FIC Roadmap for the Future

What future activities should FIC take on? Some considerations:

- Projected service life end dates:
  - Agency representatives are evaluating ship conditions during inspections.
  - Some vessels are at or approaching their projected end of service life

Are new projections needed?

Projected Service Life End Dates: by 2015

SHIP/CLASS	BUILT	Conv/ Mid Life	2008	2009	2010	2011	2012	2013	2014	2015
Global Class										
Melville	1969	1991	----	----	----	----	----	----	--R	
Knorr	1970	1989	----	----	----	----	----	----	----	--R
Intermediate Class										
Seward Johnson	1985	1994	----	----	----	----	----	----	----	--R
Wecoma	1976	1994	----	----	--R					
*Endeavor *	1976	1993	----	----	--R					
Oceanus	1976	1994	----	----	--R					
Regional Ships										
Point Sur	1981		----	----	----	--R				
Cape Hatteras	1981	2004	----	----	----	--R				
Regional/Coastal Ships										
Robert Gordon Sproul	1981	1985	----	----	----	----	----	----	----	--R
Pelican	1985	2003	----	----	----	----	----	--R		
Local Ships										
Blue Heron	1985	1999	----	----	----	----	----	----	----	--R
Clifford Barnes	1966	1984	----	----	----	----	----	--R		

OOI Estimated Days at Sea - October 2009 Update

Infrastructure	Vessel Class	Days at Sea by year							
		2010	2011	2012	2013	2014	2015	2016	2017
		Construction					Operations		
Atlantic									
Pioneer Array	Intermediate				18	18	18	18	18
Pioneer Array	< 80 ft.			4	12	12	12	12	12
Irminger Sea	Global				28	28	28	28	28
Argentine Basin	Global				24	24	24	24	24
Pacific									
Regional Scale Nodes	Global+ROV	28			64	59	40	40	40
Station Papa	Global			0	22	22	22	22	22
Southern Ocean	Global					24	24	24	24
Endurance Array	Global+ROV		0	0	0	5	5	5	5
Endurance Array	Global					8	8	8	8
Endurance Array	Intermediate	5	1	9	0	30	22	22	22
Endurance Array	< 80 ft.					54	54	54	54
Global testing	Intermediate	3							
	Global	3							
Total by vessel class									
UNOLS	Global	3	0	0	74	106	106	106	106
	Global+ROV	28	0	0	64	64	45	45	45
	Intermediate	8	1	9	18	48	40	40	40
	< 80 ft.	0	0	4	12	66	66	66	66

THE NATIONAL

DIVISION ON EARTH AND LIFE STUDIES

Science at Sea:
Meeting Future Oceanographic Goals
with a Robust Academic Research Fleet

Briefing for the Office of Naval Research

and National Science Foundation

Ronald Kiss and RADM Richard Pittenger, *Co-Chairs*

Committee on Evolution of the National

Oceanographic Research Fleet

October 13, 2009

THE NATIONAL ACADEMIES
Advisers to the Nation on Science, Engineering, and Medicine

National Academy of Sciences
National Academy of Engineering
Institute of Medicine
National Research Council

Recommendation

Federal agencies supporting oceanographic research should implement **one comprehensive, long-term research fleet renewal plan** to retain access to the sea and maintain the nation's leadership in addressing scientific and societal needs.

Recommendation

All future UNOLS ship acquisitions, beginning with the planned Ocean Class vessels, should **involve the scientific user community** from the preconstruction phase through post delivery of the ship.

Larger, Capable Ships

Recommendation

The future academic research fleet requires investment in **larger, more capable, general purpose Global and Regional** class ships to support multidisciplinary, multi-investigator research and advances in ocean technology.

NATIONAL ACADEMIES

Recommendation

NOAA should identify which of its 13,200* unmet annual ship day needs could be supported by the UNOLS fleet. **NOAA and UNOLS should work together** to develop a long-term plan to increase the usage of UNOLS ships in support of the NOAA mission.
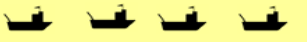
*As identified by the NOAA Office of Marine and Aviation Operations in their 2008 Ship Recapitalization Plan

Recommendation

The NSF Division of Ocean Sciences, NSF Office of Polar Programs, and the U.S. Coast Guard should **improve coordination** of ship operations and support between the UNOLS and polar research fleets.

