

# US Navy Oceanographic Research Facilities

Brief to IRSO Meeting

October 2015





# THE ONR RESEARCH FLEET

Retired 2014 – Transferring to Mexico



**R/V Knorr (AGOR-15)**  
Woods Hole Oceanographic Institution  
To be relieved by R/V Neil Armstrong

Delivery Sept 2015



**R/V Neil Armstrong (AGOR-27)**  
Woods Hole Oceanographic Institution  
Christening 29 Mar 2014  
Delivery Jan 2015

Delivery Apr 2016



**R/V Sally Ride (AGOR-28)**  
Scripps Institution of Oceanography  
Christening 9 Aug 2014  
Delivery 2015

Retired 2014- Transferring to Philippines



**R/V Melville (AGOR-14)**  
Scripps Institution of Oceanography  
To be relieved by R/V Sally Ride



**R/V Atlantis (AGOR-25) & Alvin**  
Woods Hole Oceanographic Institution

- Navy research ships have global reach - regular two year expeditions
- Science teams rotate to ship for 18-25 day projects
- Navy owned ships have been scheduled via UNOLS since 1972
- Navy ships in UNOLS average 280 days/yr operations
- Daily operations costs are recovered via a "day rate" charged to agency research
- NSF is the major user, then Navy, NOAA, USGS, DOE
- Crews are university employees and professional mariners



**R/V Kilo Moana (AGOR-26)**  
University of Hawaii



**R/V Thomas G Thompson (AGOR-23)**  
University of Washington



**R/V Roger Revelle (AGOR-24)**  
Scripps Institution of Oceanography



**R/P FLIP**  
Scripps Institution of Oceanography

# ONR Research Fleet

- 6 oceanographic research vessels
  - Average, annual usage = 1500 days @ \$35-40K/day
  - NSF largest user, ONR, NOAA, NASA,
- 1 **F**loating **I**nstrument **P**latform – FLIP (1962)
  - Scripps-built and operated
  - Acoustics and air-sea interaction experimentation
- 1 Deep Submergence Vessel – ALVIN (1964)
  - Woods Hole-built and operated
  - NAVSEA-certified to 4500m
  - NSF funds major use; funded major overhaul and upgrade in 2013; potential future capability to 6500m

# AGOR 23 Class Mid-Life Refit (MLR) and Service Life Extension Program (SLEP)

- Planned projects for MLR/SLEP:
  - Propulsion and Electrical Replacement -
  - Bow Thruster Overhaul -
  - Alarms, monitoring, positioning upgrades -
  - Seawater, ballasting improvements -
  - Firefighting systems upgrade -
  - HVAC/potable water/refrig upgrades -
  - Ship hardware and systems overhaul -
  - Scientific support systems –
- THOMAS G THOMPSON: June 2016

