

ROYAL RESEARCH SHIP DISCOVERY FROM BUILD INTO SERVICE

LEIGH STOREY
HEAD OF SEA SYSTEMS
NATIONAL OCEANOGRAPHY CENTRE

IRSO 2015
SCRIPPS INSTITUTE OF OCEANOGRAPHY, UC SAN DIEGO



**National
Oceanography Centre**
NATURAL ENVIRONMENT RESEARCH COUNCIL

noc.ac.uk

Objectives

- 2013/14 – issues during build, during trials, during science
- 2014/15 – what we did and didn't do
- 2015/16 – doing the science
- 2016/17 – final verification periods

New RRS Discovery – Outline

- L 99.7m, B 18m, D 6.5m
- 6260 displacement
- Scientific Transit Speed – 12 kts max
- 23 Officers & Crew
- 28 Scientists & Technicians
- DP Capable SS6/7
- Multidisciplinary
- Multibeam(s) & Sub Bottom profiler
- Minimal Ice Class – for hull life (Lloyds 1D)
- Overside/overstern lifting - 20tonnes
- 50 days endurance



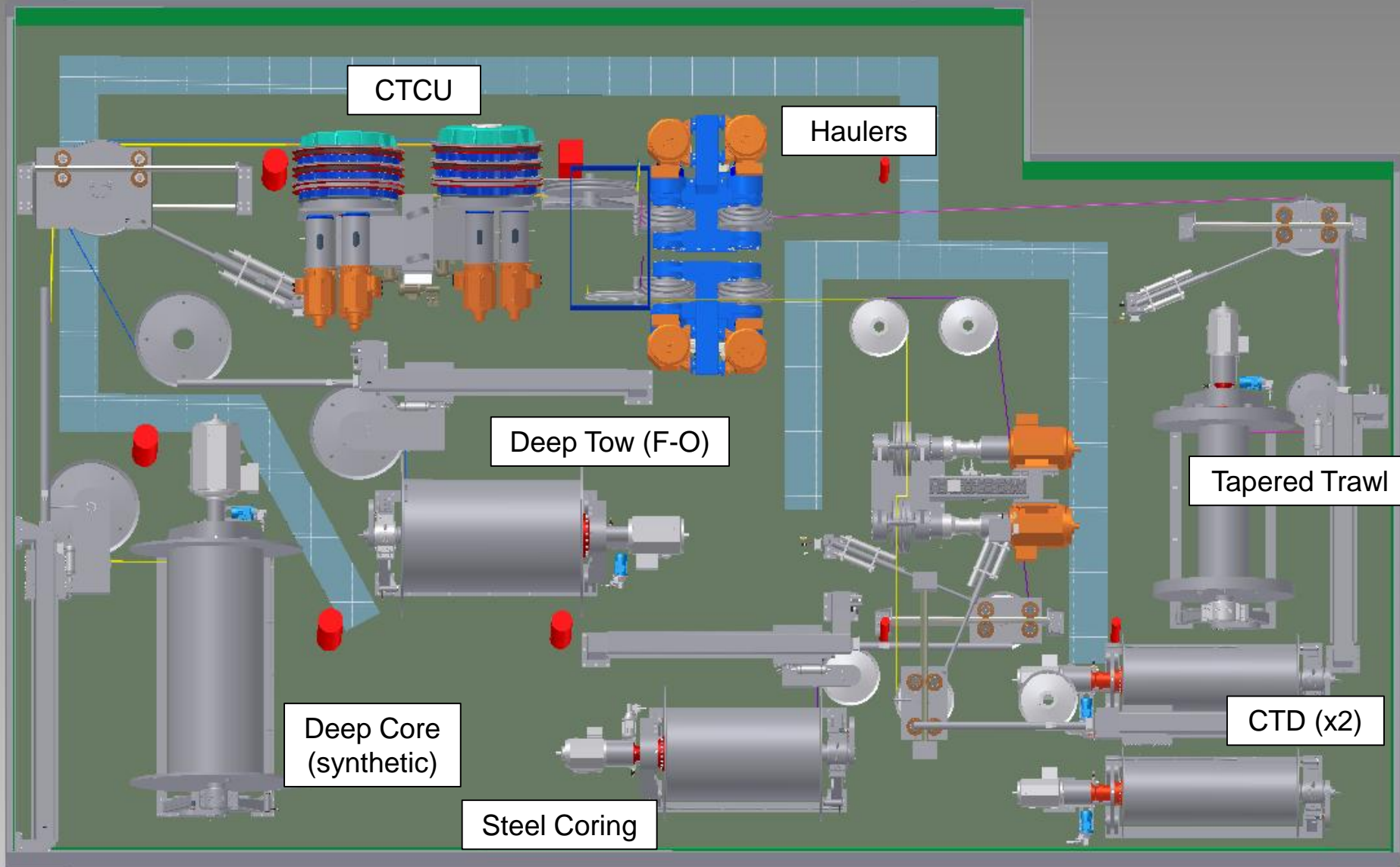
Azimuth Thruster Propulsion

Drop Keels

Multibeam Blister

Azimuth Thruster

'Jet' Thruster



2013/14 - Issues during build

2010

2013/14 – Issues during build

2010

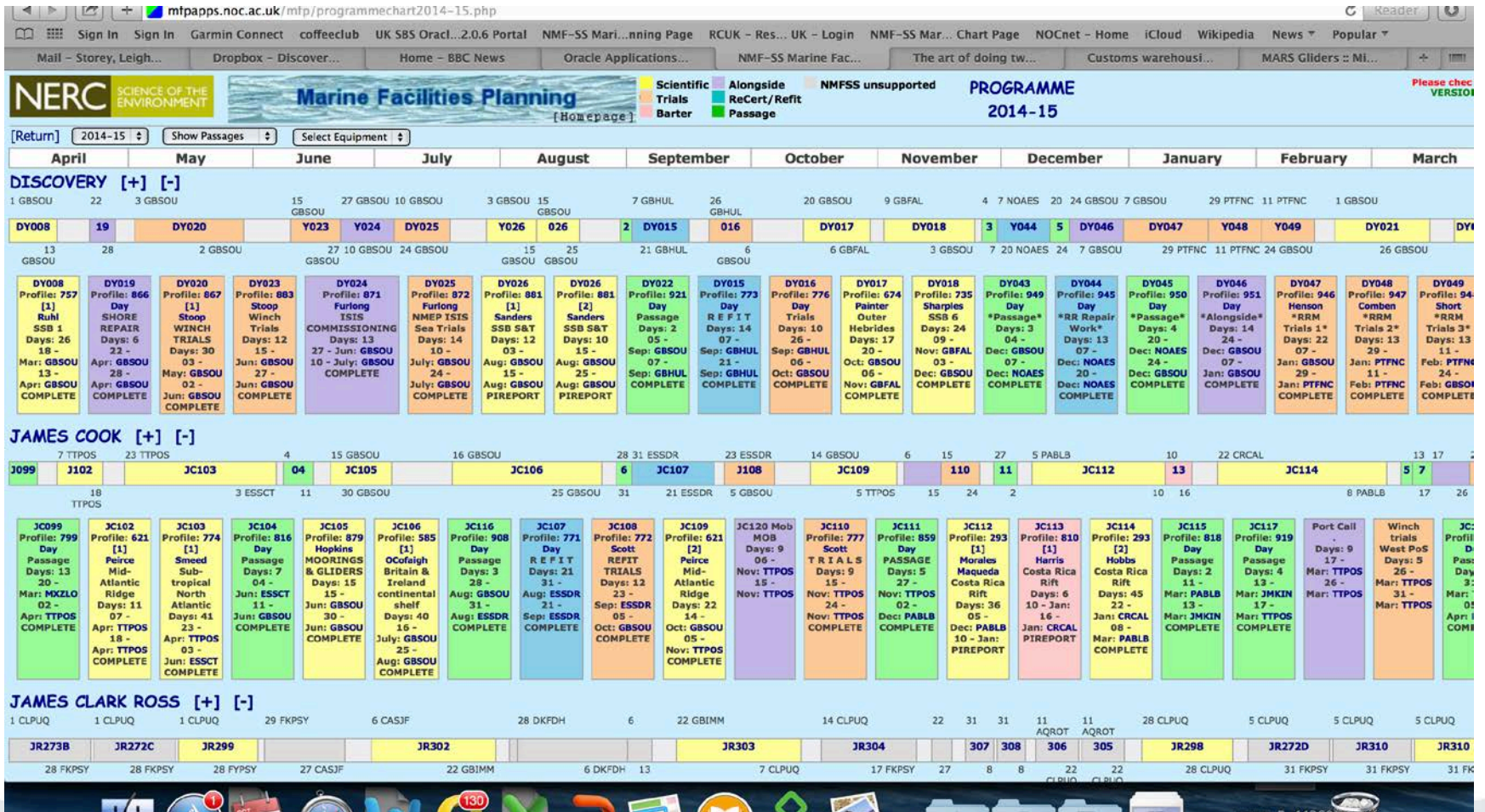


2013/14 – Issues during trials

- Failure of the GP winch traction winch drive coupling
- Overheating of the deep tow storage drum non drive end bearing
- Cooling problems with the storage drum drive end bearings on the CTD1, CTD2 and trawl winches
- Spooling problems with the synthetic deep core winch/rope
- Outstanding commissioning problems with the metal-free CTD winch

- A number of common system faults across the systems such as;
 - Bearings overheating (misalignment)
 - Cooling systems & drive unit alignments
