UNOLS Report

to the

Scientific Committee for Oceanographic Aircraft Research

Mike Prince
UNOLS Executive Secretary

May 24, 2006
CIRPAS
Marina, CA
I. Budget Shortfalls and Impact on Future Fleet Operations
   A. Utilization and Cost Trends
   B. 2006 Fleet Utilization
   C. 2007 Fleet Projections
   D. UNOLS Subcommittee Formed

II. Academic Fleet Renewal

III. Other UNOLS Activities

IV. UNOLS Committee Activities
2002 – 2007 UNOLS Fleet Operating Days and Costs
University-National Oceanographic Laboratory System

Total Operating Costs
Total Operating Days

- 2002 2003 2004 2005 2006 2007 est

<table>
<thead>
<tr>
<th>Year</th>
<th>Total Operating Days</th>
<th>Total Operating Costs</th>
</tr>
</thead>
<tbody>
<tr>
<td>2002</td>
<td>60,851,200</td>
<td>4,913</td>
</tr>
<tr>
<td>2003</td>
<td>64,150,919</td>
<td>4,872</td>
</tr>
<tr>
<td>2004</td>
<td>71,805,970</td>
<td>5,391</td>
</tr>
<tr>
<td>2005</td>
<td>65,516,669</td>
<td>4,738</td>
</tr>
<tr>
<td>2006</td>
<td>68,491,293</td>
<td>4,023</td>
</tr>
<tr>
<td>2007</td>
<td>64,043,150</td>
<td>3,245</td>
</tr>
</tbody>
</table>
Fleet Utilization by Federal Agency

**University-National Oceanographic Laboratory System**

![Graph showing fleet utilization by federal agency from 2000 to 2007.](image)

- **NSF** = funded
- **NAVY**
- **NOAA**
- **Other** = Funded & Pending

*2007 estimated from requests.*
UNOLS Subcommittee Formed

University-National Oceanographic Laboratory System

- March 2006 – Council forms subcommittee to prepare guidelines that would be used by the Council to make recommendations regarding ship lay-ups or retirements from the Fleet

- **Subcommittee:**
  - Marcia McNutt (MBARI), Chair
  - Wilf Gardner (TAMU)
  - Peter Ortner (U. Miami)

- **Subcommittee Charge:** Develop a short white paper to focus UNOLS Council discussion and agreement upon an equitable and defensible process to be followed by UNOLS to arrive upon a recommendation by July 2006 as to which UNOLS vessels would be laid up in 2007 or beyond or retired.
1. Is there any difference in the operations or maintenance costs of the older Global-class ships (Melville and Knorr) versus the younger ones (Thompson, Revelle, and Atlantis)? Is there any difference in the science that can be accommodated on the older ones versus the younger ones?

2. Can the special purpose ships, such as the Atlantis and the Langseth, conduct in a cost effective manner the same programs that are usually put on the other global class ships? Or is there a major penalty paid by "filling out their schedules" with general purpose work?

3. Are there any arguments for maintaining a geographic distribution of global class ships, or is the home port immaterial in terms of meeting the community's needs?
4. What are the tradeoffs, financial and otherwise, of having many versus fewer ship operators? e.g., Is there any indication that multi-ship operations are most cost effective? Does having more operators bring in more state and other funding to the fleet?

5. What are the nominal retirement dates for each of the Intermediate class ships and how many of them are likely to be replaced?

6. Are there other values or criteria that should be used as factors in recommending lay-ups or retirements?
I. Budget Shortfalls and Impact on Future Fleet Operations

II. Academic Fleet Renewal
   A. Regional Class
   B. Ocean Class
   C. Alaska Region Research Vessel
   D. New Construction/Conversions
   E. Global Science Mission Requirements
   F. Fleet Improvement Plan

