Date: 01 June 2012
From: NSF and ONR
To: Dr. Bruce Corliss-UNOLS Chair

Subj: 2013 U.S. Academic Research Fleet Operations Support Findings and Recommendations
Ref: Criteria and Process for Recommending Non-Operational Periods of Ships in the UNOLS Fleet, UNOLS Council - July 24, 2006.[1]

Introduction

The National Science Foundation (NSF), the Office of Naval Research (ONR), and the UNOLS Executive Secretary have participated in numerous ship scheduling meetings and conducted a thorough review of the 2013 Letters of Intent for the UNOLS global and ocean class ships. Realizing that additional funding decisions will be made over the coming weeks, and that it is relatively early in the 2013-scheduling year, based on current projections the agencies present the following outlook for 2013.

There are presently 2087 funded days across all agencies as shown in the 2013 Proposed Operating Days table below. There are 1601 pending days of which an estimated 20% (320) will likely be funded resulting in a total of 2407 days (Institution/State-128, NASA-32, Navy-151, NOAA-154, NSF-1682, USGS-20, BOEM-0, and Other-239) of proposed ship time. The available information indicates the number of proposed Fleet operating days for 2013 is significantly reduced from historical levels. Figures 1-3 illustrate the Fleet utilization trends over the past ten years and the anticipated use in 2013.

Based on the findings outlined below, several ships in the Fleet will have less than optimal schedules in 2013. As agreed to by the UNOLS Council, the document, which will guide the recommended process for making decisions regarding non-operational periods, calls for substantive recommendations to be made by the Agencies. This letter provides those recommendations. The link to the reference document is:

http://www.unols.org/publications/reports/budget_impacts/NonOp_Process_Recmd.pdf

Agency Positions

- Vessel owners have sole discretion on whether or not to retain their vessel(s) in service.

- In order to improve the efficiency and economy of the overall Academic Research Fleet schedule, NSF and ONR will no longer provide operators of agency-owned assets with lay-up funds or divert work from other UNOLS ships as an artificial mechanism by which to reduce day rates. The need for lay-up funds for a specific ship will be carefully reviewed by the federal agency ship owner on a case by case basis and will be considered within the context of the overall Fleet right-sizing and budgetary projections. The agencies believe this is in compliance with the UNOLS Charter (ANNEX I, Ship Scheduling Committee).

- Federal Agencies prioritize decisions based on schedule efficiency and scientific effectiveness to maximize science support while making every effort to reduce overall costs.

- NSF and ONR agree an appropriate level of surge capacity is needed; in particular for rapid responses type cruises and to allow for potential future increases in science utilization.

- Given the current and projected federal funding limitations coupled with the underutilization of the U.S. Academic Fleet, it has become apparent that the Fleet size needs to be reduced more rapidly than had been previously planned. The savings from such a Fleet reduction would be used to bolster the schedules of the remaining vessels, thus leading to more efficient operations and more manageable day rates. With regard to "right sizing' of the Academic Fleet, consideration will be given to geographic distribution of the ships and overall projected science utilization by class.

- Federal Agencies strongly encourage institutions that own and/or operate Fleet vessels to commit to chartering ship days on their vessels for institutional education, public outreach, research, and training of the next generation of ship users. This commitment reduces the dependency on the federal agencies as the sole source of funding, and lowers the day rate for all potential users.

Agency Decisions and Recommendations

- In CY 2012, NSF approved the transfer of R/V *Oceanus* from WHOI to OSU. NSF also approved the retirement of R/V *Wecoma* and OSU's plan to remove all re-useable equipment and spare parts before selling the hull for scrap metal value.

- NSF plans to retire R/V *Cape Hatteras* and R/V *Barnes* in 2013, and R/V *Point Sur* will be considered for retirement in 2014. NSF recognizes the potential impacts an accelerated retirement of R/V *Cape Hatteras* and R/V *Point Sur* would have on the science community and the operators. Retirement of R/V *Barnes* supports the UNOLS recommended End of Service date, which is based on age and capability, and is likely planned for the end of 2013. NSF is open to further dialog with the Fleet Improvement Committee, the UNOLS Council and the ship operators on these important decisions.

