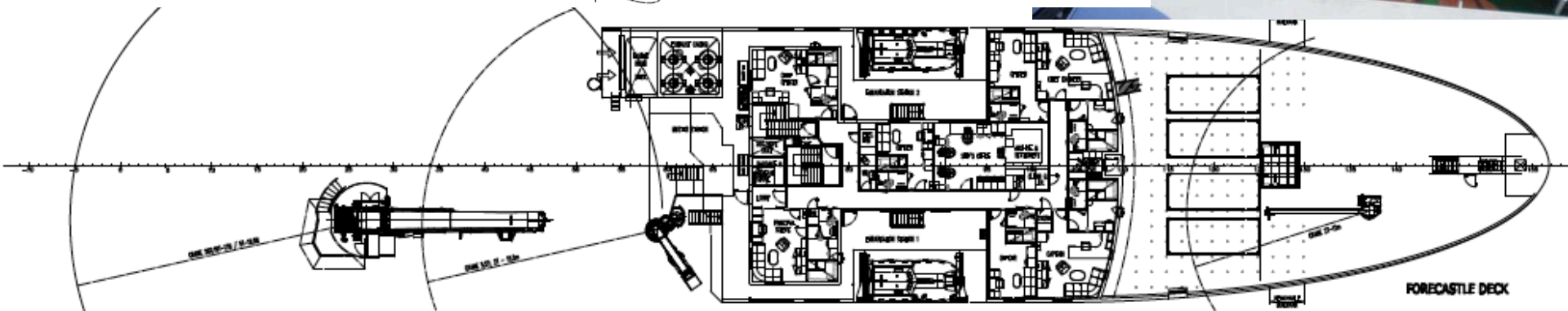
**L 99.7m; B 18.0m; D 6.5m**





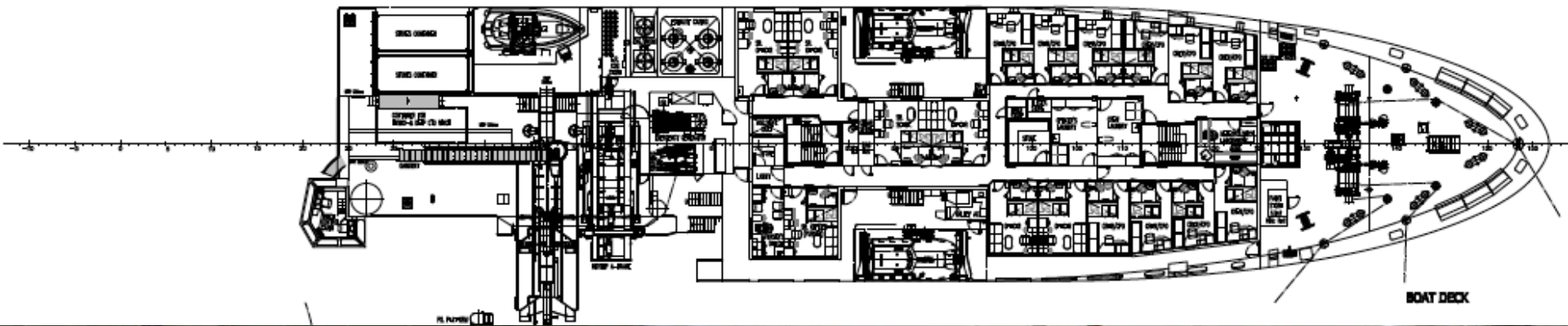
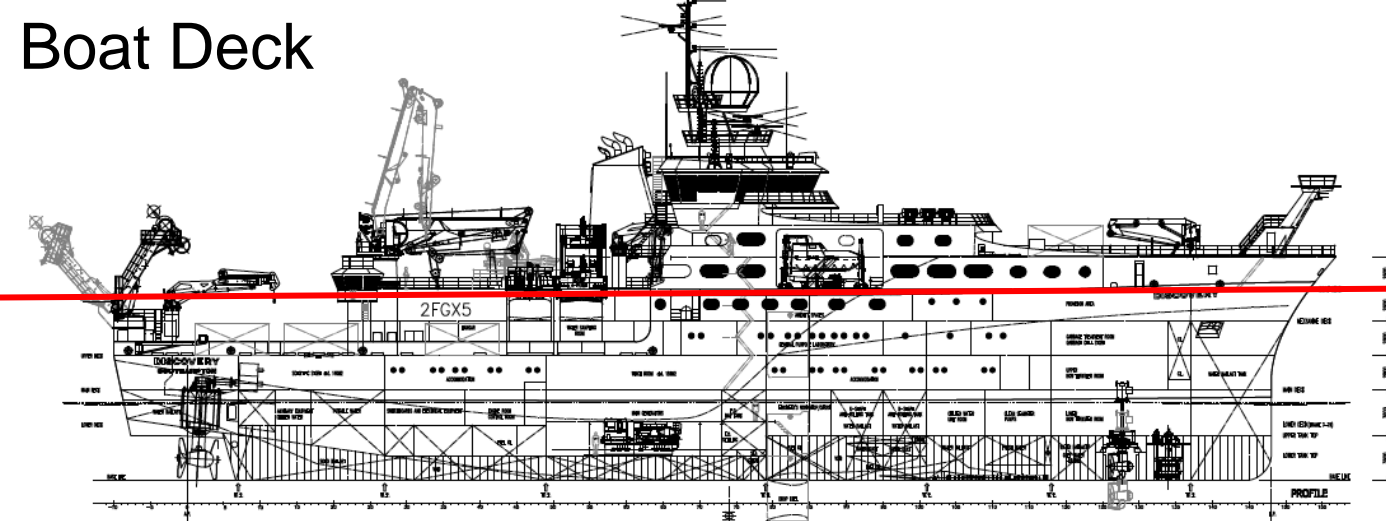


