Hydrographic Survey Review Panel

Fleet Issues and

Fleet Recapitalization Plan Update

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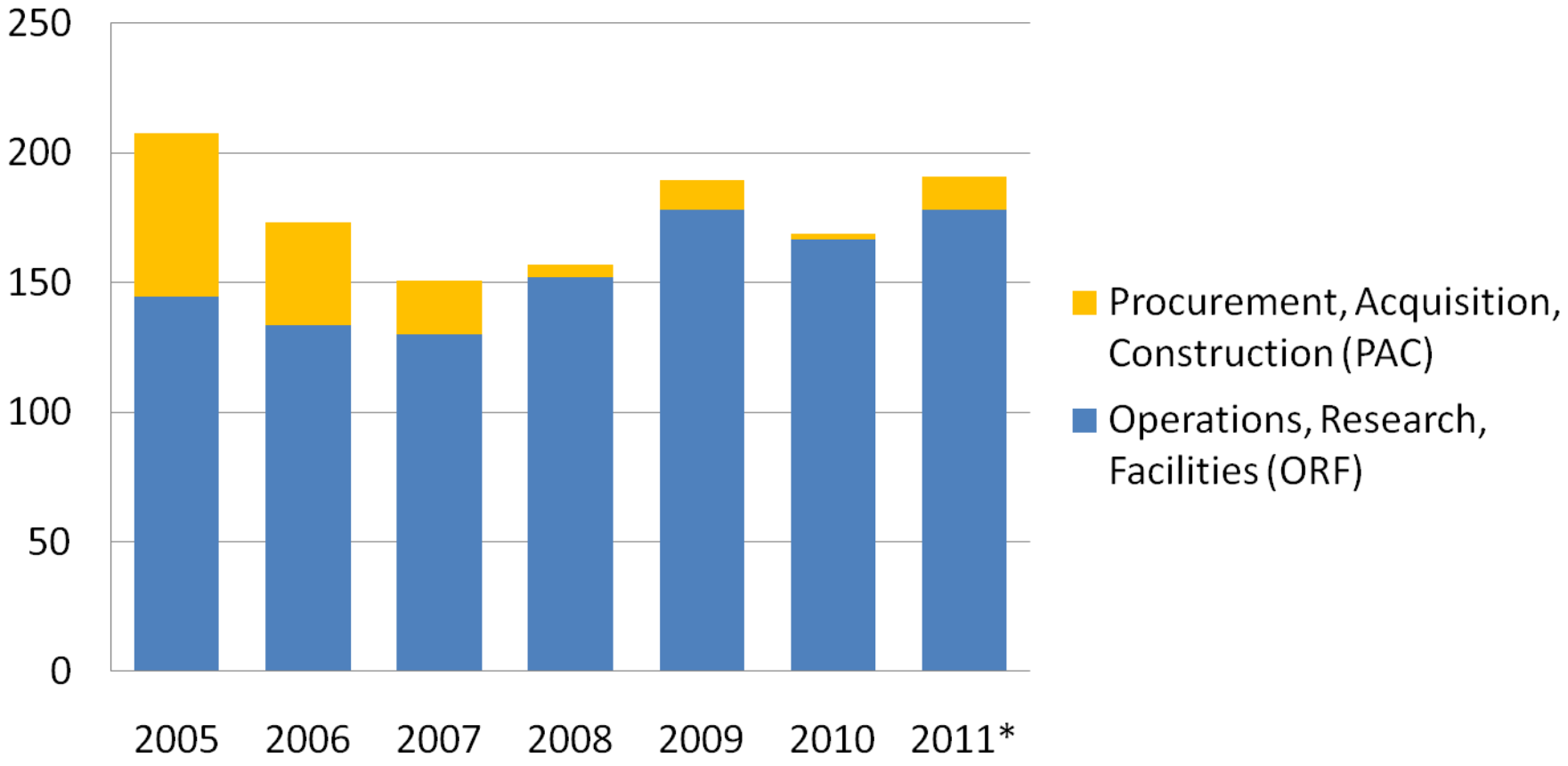
5/5/2010

Overview

- Fleet Issues
  - Budget
  - Status of $100M ARRA Funding
  - Fleet Maintenance
  - Crew Retention
  - Utilization Comparison
- Fleet Recapitalization Plan – *FSVs, Hassler, and NSVs*
  - Current and Future Acquisition Process
- Questions

