AICC Winter 2003 Meeting

HEALY & Polar Icebreakers

Maintenance, Repair, Improvement

Status

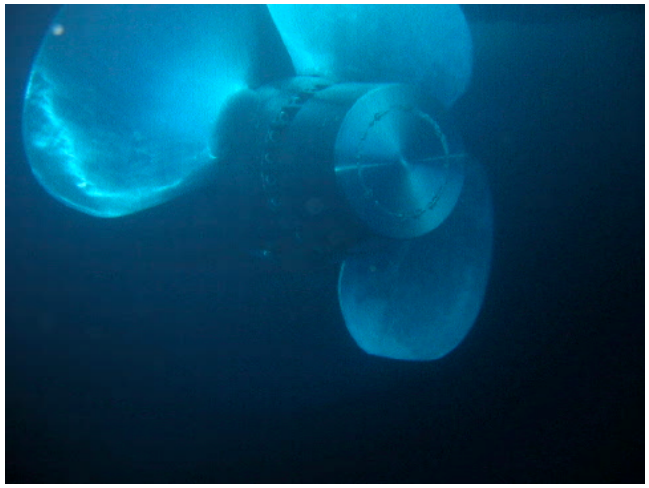
HEALY

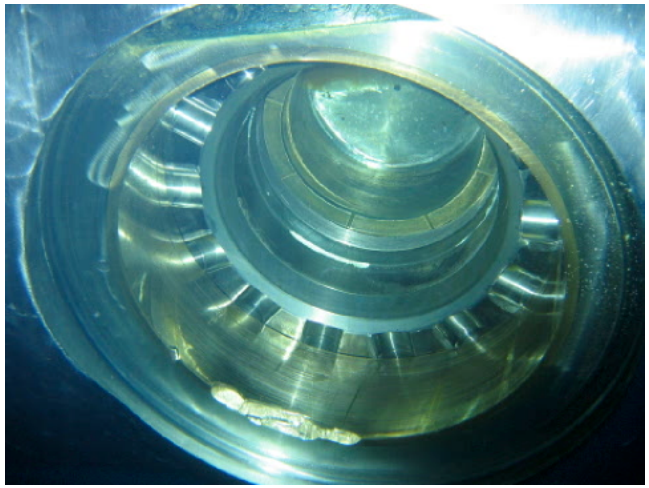
- Drydock Sked for 05 Nov 03-03 Feb 04
  - Science Seawater System Mods
    - Design incorporates Palmer successes
      - Three dedicated loops: Labs, Incubators, Flushing
      - Seachest port side of Motor Room
  - Working Deck Tie Down Socket Mods
  - SeaBeam Transducer Precision Survey
  - Tow Bitt: Still under study, not included
- SDN/Science System Support Contract

Polar Icebreakers

- Polar Sea Propeller Casualties
- Reliability Improvement Project (RIP)
- Service Life Extension Project

Polar Sea Propeller Casualties





- #1 Blade on Starboard Prop Broke Off While Breaking Heavy Ice
- Probable Cause is Thread Failure on the Blade Trunnion
- Final Determination Requires Hub Removal

Polar Sea Propeller Casualties

- Port Propeller Hub Has Developed an Oil Leak, Remains Fully Functional
- Probable Cause is Worn Threads on Hub Body & Hub Cap
- Repair of Threads Part of Overhaul Process

Polar Sea Propeller Casualties

- Repair Plan: Assumes Both Ships for DF04
  - PSEA Regular Drydocking (DD) moves from 11 Feb 04-04 May 04 to 08 Jul 03-30 Sep 03, includes all emergency & recurring repairs.
  - Prop Hubs off of PSTAR in March 03, Accelerated Overhaul for Reinstall on PSEA.
  - PSTAR Ready for Sea 01 Nov 03
  - PSEA Ready for Sea 01 Dec 03
  - Spare Blade in Germany

Reliability Improvement Project

- Project Manager Passed Away in November (Driving Force)
- All money zeroed in FY 04-05
- Alternate Funding Source Identified
- Next Phase of Work is Highly Intrusive & Upgrades Systems That Would Be Removed In SLEP
- Work Would Have to be Completed in the Summer Season in Two Ship DF Scenario

Service Life Extension Project (SLEP)

- Ship Structure & Machinery Evaluation Board (SSMEB): Internal CG Assessment of Capital Asset Status
  - 25+ Years Remaining In the Hulls
  - 10 Years Remaining in Science Systems
  - 0-7 Years Remaining in Machinery/Electrical Systems (CPP, GTs, Diesels unsupportable after 2010)
  - Double the OpTempo with Two Ship DF

SLEP
Analysis of Alternatives

- Existing Configuration
  - Finish RIP, New GTs, New Prop Hubs
  - ++Low Tech Risk --CPP Remains
- Hybrid Configuration
  - Replace/Reduce Diesels (9 down to 5), GTs, Common Bus
  - ++Lowest Cost, Fewer Engines -- CPP Remains

SLEP
Analysis of Alternatives

- Integrated Electric Drive (HEALY Style)
  - Replaces All Prime Movers, AC Motor Propulsion, All New Electrical Distribution System
  - ++ NO CPP!!!, Fewest Engines
  - -- Most Expensive & Technically Risky

SLEP
Analysis of Alternatives

- Sticker Shock!
  - $400M for Both Ships
  - Need to Lock in Money Very Soon (FY 07)
  - Competes Against Sea Change in CG
    - DHS Move
    - Deepwater ($20B)/Rescue 21($800M)
- Mitigating Factors
  - Reduce Power (75K SHP down to 45K SHP)
  - SLEP Only One Ship
  - HEALY Into DF Mix on a Regular Basis

Perfect Storm Conditions

- Little or No Remaining Service Life
  - MAJOR Casualties Now the Norm On Both Ships, Every Mission
- Doubling of the OpTempo
  - Both Ships Now On Tap to Do the Hardest Mission Year In and Year Out
- Unfriendly Fiscal Environment Within the Coast Guard
  - Effectively Cancelled RIP, No SLEP Money ID'd