- ONR continues to plan for retirement of R/V *Knorr* and R/V *Melville* in conjunction with requirements for crew training prior to deliveries of Ocean Class AGORs 27 and 28. Nominally this will result in *Knorr* coming off line by April 2014, and *Melville* off line by December 2014. Depending on scheduling requirements and demands in 2014, retirements may take place sooner.

- ONR has initiated scoping studies for mid-life refit of the Global AGOR 23 Class of vessels, to include R/V *Thompson*, R/V *Revelle* and R/V *Atlantis.* Depending on availability of funds, these refits could start as early as mid-2014 with *Thompson*, and could extend the Expected Service Life of the vessels to 40 years.

- NSF and ONR recommend the operators of all ships find ways to reduce costs and seek appropriate opportunities to support research and education programs by other funding sources, including institutional funds.

Guidelines

The guidelines used by the agencies to develop the recommendations above are outlined below:

- In the face of limited budgets across the federal agencies and escalating fuel and ship repair costs, operators must control the operating and maintenance costs within their direct purview in order to maintain day rates within inflation. An institution's ability to maintain reasonable day rates will be considered when negotiating annual awards.

- Federal agencies will continue to evaluate if a weak schedule of an institution-owned ship is adding to agency costs. Shore-side support is one area where costs are distributed across the ships and these costs will be reviewed on an annual basis.

- When appropriate, maintenance periods should be carried out in a vessel's homeport, both as a cost saving measure as well as an opportunity to conduct preventative maintenance. In support of current federal policy, U.S. shipyards are required for known regulatory dry-docking.

- Ship schedules must be developed to meet the science program requirements while adhering to budgetary constraints.
- Science program requirements must match the oceanographic outfitting capabilities of the ship on which the program is scheduled.
- The size/class of vessel should be considered when selecting ships appropriate for the science mission.
- The Funding Agency Science Program Managers and Principal Investigators will be consulted when information beyond that listed on the UNOLS Shiptime Request Form is required. Modifications to cruises cannot change the scope and purpose of the funded project unless approved by the federal agency.
- Programs may be scheduled as a two-ship operation instead of a single Global Class ship if it will be more efficient and cost effective.
- Every effort should be made to schedule each year's funded programs within the budgetary constraints of each federal agency. Deferrals of cruises will be considered if a

particular cruise cannot be accommodated effectively and efficiently. All cruises requiring significant transit costs will be specifically reviewed and evaluated to determine if it can be accommodated within the available funding or may require adjustment to attain effectiveness and efficiency objectives.

Supporting Information and Findings

The findings regarding Fleet ship operations for 2013 are based on the submitted ship-time requests, and posted Letters of Intent (preliminary schedules). For 2011 and 2012, information was obtained from published schedules, and cost estimates provided by the ship operators. Planning for 2013 is currently in progress and details vary at the time of this letter.

1. There were 3801 operating days on the 2011 final published schedules.

2. There are currently 3597 operating days (funded and pending) on the 2012 published schedules as of May 31, 2012.

3. See *Introduction* for 2013 funding discussion.

4. The total number of requested operating days for 2012 funded by NSF is 2299 days. In recent years the decrease in field work/days at sea from other agencies has resulted in a larger proportion of the operating days being funded by NSF and this trend continues in 2012. In 2011, of the total 3801 days, NSF funded 2274 days, or ~ 60 %. In 2012, NSF will provide support for ~64 % of the total days. ONR is funding 441 days, NOAA 311, State 225, and Other 321.

5. For 2012, Globals, (*Atlantis, Knorr, Langseth, Melville, Revelle*, and *Thompson)* and *Kilo Moana* have reduced schedules with between 195 and 289 operating days (funding and all pending). There are specific homeport maintenance periods scheduled. In 2012, NSF was able to realize savings by deferring Z. Johnson's two cruises (~ 60 days), and an OBS recovery cruise. (~30 days) These cruises were deferred as a result of scientific considerations first, but also allowed NSF to stay within the FY2012 ship operations budget. For 2013 scheduling, significant effort has gone into identifying critical timing and capability requirements. Required regulatory shipyard dry-dockings complicate the start of 2013 for some programs in remote areas. Particular consideration has been given to filling out the schedules on *Thompson*, *Revelle*, and *Knorr* in order to minimize day rates. *Atlantis*, *Langseth*, and *Kilo Moana* currently have some capacity to add days. R/V *Langseth* hopes to augment their schedule with commercial work. R/V *Melville's* LOI remains dependent on cruises out of San Diego for the Navy and commercial work.