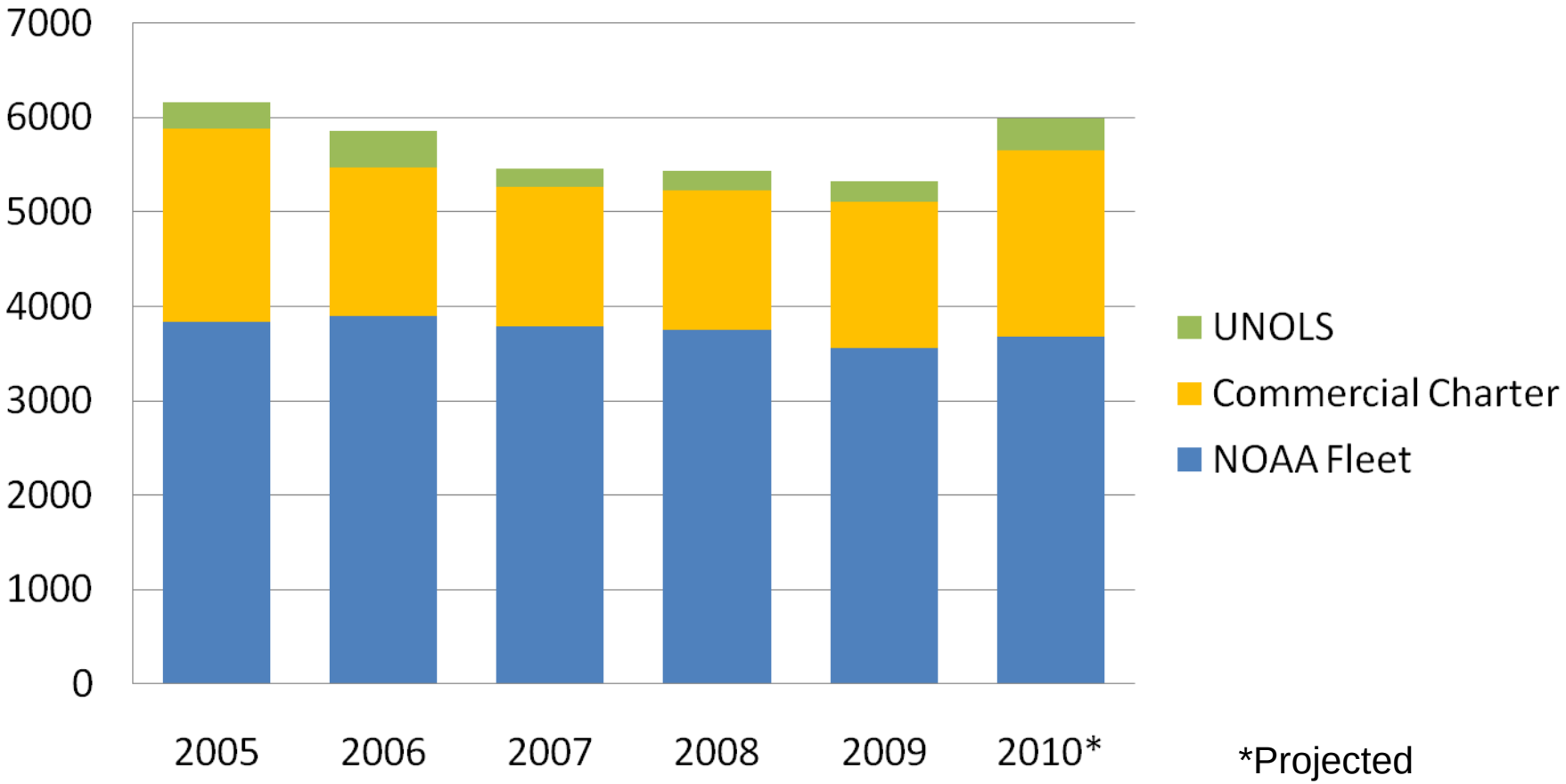
NOAA OMAO Budget



($ in Millons)