# Forecastle Deck



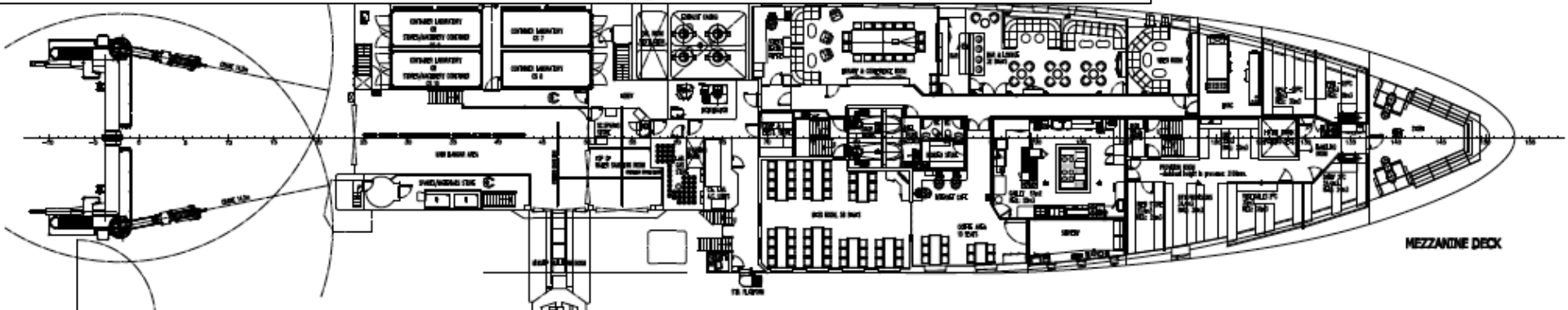
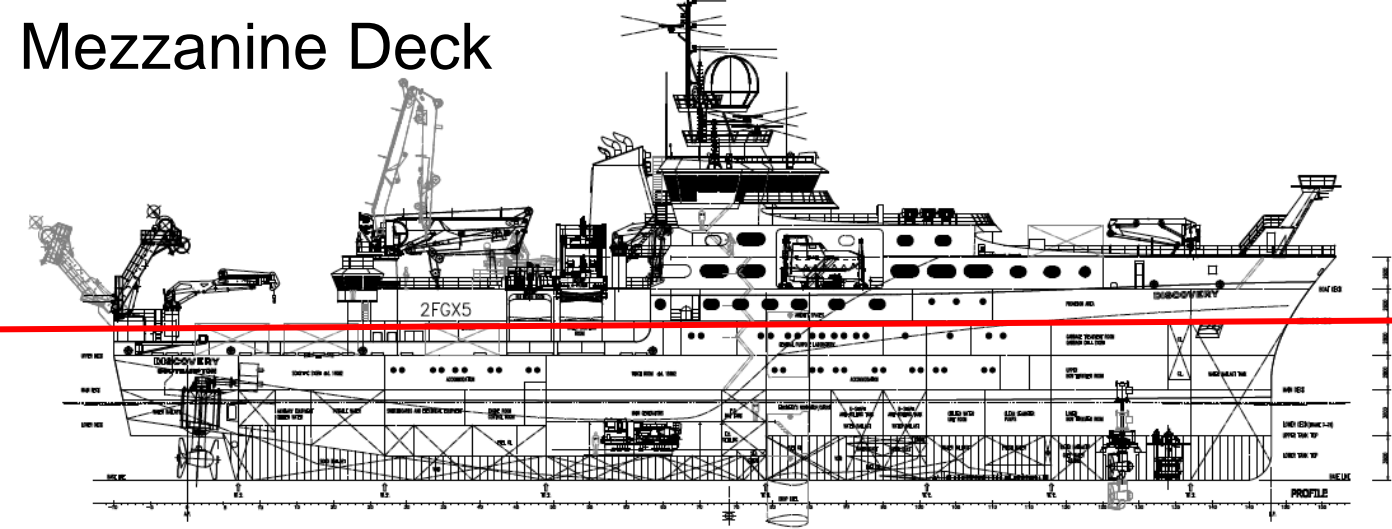


# Boat Deck



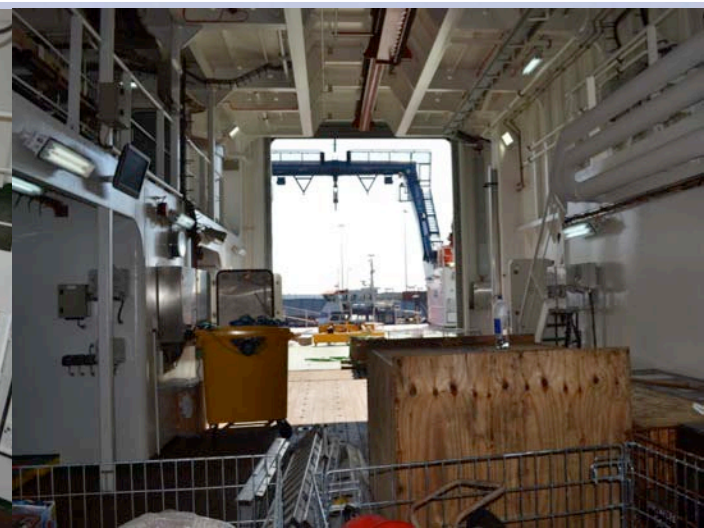
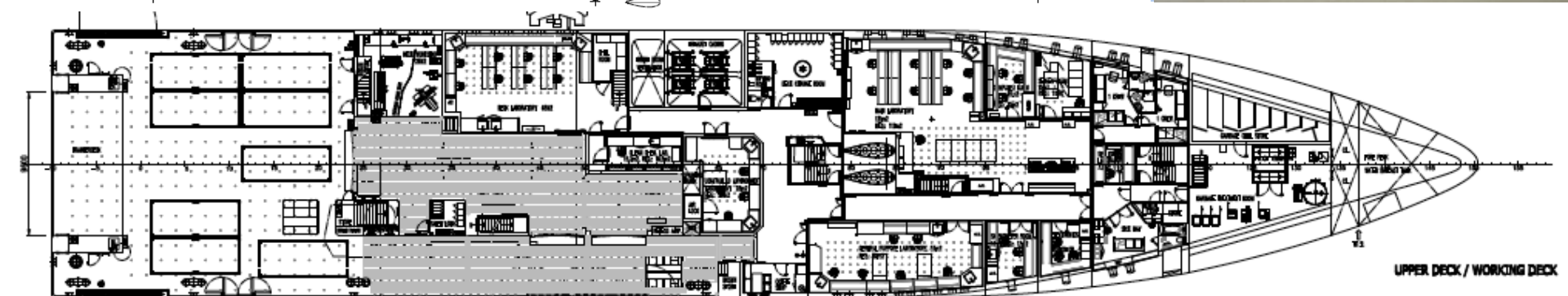
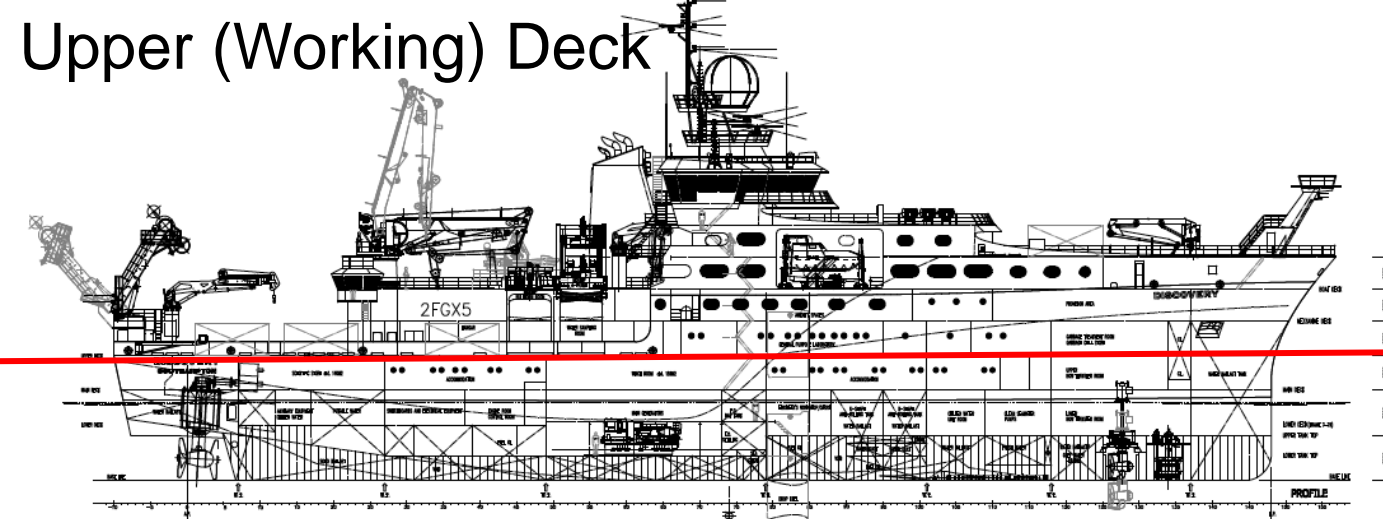