III. Other UNOLS Activities

IV. UNOLS Committee Activities
Regional Class Acquisition Status

• April 27, 2006 - Contract awards for Phase I of the Regional Class Research Vessel (RCRV) program:
  ➢ Dakota Creek Industries, Anacortes, WA
  ➢ Nichols Brothers Shipbuilders, Freeland, WA
• Phase I is preliminary/contract design - twelve month period and a firm fixed price of ~ $1 Million each.
• Phase II is detail design and construction.
• Based on proposals submitted by the two Phase I Contractors, a single Phase II contract for detailed design and construction is anticipated to be awarded at the end of Phase I (second quarter CY2007). The Phase II contract will be for a lead ship with options for up to two more.
<table>
<thead>
<tr>
<th>Date</th>
<th>Event</th>
</tr>
</thead>
<tbody>
<tr>
<td>7/2002</td>
<td>Ocean Class SMR Community Workshop</td>
</tr>
<tr>
<td>3/2003</td>
<td>Ocean Class Science Mission Requirements (SMRs) finalized</td>
</tr>
<tr>
<td>4/04-7/04</td>
<td>Ocean Class Concept Definition Task</td>
</tr>
<tr>
<td>10/04–3/05</td>
<td>Hull Evaluation (Monohull, SWATH, X-Craft)</td>
</tr>
<tr>
<td>3/05</td>
<td>UNOLS provides hull recommendation to Navy (monohull)</td>
</tr>
<tr>
<td>FY2006</td>
<td>Funds Appropriated for Ocean Class Design</td>
</tr>
<tr>
<td>Spring 06</td>
<td>Navy forms Naval Research Advisory Committee to provide recommendation regarding Navy’s role in acquisition of Ocean Class</td>
</tr>
</tbody>
</table>
Alaska Region Research Vessel (ARRV)

Length: 236 feet
Beam: 48 feet
Draft: 18 feet
Endurance: 44 days
Ice capability: 2.5 ft at 2.5 knots
Scientists: 26
Crusing speed: 12 knots

Design: complete
NSF Funding: FY07?
Completion: FY09+
Steering Committee formed to update Global Vessel General Purpose SMRs.

Incorporate Heavy Lift considerations to address ocean observatory and long coring needs.

Community On-line Survey regarding science needs – coming soon.
**New Ships Recently Constructed or Converted**

**University-National Oceanographic Laboratory System**

---

**R/V Hugh R Sharp (U. Delaware)**
- Owner – U. Delaware
- March 2006 – entered UNOLS Fleet
- Length = 146 feet
- Modular design to enhance flexibility of use.
- Design also may allow for testing and fitting to incorporate new fuel-cell technologies.
- Designed for quiet operation.

---

**R/V Marcus Langseth (LDEO)**
- Owner = NSF
- Length = 235 feet
- Ready for Service in late 2006.
- Will operate Globally in support of seismic operations and general purpose research.
- Geophysical capabilities include a sound source array towed in four "strings" that can be configured either as a single, 2D source or dual, alternating 3D source arrays.
R/V Atlantic Explorer begins operations at Bermuda Biological Station for Research

- BBSR acquired R/V Seward Johnson II from HBOI in October 2005.
- The ship underwent a modification and maintenance period
- April 2006 – Atlantic Explorer began operations from BBSR.

Ships Retired from UNOLS Fleet:
- Gyre – August 2005
- Cape Henlopen – October 2005
- Weatherbird II – December 2005
• Executive Summary / Intro

• Identify Future Science Initiatives – includes Major Science Disciplines, Education/Outreach, and Cross cutting initiatives.

• Current Fleet Composition and Utilization Trends - includes updated vessel retirement dates and SLEP estimates.

• Future Fleet Projections
  • Evaluate other future facility projections (Ocean observatory, Event Response, etc)
  • Other Facilities – aircraft, deep submergence facilities
  • Define Future Fleet Composition

• Fleet Budget Projections and Requirements

• Recommendations

Final Draft – Fall 2006
I. Budget Shortfalls and Impact on Future Fleet Operations

II. Academic Fleet Renewal

III. Other UNOLS Activities
   A. ADA Committee
   B. UNOLS Briefing Package
   C. HOV Safety Standards

IV. UNOLS Committee Activities
Americans with Disabilities Act (ADA) Guidelines for Research Vessels

Background:

• NSF has indicated the need for new ship construction and ship conversion efforts to address ADA requirements.

• Vessels that support Federally funded academic research should be equipped and arranged as feasible to accommodate persons with disabilities.

