Update for UNOLS Council

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March 2020
AGOR 23 Class Service Life Extension Program

The Global Class ships *Thompson G. Thompson* (1992), *Roger Revelle* (1996), and *Atlantis* (1997) had a 30 year design life

- ONR is focused **primarily on life extension** of the basic ship (hull, mechanical, electrical) – extending the 30 year service life to 45 years
- Ensuring reliability, maintainability and regulatory compliance are key parts of the primary goal
- Science upgrades, making ships green are **secondary goals**
Good Intentions: Roger Revelle Midlife Refit

- Modern propulsion
- Improved electrical generators
- New, better bow thruster
- Updated safety systems
- New scientific capabilities
- Reduced criteria emissions
- Water quality

R/V Roger Revelle, Hobart 2015
# Schedule: R/V Roger Revelle Midlife

## One

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March 17- April 10 Dock Trial

April 13- April 24 Sea Trial

April 29 Vessel Delivery
Diesel and Generator Rotation Mismatch

Caterpillar diesel engine and Siemens generator each manufactured to run counterclockwise, but no agreement on orientation

This required replacement of generator internal fan

~ Two week schedule delay
#3 Generator Rotor Shaft Damage

#3 generator coupling very hard to remove

Generator shaft found damaged after coupling removed

Not repairable, manufacture replacement 6 months
During install of Auxiliary Sea Water Pump Inlet & Outlet Piping on 3516C generator sets, Vigor questioned drawings orientation of connections to Peterson CATERPILLAR Inc.

Peterson confirmed that the orientation in their supplied drawings were correct. During commissioning of the engines, Peterson’s onsite representatives questioned the orientation and Vigor contacted Peterson again.

Once again, Vigor was assured orientation on drawings was correct.

Just prior to engine start up, Vigor received notification that drawings were incorrect.

Result: several day delay to diesel testing to correct
We recognize value added by US Coast Guard and classification society oversight. Their activities after arrival at shipyard add uncertainty to cost and schedule.
Fire barriers must never be defeated by penetrations.

USCG review every visit.

Final transits will be fully blocked with conforming material.

Network wires in galley

New propulsion cables
Reasons for Hope

• Strong federal partners
• Highly detailed work specification resulted in shipyard hitting the decks running
• Engineering completed prior to production work
• Scripps and Vigor formed beneficial relationship
• Additional 15-20 years ship life
Modern Power Is Also Greener

New clean EPA Tier III diesels replace old Tier I
Reduce emissions from each engine by two-thirds
Bow Thruster

Original equipment: Tees White Gill Model 50T3S
Bow Thruster

New: ZF Marine Retractable L-Drive
Model AT 5011 RT TT-FP

Retracted:
tunnel thruster for maneuvering in port

Extended:
360 degree azimuth thruster
Better dynamic positioning
less prop noise, more power
Ballast Water Treatment System: Green

Model AT 5011 RT TT-FP

New: ZF Marine
Retractable L-Drive
Retracted: tunnel thruster for maneuvering in port
Extended: 360 degree azimuth thruster
Better dynamic positioning, less prop noise, more power
Gondola = Better Sonar Performance

Gondola home for new EM124, EM712, EK80 and HDSS sonars

- 44 feet long x 17 feet wide
- 36 inches deep
- Quiet platform, rejects bubbles

R/V Roger Revelle
Gondola
View from bottom looking up
Gondola = Better Sonar Performance

Gondola coming in for landing

HDSS installation
Questions?