FIC Roadmap for the Future

- The composition of the Fleet is changing – ships are being removed from service, new ships are planned.

	2008	2025
Global Class		
Ocean Class		
Intermediate Class		
Regional Class		
Regional/ Coastal Class		
Local Class		
Total Ships	23	14
Total Berths	492	331
Available Capacity	5085	3270

23 ships in 2008 → 14 ships in 2025
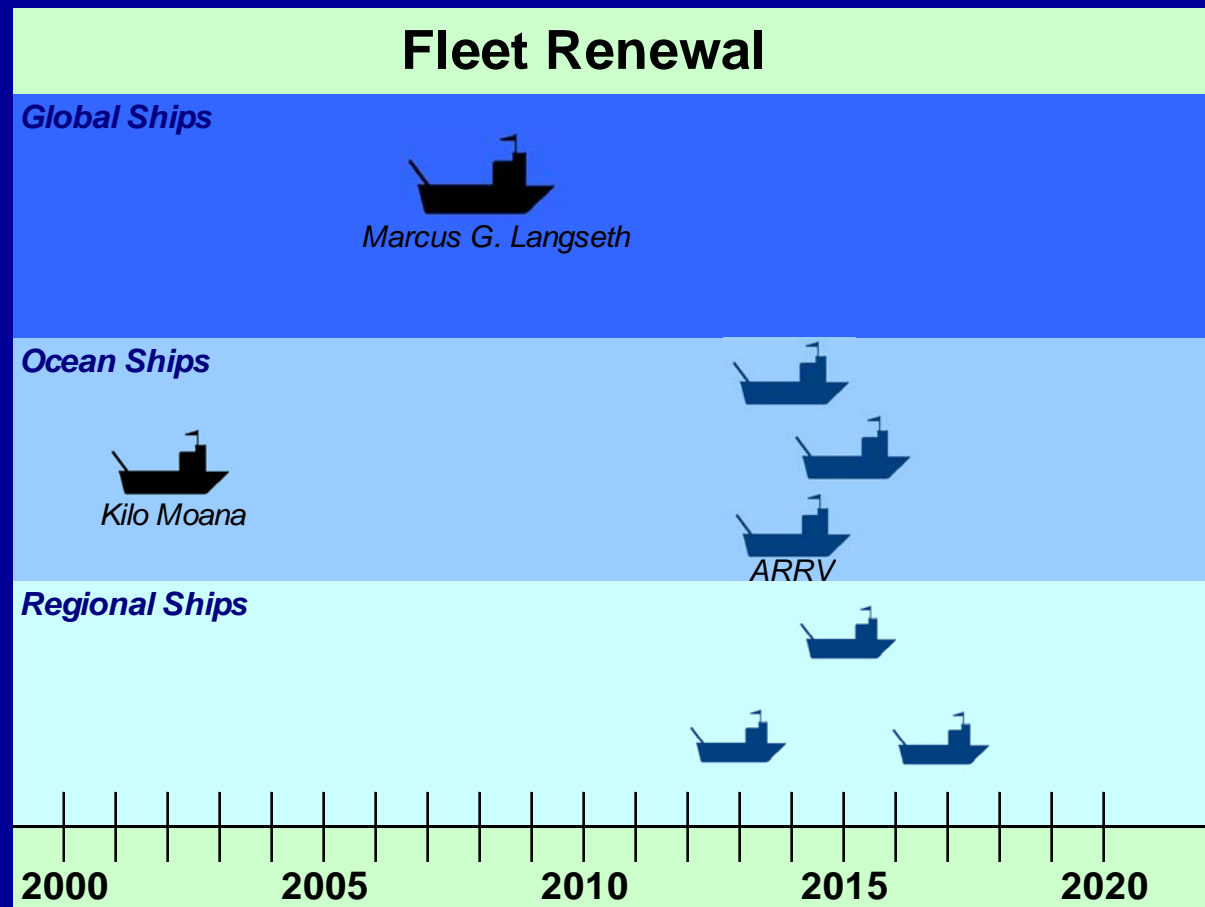From 5085 ship days → 3270 in 2025
By 2017, all Intermediate size ships and all but one Local Class ships will be retired.
By 2025, there will be three Global class ships.