 - Lack of stern cable runs (CTD & Core)

2014/15 – what we did



2014/15 – what we did



2015/16 – doing the science



2015/16 – doing the science

- In February 2015 the RRS Discovery sailed on the first of a series of scientific expeditions:
 - 5 Shelf Seas Biogeochemistry expeditions around the Celtic Sea (2 pelagic, 3 benthic)
 - 4 long term time series mooring and physical oceanography expeditions (Ellet Line, RAPID, Porcupine Abyssal Plain)
- Several hundred CTD dips with ships fitted and trace metal free winch ranging from 50m to 4000m depths
- Several hundred coring dips with the “General Purpose” winch
- Net tows with the trawl winch
- Camera deployments with the Deep Tow wire (Optical/Electrical).

2016/17 – final verification periods

- Commissioning of piston coring system to be completed.
- Commissioning of seismic operations to be completed.
- Commissioning of ROV operations to be completed.

2016/17 – final verification periods

NERC SCIENCE OF THE ENVIRONMENT		Marine Facilities Planning										PROGRAMME 2016-17																																															
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Please check the MFP web site for the latest information VERSION : Last modified on 22-06-2015 at 12:30:30 Accuracy, date modified, printing - more																																																											
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Key Points

- Handling of stakeholders – internal and external
- Timing of revised options – risk management
- Costs – loss of income
- Read the small print on the warranty – OEM relationships