# Mezzanine Deck





# Upper (Working) Deck







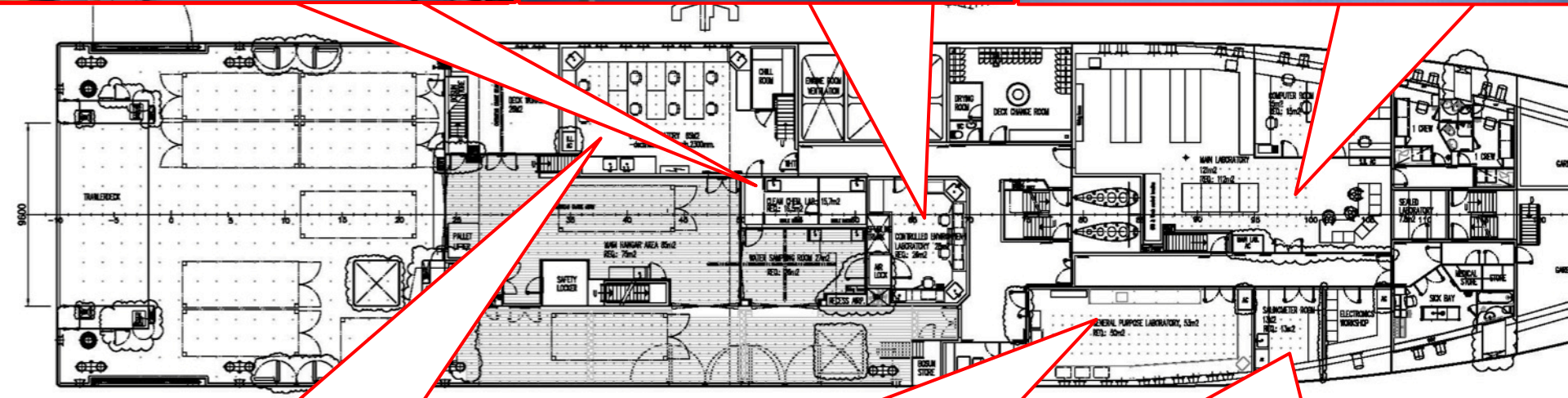
Clean Chemistry Lab



Constant Temp Lab



Main Lab Control



Deck Lab



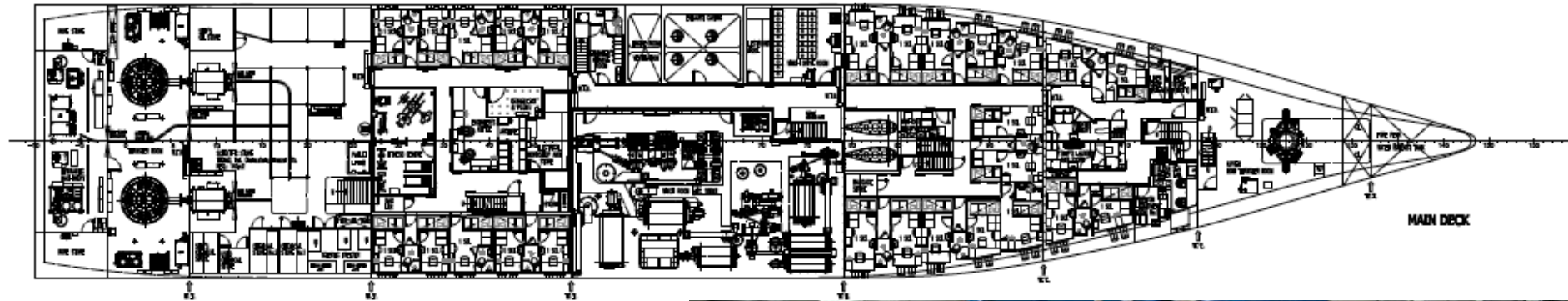
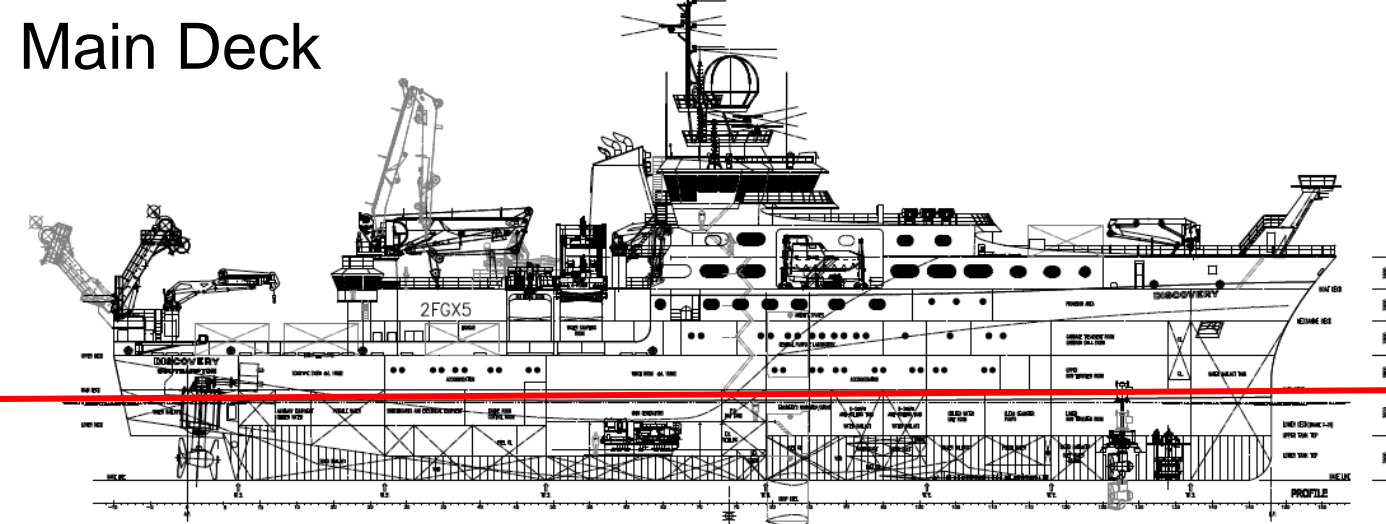
General Purpose Lab