FIC Roadmap for the Future

- Greening the Fleet

- FIP Recommendation:

  – We recommend that UNOLS, the federal agencies, and individual operators consider how to make the present and future fleet more environmentally sustainable. New and existing technologies and practices should be used in the construction, operation, and recycling of research vessels and UNOLS should take a leadership role in promoting a green U.S. research fleet, as we move forward in developing the academic fleet.

No new vessel acquisitions are planned during the period 2015-2020 – Who and how do we fund new Global Class vessels

Fleet Renewal

Global Ships

Marcus G. Langseth

Ocean Ships

Kilo Moana

ARRV

Regional Ships

2000   2005   2010   2015   2020

FIC Roadmap for the Future

- Large shared-use facilities with designated support platforms (ex. Long Core Facility)
- Are there any tasks that the Agency Representatives would like the FIC to take on?
- Are there any Council tasks for FIC?

Back-up Slides

Fleet Improvement Plan Recommendations

- To realize the U.S. Commission on Ocean Policy recommendation for strong support for ocean research, including ample access to modern research vessels, the UNOLS fleet must increase beyond the current projected levels detailed in the *Federal Oceanographic Fleet Status Report* [Interagency Working Group on Facilities (IWG-F)].

- The Federal agencies should continue the fleet renewal activities that are currently underway (the Alaska Region Research Vessel, the three Regional Class ships, and the two Ocean Class ships), under the timeline shown in the 2007 *Federal Oceanographic Fleet Status Report* [IWG-F].

- Begin the process now for new ships that will be needed in 2017 and beyond. Plans for replacement of the two existing general purpose Global Class vessels whose planned end of service lift occurs by 2017, must start now. A minimum of one and preferably two new general-purpose Global Class vessel(s) should be planned for, funded, and constructed by 2018.

Fleet Improvement Plan Recommendations

- New state-of-the-art ships with technically sophisticated equipment will require more highly-trained and specialized personnel to provide technical support. Personnel strategies must be developed to improve the staffing and retention of experienced technical support personnel and crew.

- Recognizing the delays in the timelines for delivering some of the planned ships into the fleet, some of the current ships nearing their end of service life should have their service life extended and be maintained at an adequate operational level to meet near term science requirements until the new ships come on line.

- The Ocean Observatory Initiative (OOI) will place new and increased demands on the vessels of the UNOLS fleet, and on Remotely Operated Vehicles (ROVs) for operations and maintenance. As the observatory systems are installed, the planned end of service dates and geographic locations of these ships should be carefully considered to ensure that OOI ship demands can be met.

Fleet Improvement Plan Recommendations

- A capable National Deep Submergence Facility (NDSF) that includes a suite of deep submergence vehicles is required for continued support of science on the seafloor and on the mid ocean ridge systems. OOI projects new and increased demands for ROVs for support at their study sites. We recommend that planning and acquisition efforts for new deep submergence assets continue.

- If budget projections remain at the current low level, retirement of the least capable ships near the end of their service lives should be considered. Any decisions on ship retirement versus lay-ups should be made based on multi-year projections of ship time demand rather than single year figures of fleet utilization.

- The smaller (e.g., under 40 m) ships of the UNOLS fleet serve a crucial role in supporting science in our nation's coastal zone where the human impacts of development and resource use are greatest. To continue to meet current requirements for the entire academic oceanographic community, UNOLS should encourage the timely replacement of Local vessels and Coastal/Regional vessels by institutions, state governments, and regional partnerships.

Fleet Improvement Plan Recommendations

- Federal agencies that operate their own research vessels are encouraged to examine their respective fleet capacities and capabilities to ensure that the Federal fleet as a whole is optimally utilized. Ship capacity that could be used to support academic research ship demand should be identified. Issues of access, facility scheduling, and financial support of an integrated Federal fleet of vessels should be addressed as a coordinated effort between UNOLS and the Interagency Working Group on Facilities.

- We recommend that UNOLS, the federal agencies, and individual operators consider how to make the present and future fleet more environmentally sustainable. New and existing technologies and practices should be used in the construction, operation, and recycling of research vessels and UNOLS should take a leadership role in promoting a green U.S. research fleet, as we move forward in developing the academic fleet.