

MOSA – Major Overhaul Stabilization Account

How to anticipate major repairs and
prepare for them

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Composition of the Academic Research Fleet

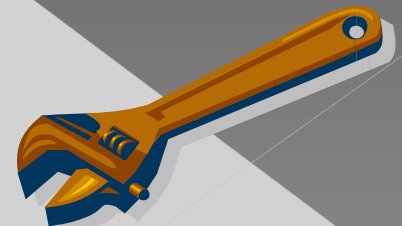
- ◉ NSF owns 7 ships
- ◉ Navy owns 6 ships
- ◉ 8 additional ships are owned by Universities or Research Institutions
- ◉ A diverse mix of ships ranging from 60 feet to 279 feet, with different capabilities, owners, and many funding sources.

How the academic fleet is different from other distributed facilities.

- There is no dedicated organization that oversees all operations and distributes federal funds.
- NSF supports ca. 70% of the costs of the fleet in terms of total budget required to operate 21 ships. In terms of total days for the fleet, the numbers range between 65-70% for NSF. NSF pays for only the days it uses.
- NSF Ship Operations Program negotiates daily rates for the ships, and these rates are the accepted negotiated rates for the federal agencies

Daily rates are used to ensure that all users pay their fair share of upkeep and maintenance.

This process is likened to amortization, where the cost is paid off in yearly increments that can be renegotiated each year, based on maintenance needs or emergency repairs



The MOSA account projections are based on knowledge of known routine maintenance items and procedures that are essential to keep the ship in a state of operational readiness.

- 1. it is not used for problems resulting from ship design. In those cases, responsibility belongs to the owner of the ship.
- 2. Think of it as a checklist of your car manufacturer's suggested maintenance routines.

How is the MOSA cost to the budget determined yearly?

- MOSA is a living document and is reassessed yearly
- All ship systems and normal maintenance routines are established for each ship.
- The MOSA period is averaged over 5 years. Ships are required to be dry-docked twice in a five year period.
- By including the projected maintenance cost into the daily rate, all users of the ships pay a portion based on their individual use.
- For example, if USGS uses 10 days per year on the R/V Havemercy, then a portion of that day rate is put into an account for that ship to be used in the current year, or at a future date.
- In general, the amount put into reserve ranges from ca. 5-12% of the total operating budget.
- If it is possible (depending on each institution) it should be put into an interest bearing account and interest has to be returned to the account.

MAJOR MAINTENANCE RESERVE PLAN - 5 YEAR PLAN

(Major Overhaul Stabilization Account, MOSA - in \$1000s)

R/V Pelican

Revised: 2/03/2010

(120) Balance as of 30 September 2009								
(28) Est. addit. cost to 31 December 2009								
148 Additional Recovery for 2009								
0 End of Year Balance Estimate 2009								
Projections from Maintenance Plan	2010	2011	2012	2013	2014	5-year Total	5-year Average Balance	
Major Maintenance Cost Estimate	\$246	\$70	\$107	\$155	\$95	\$673		
Annual Charge to Operations	\$135	\$135	\$135	\$135	\$135			
Running Balance	(\$111)	(\$46)	(\$19)	(\$39)	\$0			(\$43)