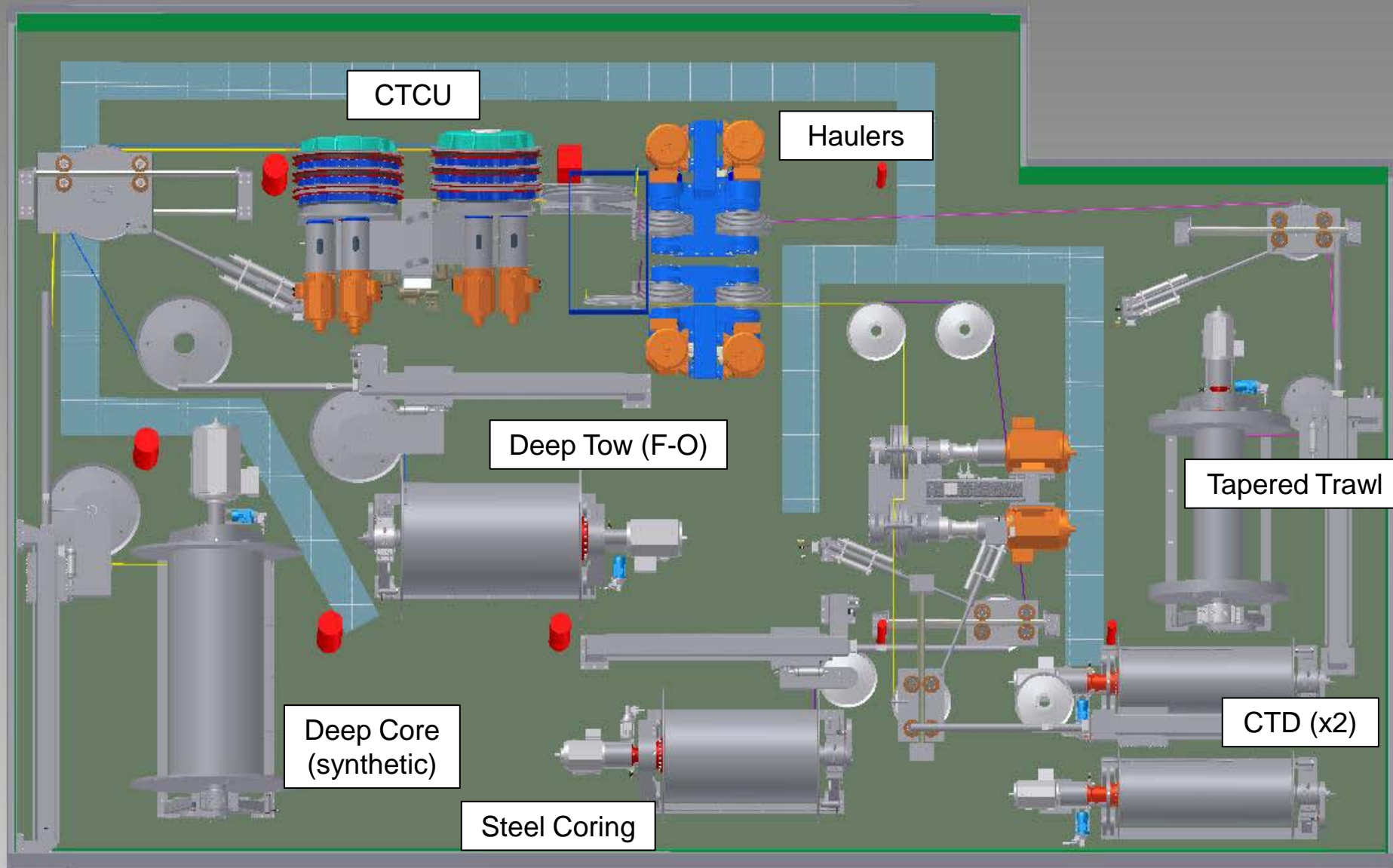
Salinometer Room



# Main Deck

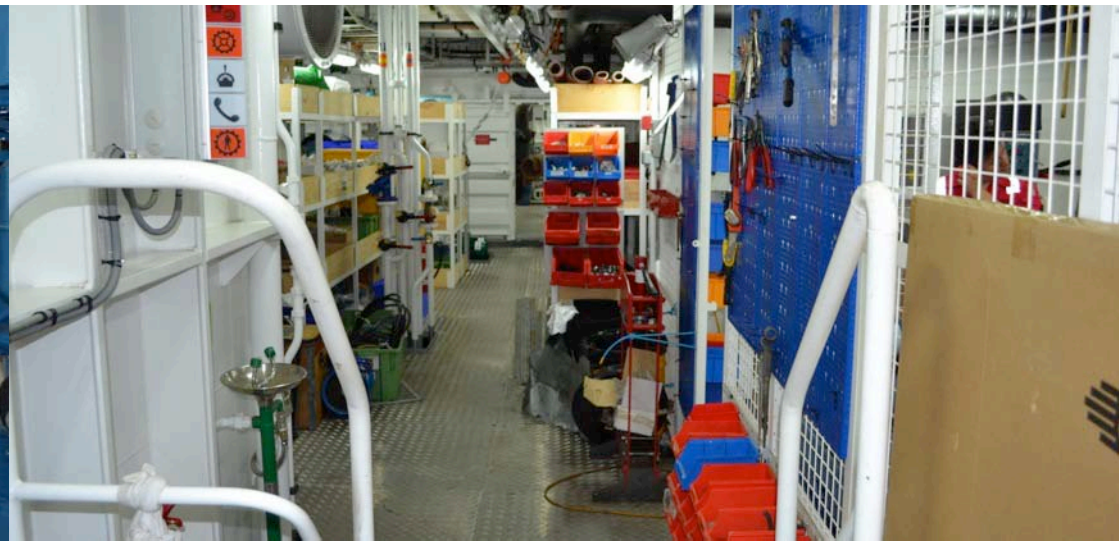