6. For the East Coast Ocean/Intermediate, *Endeavor* has 229 days (funded); *Oceanus* was transferred to Oregon State University in January 2012 and has 158 days scheduled in 2012. R/V *Wecoma* has been taken out of service. Some transit efficiencies were found by moving work off *Endeavor* to *Atlantic Explorer*. This helped boast the AE schedule

after losing a 24-day DARPA/*Nereus* cruise. As has been the norm over the past ten years, the work is concentrated in the mid and North Atlantic in the optimal weather windows from March to October. In 2013, *Atlantic Explorer's* 2013 LOI shows 132 days funded, and 28 pending, 9 funded days are double booked. *Endeavor's* 2013 LOI has 180 days, of which 98 are funded. 13 funded days are double booked with *Atlantic Explorer*.

7. In 2012, R/V *Cape Hatteras* currently has 112 funded days planned. This is a weak schedule. This light schedule was bolstered by NSF, mainly by shifting funded work from 2013 into 2012, funding a transit to the Gulf of Mexico (this work could have been carried out by *Walton Smith* or *Pelican*), and providing lay-up funds to help lower the day rate in hopes of attracting new work. If the schedule had remained un-augmented, *Cape Hatteras* would have had 83 days in 2012 with a higher day rate. A 36 day cruise on *Cape Hatteras*, funded by ONR, had been planned in 2012 to support a fish survey study, was recently pulled by the State of MA. ONR plans to keep most of the ship-time intact for equipment testing by the PI. In 2013, *Cape Hatteras's* LOI shows 100 days, 39 funded and 61 pending. There are 22 funded days double booked with R/V *W. F. Smith* and R/V *Pelican*. 11 pending days are associated with transits to the Gulf of Mexico and Florida.

8. In 2012 R/V *Pelican* has a moderate schedule of 160 days (funded and all pending). Historically *Pelican* has added days over the course of the operating year. It appears Gulf of Mexico Research Institute funding will be used more in 2013 as programs ramp up their need for ship support. In 2013, *Pelican's* LOI has 196 days, with 39 funded days. 4 funded days are double booked with *Cape Hatteras*. In 2012, R/V *W. F. Smith* has 107 funded and 38 days pending. In 2013, R/V *W. F. Smith* shows an LOI with 186 days, 35 funded and 151 pending. There are 14 days double booked with *Cape Hatteras*.

9. In 2012, R/V *Hugh Sharp* has a relatively strong schedule at 219 funded operating days, and work concentrated regionally. In 2013, R/V *Hugh Sharp's* LOI has 160 days funded, and no pending days. No double bookings.

10. For the West Coast Ocean/Intermediates in 2012, *Oceanu*s has 158 days and *New Horizon* has 133 days. This class of ship should be operating between 200-225 days. In 2013, it is anticipated that *Oceanus* will work in the Western Pacific to carry out OBS recovery cruises and act as the second ship in an ONR Long- Range Acoustic project. *Oceanus* is currently showing 257 days, with 217 funded and no double bookings. 2013 LOI for R/V *New Horizon* has not been posted.

11. In 2012, R/V *Point Sur* has 106 days and the *Robert Sproul* has 103 days, of which 19 are pending. NSF is planning for R/V *Point Sur* to support research in the vicinity of Palmer Station in late 2012/early 2013. This will add approximately 60 days to their 2013 schedule. Without this work, which was a reimbursement for CLIVAR support in 2010, R/V *Point Sur's* schedule would have been approximately 70 days in 2012. The potential for future Palmer Station work by R/V *Point Sur* is undetermined. Currently a 2013 R/V *Pt. Sur* LOI has not been posted.