	R/V Pelican Maintenance Plan	2010	2011	2012	2013	2014	Totals	Comments
1	Dry Dock, bottom prep & paint, zincs, hull valves, tank inspection	\$30			\$40		\$70	
2	Propeller - overhaul				\$14		\$14	Wheel replacement
3	Shafts, steering and rudder				\$15		\$15	Shaft rebuilds
4	Main Engines and Gen. Keel Coolers				\$20		\$20	Clean and test
5	Main Engine Replacements						\$0	
6	Main Engines Overhaul	\$31				\$35	\$66	in-frames, Port 2010, Stbd. 2014
7	Generators overhaul		\$20			\$25	\$45	in-frames, Stbd. 2011, Port 2014
8	Main & PTO clutches				\$10		\$10	Inspection of gears
9	Engine Bilges repair and paint	\$20				\$10	\$30	Mechanically repair rust
10	Ballast tanks	\$15			\$20		\$35	Clean and recoat
11	Tank Repairs - anticipated steelwork repair of wastage				\$26		\$26	Estimated
12	Seawater piping systems repairs				\$10		\$10	Repairs to SW ballast manifold piping
13	Switchboards		\$20				\$20	
14	Air Compressor and air tanks			\$12			\$12	Replacement air tank
15	Blast and Paint topsides			\$40			\$40	
16	Electric Motor replacements			\$15			\$15	Crane, compressors, SCS system, trawl winch, sewage pump motor
17	Deck Equipment A-Frame and J-Frame		\$30			\$10	\$40	Redesign and replace J-Frame
18	PTO - Hydraulic repairs	\$20					\$20	Change out spine
19	Trawl Winch Maintenance			\$30			\$30	Overhaul
20	Dynacon Winch	\$50				\$15	\$65	Rebuild winch by Dynacon
21	Appleton Crane	\$30					\$30	Overhaul, repair extension
22	Tugger Winch			\$10			\$10	
23	Anchor Windlass	\$30					\$30	
24	Aft Steering Station Replacement	\$20					\$20	
25	TOTALS	\$246	\$70	\$107	\$155	\$95	\$673	

SAMPLE FOUR YEAR SHIP BUDGET

Section 6

Detailed 4-Year Budget

<i>R/V New Horizon</i>	2007	2008	2009	2010
	Actual	Actual	Actual	Estimate
I. Salaries & Wages:				
A. Ship's Crew				
1. a Regular crew	\$493,322	\$584,489	\$556,231	\$586,883
1. b Relief personnel	0	0	0	0
2. Overtime, SeaPay	\$111,619	\$167,483	\$163,125	\$156,907
3. Shore Leave (net)	\$14,917	\$45,461	\$36,326	\$49,529
4. Fringe Benefits	\$101,483	\$116,411	\$115,636	\$129,114
Total	\$721,341	\$913,844	\$871,317	\$922,433
B. Marine Operations Staff:				
1. Salaries	\$103,578	\$122,881	\$125,639	\$123,095
2. Overtime, SeaPay				
3. Fringe Benefits	\$32,993	\$40,998	\$42,067	\$31,732
Total	\$136,571	\$163,878	\$167,706	\$154,826
II. Repair Maintenance & Overhaul:				
A. Normal Maintenance & Repair	\$264,835	\$187,394	\$242,972	\$250,000
B. Major Overhaul (Reserve)	\$325,000	\$425,000	\$400,000	\$400,000
Total	\$589,835	\$612,394	\$642,972	\$650,000
III. Other Expenses:				
A. Fuel & Lube Oil	\$363,438	\$615,198	\$317,146	\$556,790
B. Food	\$66,141	\$79,674	\$70,600	\$84,150
C. Insurance	\$35,250	\$40,857	\$11,664	\$47,993
D. Stores, Minor Equip, Supplies	\$29,823	\$68,220	\$42,627	\$56,100
E. Travel (Domestic)	\$6,101	\$18,131	\$6,871	\$9,000
Travel (Foreign)	\$0	\$5,355	\$5,317	\$0
F. Shore Facilities Support	\$44,831	\$40,169	\$46,889	\$72,577
G. Miscellaneous	\$115,260	\$161,385	\$130,732	\$155,439
H. Amortization	\$81,653	\$114,200	\$101,067	\$106,777
Total	\$742,498	\$1,143,190	\$732,912	\$1,088,826
Total Direct Cost	\$2,190,245	\$2,833,306	\$2,414,907	\$2,816,086
IV. Indirect Costs: Rate	16.00%	16.00%	16.00%	16.00%
Amount	\$350,439	\$453,329	\$386,385	\$450,574
V. Total Operating Costs	\$2,540,684	\$3,286,635	\$2,801,292	\$3,266,660
VI. Miscellaneous Data				
A. Number of cruises or legs	19	13	21	20
B. Operating Days	143	200	177	187
C. Days at Sea	143	196	173	187
D. Maintenance Days	60	84	77	63
E. Days Out of Service	162	86	115	115
F. Daily Rate	\$17,767	\$16,433	\$15,827	\$17,469
G. Date of Last Major Overhaul		2008		
H. Expected Date of Next Major Overhaul				2011