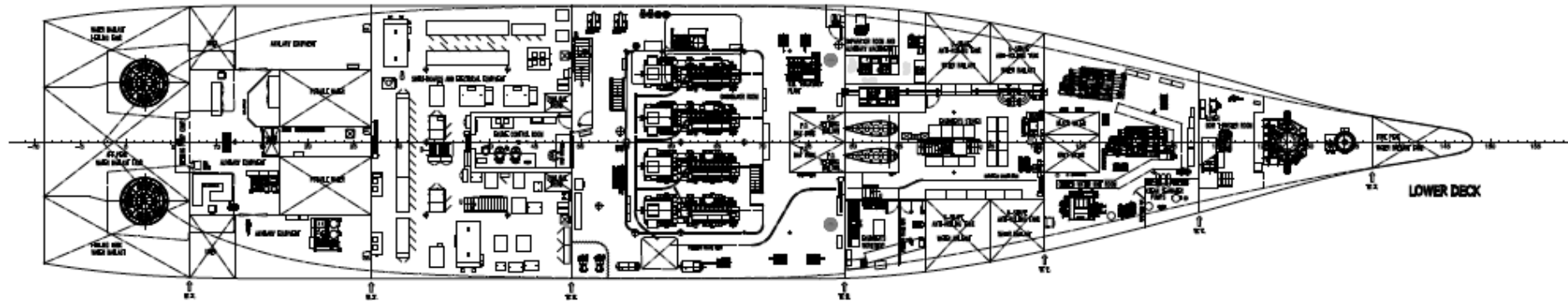
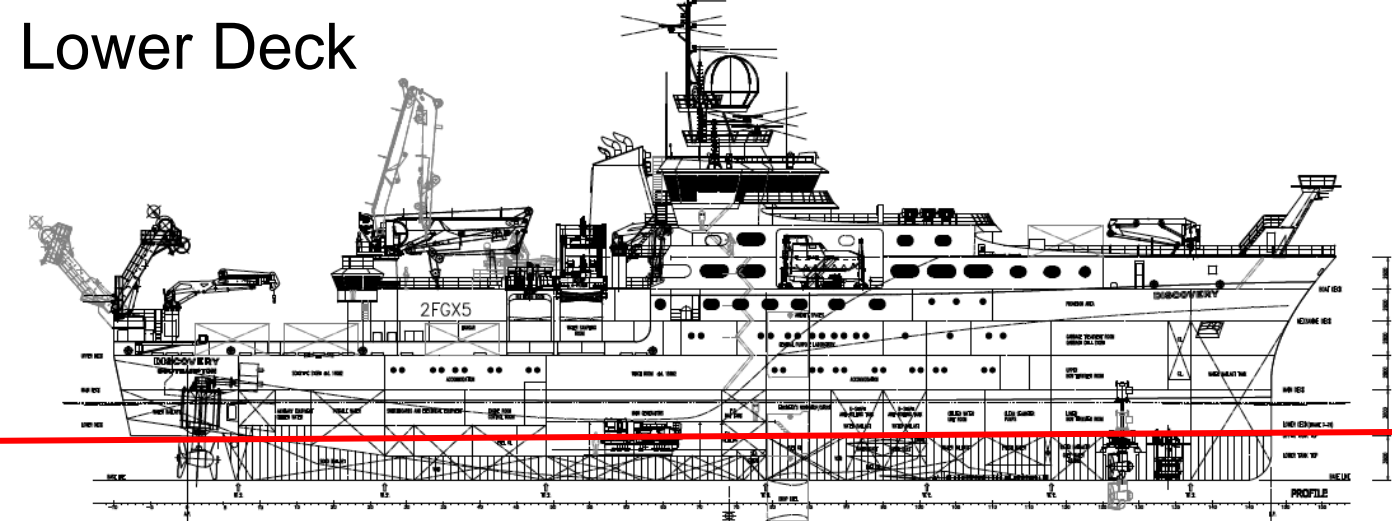