12. In 2012, R/V *Blue Heron* has a 62 day schedule. A 2013 LOI is posted with 59 total days, 9 days funded and 50 pending. No double bookings. In 2012, R/V *Barnes* has 130 funded, and for 2013 a posted LOI shows 150 days, 108 funded and 42 pending.

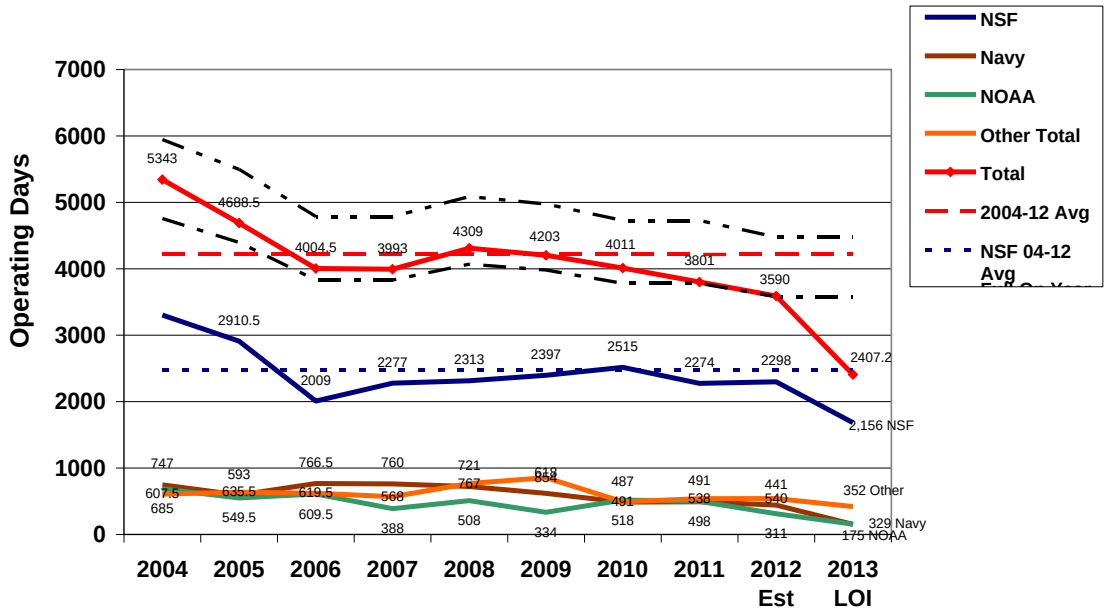
Agency	ACOE	DOE	EPA	Inst/State	BOEM	NASA	NAVY	NOAA	NSF	USGS	Other	Total
2009 Funded Days	5	0	0	175	57	40	618	334	2397	21	556	4203
2010 Funded Days	6	3	3	183	63	0	487	518	2515	20	213	4011
2011 Funded Days	0	0	1	206	35	2	491	498	2274	62	232	3801
2012 Funded & Pending Days*	0	0	0	225	26	36	441	311	2298	11	242	3590
2013 Funded & Pending Days**	0	0	0	129	0	32	151	154	1682	20	239	2407

Notes about the table:

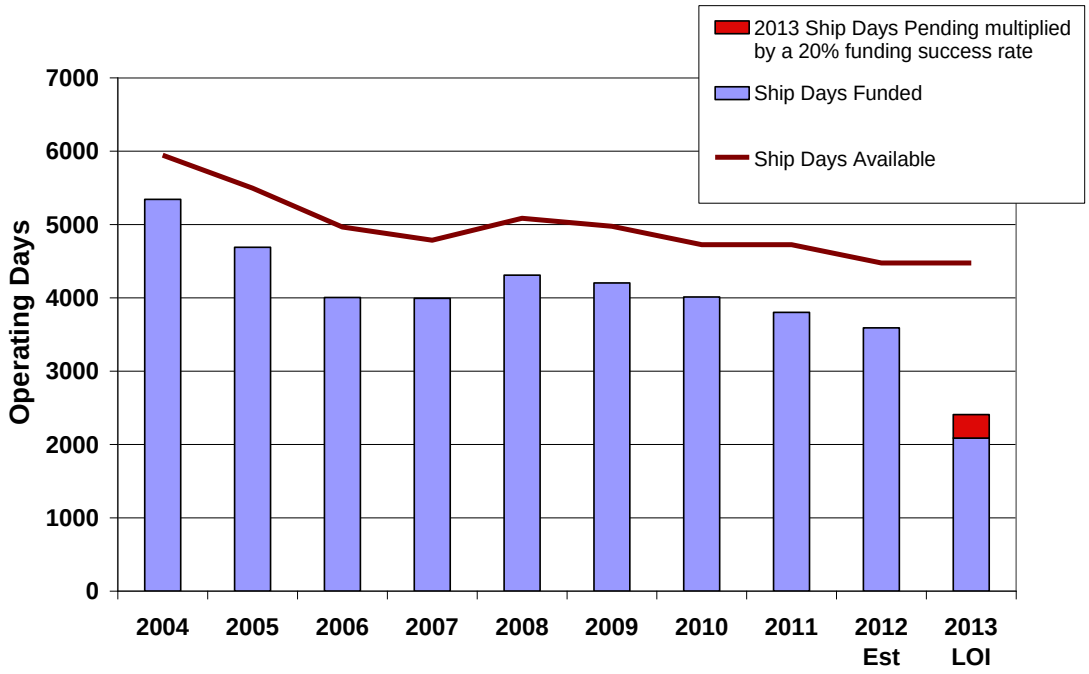
* The 2012 Funded and Pending days are based on published ship schedules as of May 31, 2012.

** The 2013 Funded and Pending days are based on the latest LOIs and draft schedules posted as of May 22, 2012. A 20% success rate factor has been applied to the pending days.

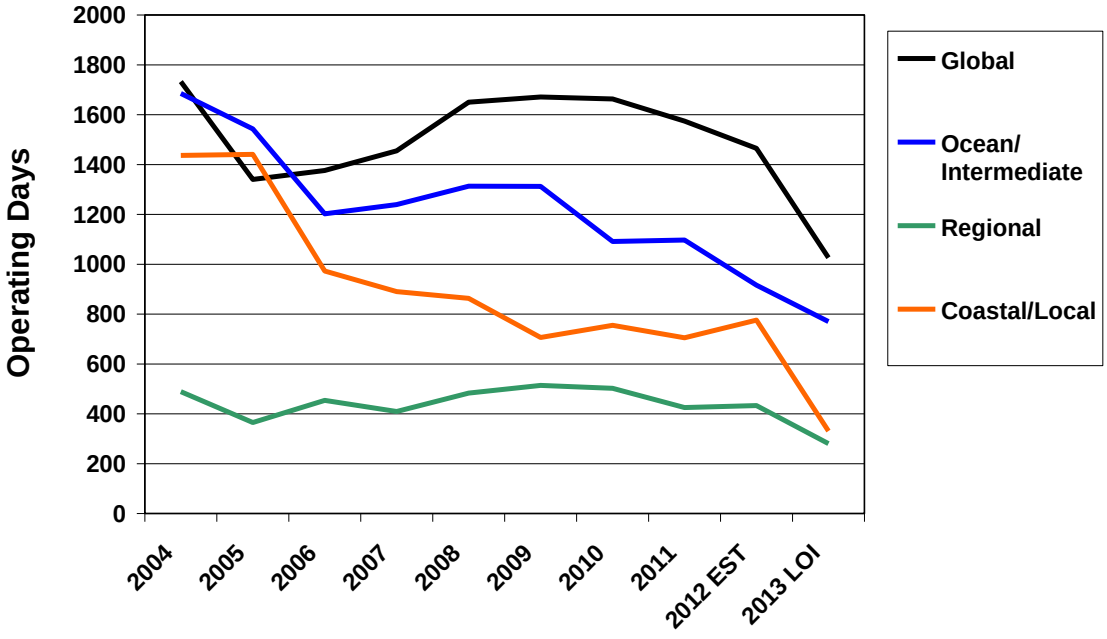
UNOLS Fleet Utilization (2004 - 2013)



Ship Days Funded/Pending and Days Available



Ship Utilization by Class: 2004 - 2013



Ship Time Request Demand