UNOLS Ship Schedule - 2010 - Endeavor

2010 3rd Published Schedule

Published - ID #10878

Version #5 - 3/19/2010

Scheduling Contact(s)

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Notes: 1 day added to Anderson cruise in October
 1 day transit added to Lohmann cruise
 3 day Bernhard cruise shifted to Oceanus
 Modified State funded days and dates
 30 days added for McHugh Haiti cruise as Funded
 Changed dates of Anderson Cruise in Oct

Dep/Arr	Start Port/End Port	PI/Project Nbr	Days/Agency/Status
01 Jan/30 Apr	Narragansett/Narragansett		
17 Feb/21 Feb	Narragansett/Port Evergla	Transit/	5/NSF/F
24 Feb/15 Mar	Port Evergla/Port Evergla	McHugh, C/	20/NSF-OCE-MGG/T
16 Mar/20 Mar	Port Evergla/Narragansett	Transit/	5/NSF/P
12 May/15 May	Narragansett/Narragansett	Farmer, D/NONE	4/STATE/F
26 May/04 Jun	Narragansett/Narragansett	Anderson, D/	10/NOAA/F
08 Jun/14 Jun	Narragansett/Narragansett	Farmer, D/NONE	7/STATE/F
16 Jun/18 Jun	Narragansett/Narragansett	Farmer, D/NONE	3/STATE/F
22 Jun/30 Jun	Narragansett/Bridgetown	Transit/	9/NSF/F
02 Jul/12 Jul	Bridgetown/Fortaleza	/	11/NSF/F
		Lohmann, R/ARRA 0851044	2/NSF-OCE-CO/F
14 Jul/09 Aug	Fortaleza/Dakar	Lohmann, R/ARRA 0851044	23/NSF-OCE-CO/F
	/		6/NSF/F
12 Aug/24 Aug	Dakar/Narragansett	Transit/	13/NSF/F
07 Sep/18 Sep	Narragansett/Narragansett	Stanton, T/N00014-04-1-0440	12/NAVY-ONR/F
22 Sep/01 Oct	Narragansett/Narragansett	Lawson, G/0928801	10/NSF-OCE-BIO/F
05 Oct/08 Oct	Narragansett/Narragansett	Farmer, D/NONE	4/STATE/F
13 Oct/23 Oct	Narragansett/Narragansett	Anderson, D/NA06NOS4780245	11/NOAA/F
27 Oct/05 Nov	Narragansett/Narragansett	Lawson, G/0928801	10/NSF-OCE-BIO/F
09 Nov/18 Nov	Narragansett/Narragansett	Farmer, D/NONE	10/STATE/F

	Agency	Funded	Pending	Total
	NAVY	12	0	12
	NOAA	21	0	21
	NSF	89	25	114
	STATE	28	0	28

	Total	150	25	175

Design maintenance schedule for a 5 year period beginning with the current year and revisit every year



Determine the average cost for the five year period



Insert the 5 year average into the budget so that it becomes part of the daily rate



Transfer that portion of the daily rate into a separate, interest bearing account to be used for major overhaul



Provide a plan for use of the funds. Must have PO permission to use the funds. Have to account for withdrawals. No money can be used without prior permission



Revisit the plan before the next annual report is due; revise the plan if necessary and adjust overall budget accordingly