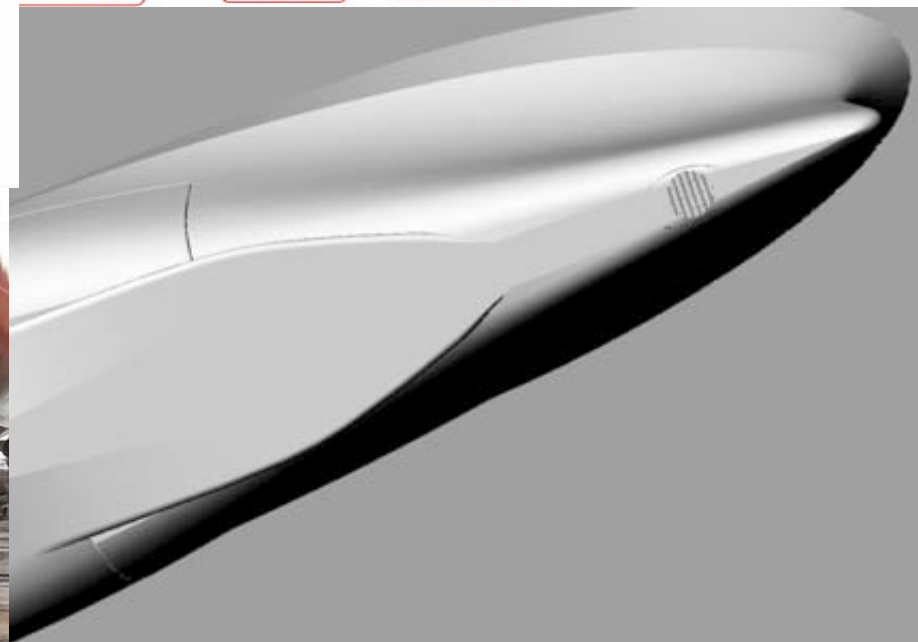
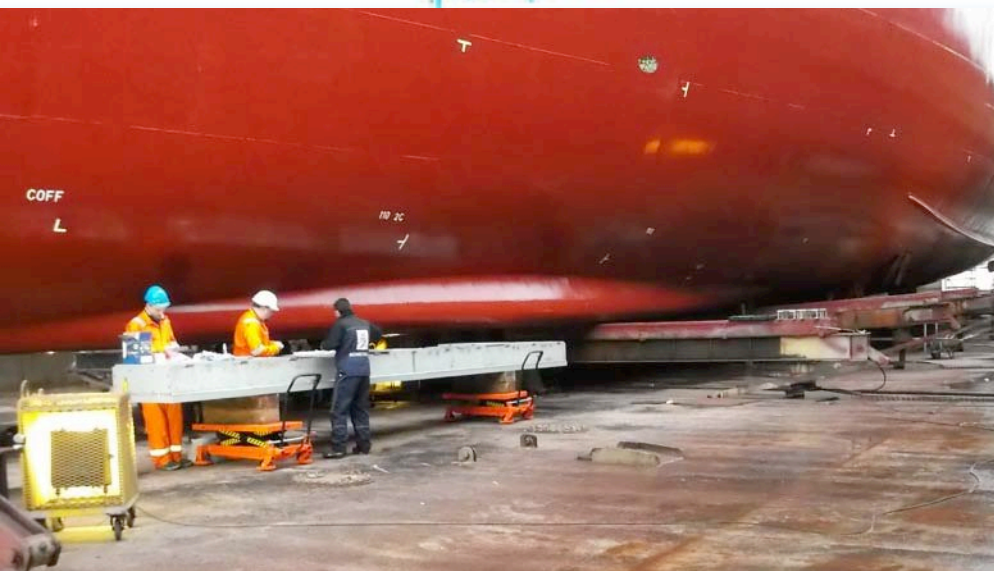
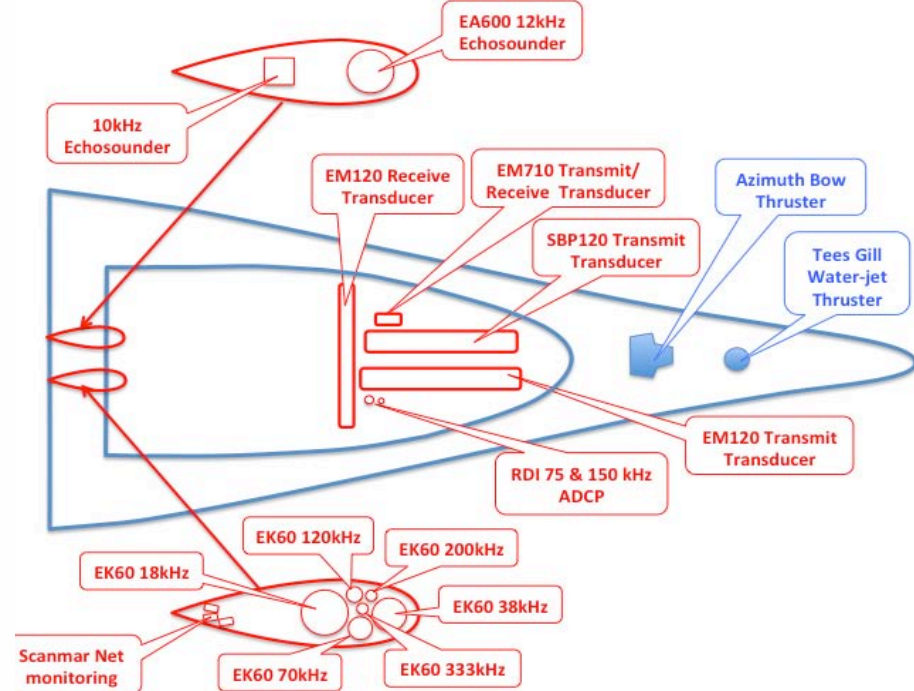
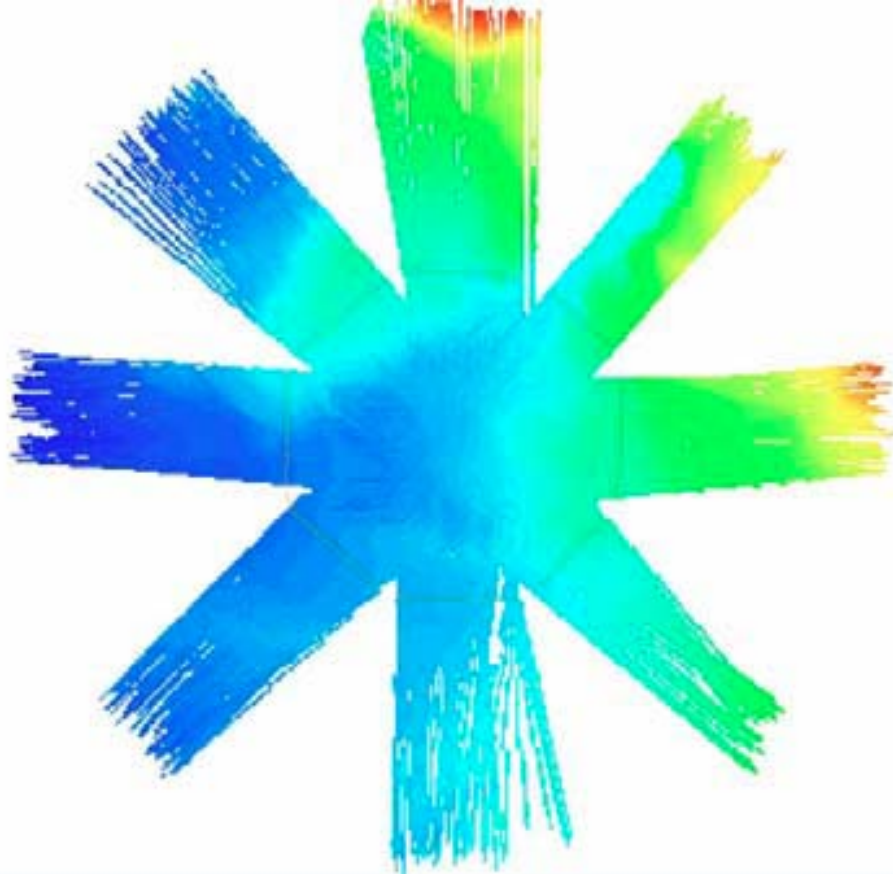