• In turn, procedural guidelines to carry out shipboard operations by persons with disabilities are needed.
Tasks:

• Draft Preliminary ADA Guidelines for the Regional Class Acquisition effort. (Need ASAP)

• Convene a Workshop (if needed) to define shipboard and procedural guidelines required to accommodate sea-going scientists with disabilities.

• Establish General ADA Guidelines for new ship construction/conversion.

• Draft procedural guidelines for at-sea research operations by seagoing scientists with disabilities.
Membership:

- FIC Member - Terry Whittedge (UAF) [Chair]
- Risk Manager - Dennis Nixon (URI)
- Marine Superintendent & FIC – Al Suchy (WHOI)
- *Langseth* Conversion Rep & FIC – Jim Cochran (LDEO)
- RVTEC Representative – Joe Ustach (Duke)
- Seagoing scientists with disabilities – Amy Bower (WHOI) and Terry Glover (contributing member)
- Ship Master – Eric Buck (SIO)
- UNOLS Safety Committee Rep – Matt Hawkins (UDel)
- David Chapman (UDel)
- Ex-officio members – agency reps
1) What is UNOLS? Description of UNOLS. Committee structure and tasks. Ships descriptions, distribution, and utilization.

2) Status of the UNOLS fleet today and challenges in terms of:
   1) Funding shortfalls and consequences
   2) Future oceanographic scientific community needs: OOI and IOOS etc.

3) Fleet Renewal – Plans and Status

4) Discussion topics:
   1) How to stay on top of the planning process
Outline of Presentation

University-National Oceanographic Laboratory System

I. Budget Shortfalls and Impact on Future Fleet Operations

II. Academic Fleet Renewal

III. Other UNOLS Activities

IV. UNOLS Committee Activities
   I. RVOC
   II. RVTEC
   III. AICC
   IV. DESSC
   V. MLSOC
Research Vessel Operators’ Committee

- Annual Meeting – April, 25-27, 2006 at U. Washington (Deb Kelley guest speaker)
- Issues addressed and activities:
  - Update of Research Vessel Safety Standards
  - Security plans, Safety, and ISM
  - Uniformity for port and EEZ fees (who pays for what – science v.s. operator)
- Alcohol, Drugs, and Sexual Harassment Policies

Research Vessel Technical Enhancement Committee

- Annual Meeting and INMARTECH 2006 – October 16-19, 2006, WHOI
  - Includes session on Advanced Instrumentation and Vehicle Systems.
• Arctic Icebreaker Coordinating Committee
  – HEALY U/W for 2006 Field program
  – AICC providing prioritized recommendations for instrumentation, science support and science space utilization based on debriefs with PI’s
  – Starting to think about long term upgrades such as multibeam replacement
Meeting on May 24-25, 2006 at Woods Hole Oceanographic Institution – The agenda includes:

- Feedback from science users of the National Deep Submergence Facility vehicles
- NDSF Operator report on vehicle upgrades, improvement plans, schedules, and operations.
- New Facility Updates:
  - Replacement Human Occupied Vehicle (2009 estimated completion)
  - Hybrid ROV – (Ready for service in 2007)
  - AUV Sentry

Other DESSC Activities:

- Establishing Criteria for Adding Assets to the NDSF
- Formed Subcommittee to establish HOV Safety Standards
• New UNOLS Standing Committee – Formed in October 2005

• Membership:
  – Dr. Steven Holbrook, U of Wyoming (MLSOC Chair)
  – Dr. Michael Enachescu, Memorial University of Newfoundland
  – Dr. Graham Kent, Scripps Institution of Oceanography, UCSD
  – Dr. Nancy Grindlay, University of North Carolina at Wilmington
  – Dr. Mitch Lyle, Boise State University
  – Dr. Ray Schmitt, Woods Hole Oceanographic Institution
  – Dr. Peter Tyack, Woods Hole Oceanographic Institution
  – Dr. H. Paul Johnson, University of Washington
  – Dr. Peter Littlewood, Shell International Exploration & Production, Inc
  – Dr. Tom Shipley, University of Texas IG

• First Meeting - 31 May and 1 June at the Shelburne Nova Scotia shipyard. (Joint with ERROC)