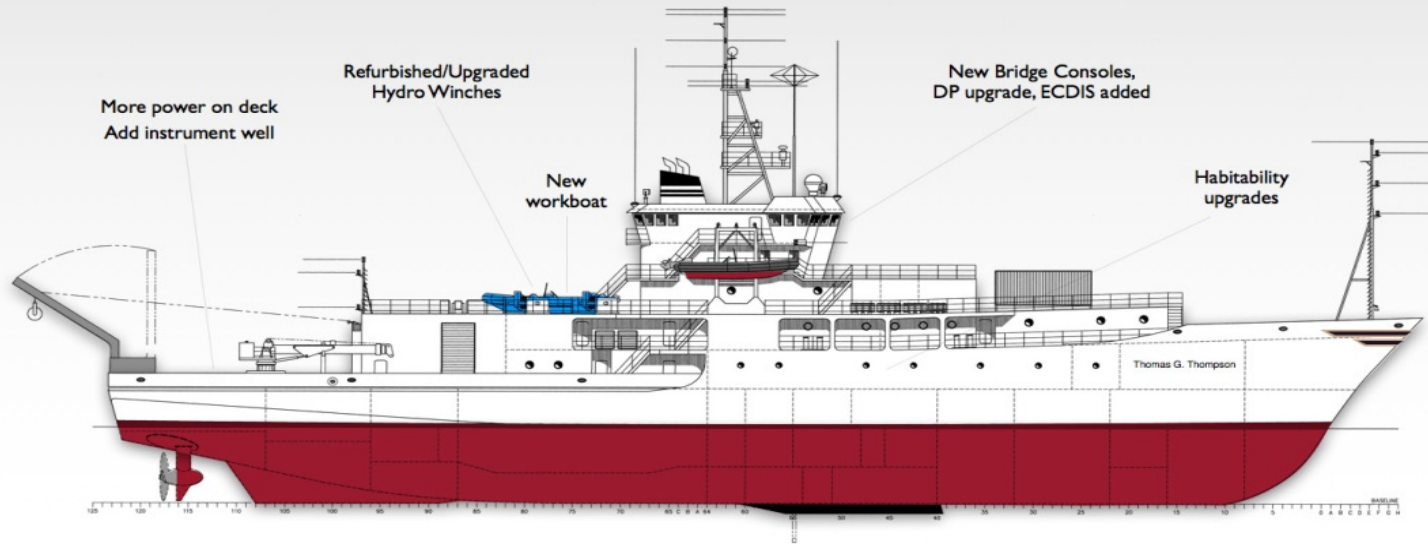




# Office of Naval Research



## Thompson Mid-life Refit Service Life Extension



### RE-POWERING

- ✓ new engines
- ✓ alternators
- ✓ switchgear
- ✓ drives
- ✓ alarm/monitoring
- ✓ controls

### ENGINEERING SYSTEMS UPGRADES

- ✓ A/C Plant replacement
- ✓ Firefighting systems upgrades
- ✓ RO Watermaker replacement
- ✓ Sewage system upgrades

### SCIENCE SENSOR UPGRADES

- ✓ EM-302 upgrade
- ✓ Add 300 Hz ADCP

### LAB SPACE IMPROVEMENTS

- ✓ Lab Lighting/Decks/Ventilation
- ✓ Remove Hydro-sweep

# Ocean Class AGOR *R/V's Neil Armstrong & Sally Ride*



# Status on Test, Trials and Delivery

- *R/V Neil Armstrong (AGOR 27)*
  - *Completed Builder's Sea Trials in May*
    - *Completed - Vendor Grooming, power runs, maneuvering runs, and noise & vibration measurements. Also completed DP Grooming and Trials and further propulsion system grooming. Conducted dock tests of winches and handling systems.*
    - *Mock INSURV completed with some demonstrations redone or deferred to June/July*
    - *May 6-8: SONAR Self Noise testing cruise to waters outside Puget Sound,*
      - *Some bubbles when headed into seas (SS3-4) with pitching; cavitation from leading edge of bilge keels (easily fixable) and some cavitation from props that may be caused by raised bolt heads and keeper bar (needs further investigation). Bilge keels modified and tested successfully this past week. Propeller cavitation still present.*
  - *August 3<sup>rd</sup>: Acceptance Trials, Navy INSURV*
  - *September 23<sup>rd</sup>: Delivery*
  - *September/October: Fitting Out Availability, USCG Inspection*
  - *October 31: UW for transit to east coast shipyard with stops in S.F. and Panama.*
  - *December – February: Installation of Acoustic Mission Equipment and testing at shipyard to be determined.*
  - *February – April: Further outfitting, shakedown and Science Verification Cruises.*
  - *April: Final Contract Trials and UNOLS inspection – designation as UNOLS Vessel*
  - *May – December: Science Operations and further Science Verification Cruises.*
  - *Oct/Nov: Post Shakedown Availability*

# Test, Trials and Delivery

- R/V *Neil Armstrong* (AGOR 27)



## *R/V Sally Ride (AGOR 28) - Planned Schedule*

- Currently undergoing final outfitting, equipment commissioning and testing*
- Builder's trials to start in January 2016*
- Early March 2016– Acceptance Trials, Navy INSURV*
- Late April 2016 Planned Delivery*
- April – June: Fitting Out Availability and installation of Acoustic Systems & Mission Equipment. Actual Schedule and location of Mission Equipment Installation still to be determined.*
- Summer 2016: Transit to San Diego, further outfitting, shakedown and science verification cruises*
- Science Operations towards the end of the year 2016*

# Construction Progress

- R/V *Sally Ride* (AGOR 28)



# Questions?