# Lower Deck

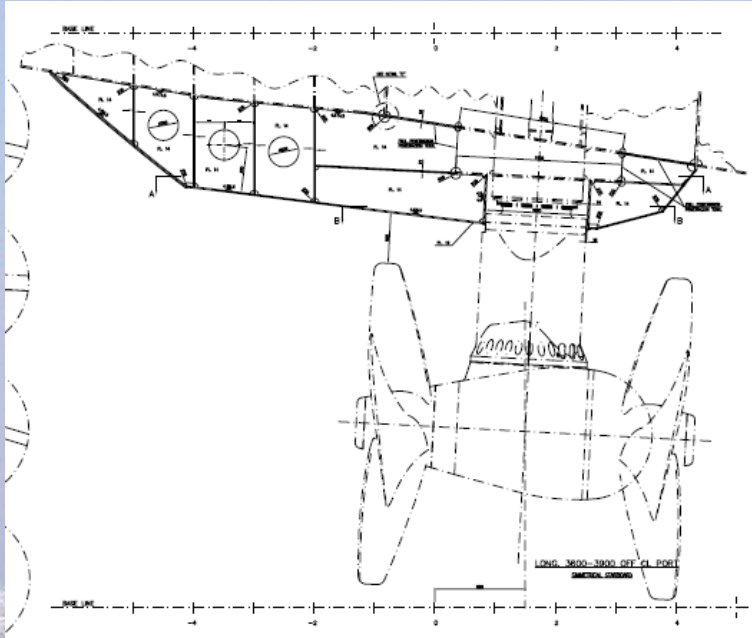






# RRS Discovery Issues1 – Propulsion

- Modifications to main azimuth thruster headboxes in Vigo
- Engine Modes:
  - Speed mode - 50% order will give 50% rpm according to speed ref motor = unstable load
  - Power mode - 50% order will be 50% power (KW) ref to motor power = stable load
  - Cook has both modes, Discovery only has Speed Mode.





# RRS Discovery Issues 2 – Winches

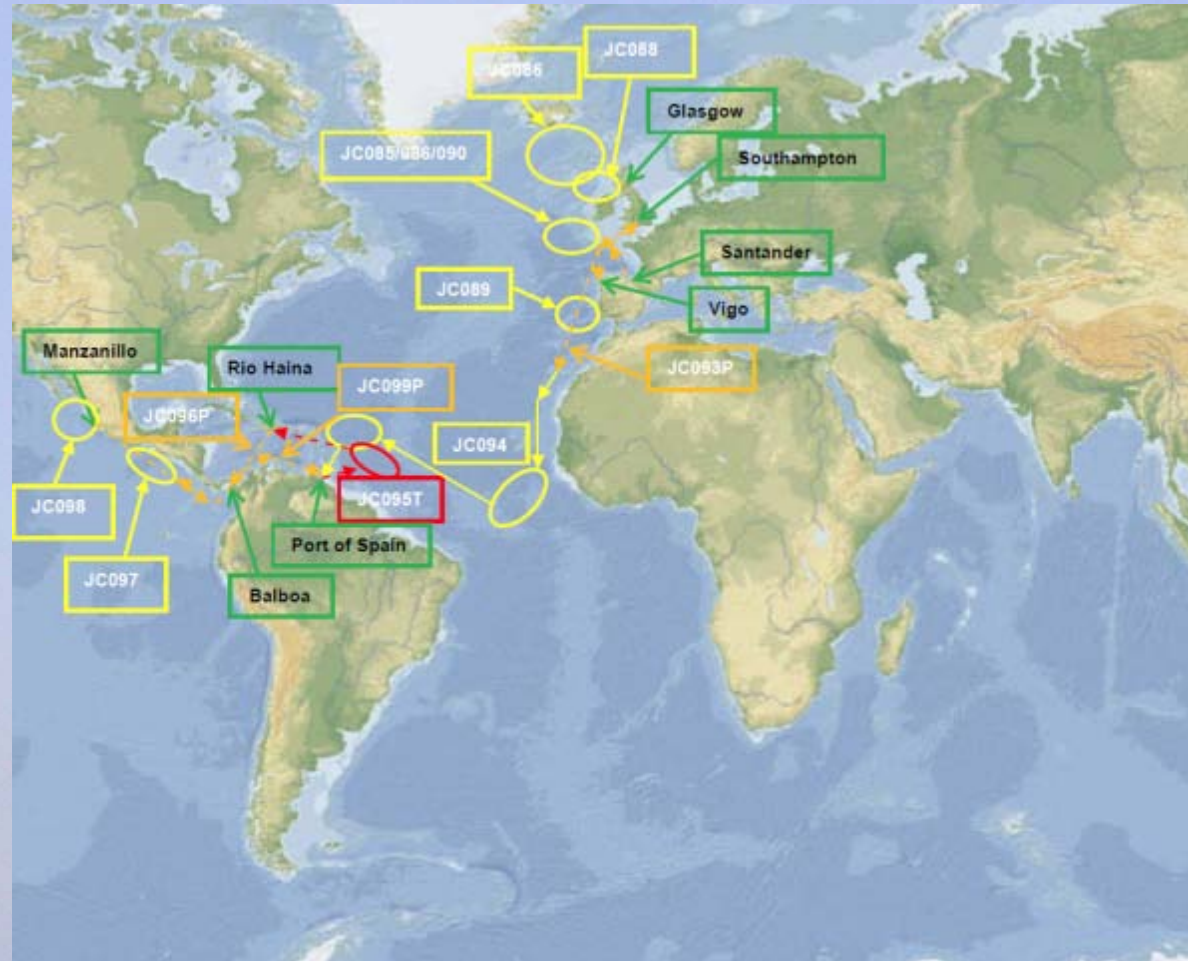
- Cooling
- Spooling
- Gearbox/brakes





# James Cook Programme 13/14

*RRS James Cook*  
N Atlantic  
Equatorial Atlantic  
Caribbean  
E Pacific





# Unmanned Surface Vehicles

- Long Endurance Marine Unmanned Surface Vehicle (LEMUSV)
- NERC and the DSTL SBRI competition, in partnership with the Technology Strategy Board
- Target: 90 day endurance with 10kt over 100NM 'sprint'
- 6 x £50k concept studies awarded 2012
- Down-selected to ASV Ltd. and MOST Ltd. 2013
- Initial prototype trials Portsmouth Harbour Dec 2013
- 2<sup>nd</sup> trials Scotland Feb 2014
- Large experiment in Autumn comprising:
  - 2 x LEMUSV
  - 2 x Slocum gliders
  - Seabed array
  - UAV (TBC)





# International Research Ship Operators (IRSO)

- 2013 – St Johns
  - Hosted by Memorial University, Newfoundland
- 2014 – Nantes
  - Hosted by Ifremer
  - 9-12 September



- 2nd International Ocean Research Conference (IORC), “one planet one ocean”
  - One hour long film on work of the world’s research vessels
  - The film will be shown in Barcelona, Nov 2014.

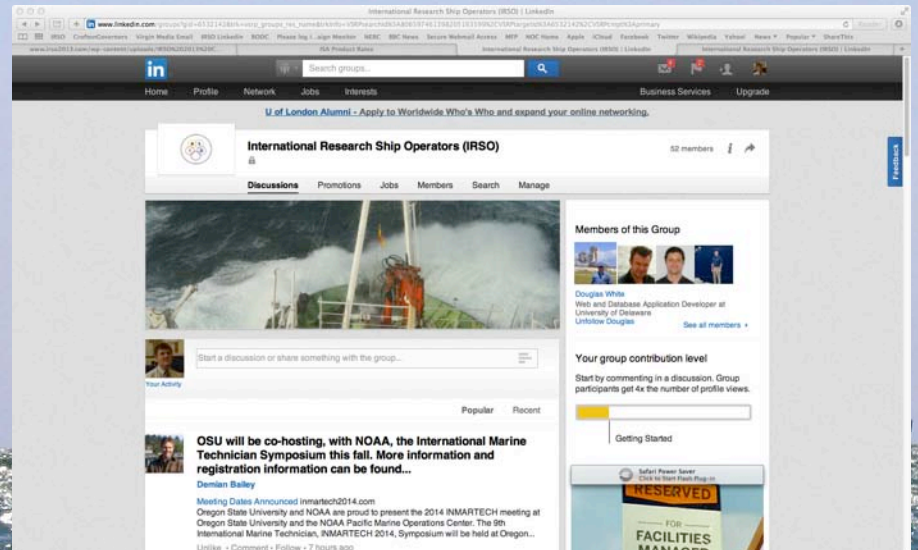
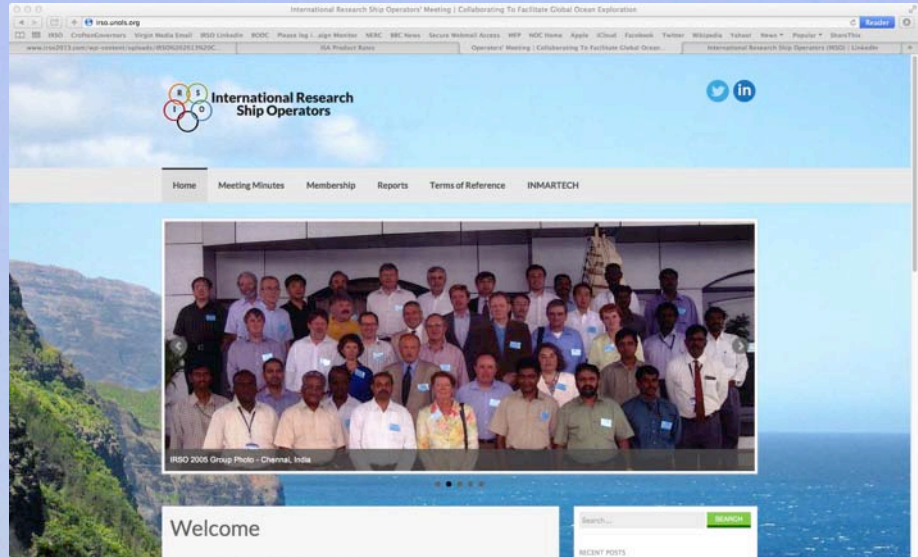




# IRSO On-Line

- <http://irso.unols.org>


- LinkedIn



# RRS Discovery Build

RRS *Discovery* – how to build a research ship in two minutes... (June 2011 – April 2013)



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Photo: Steve Hall, NOC