*President's Budget Request

Operating Days



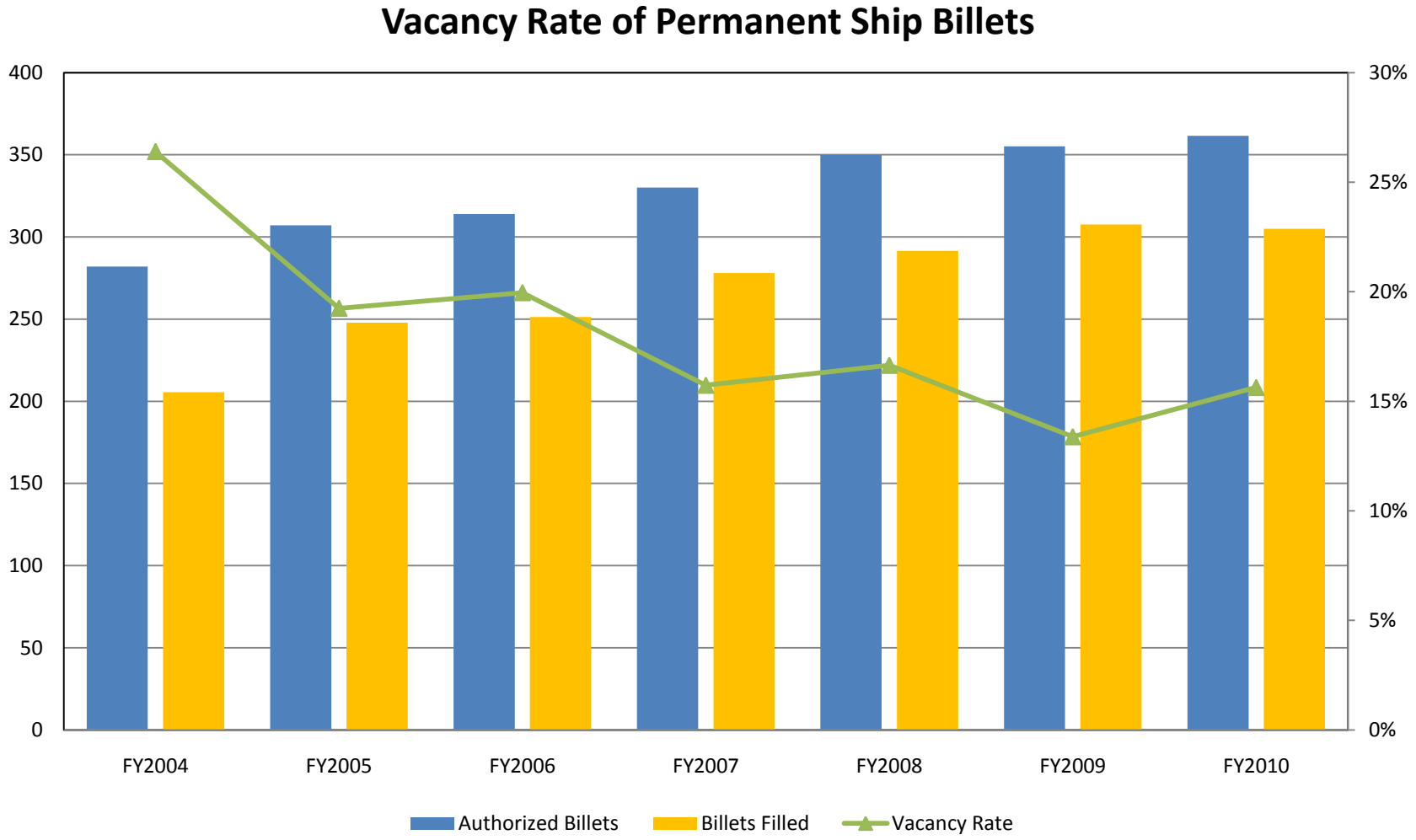
Status of ARRA Funding

- Stimulus Package – American Recovery and Reinvestment Act (ARRA)
  - Vessel Maintenance and Repair ($20M)
    - Major Repair Period (MRP) for Rainier ($5.78M, $6.1M PAC)
    - Major Repair Period (MRP) for Oregon II ($4M)
    - Drydock repair for five other vessels
  - Vessel Construction ($73.6M)
    - Construction of FSV 6, fifth vessel in the Dyson Class

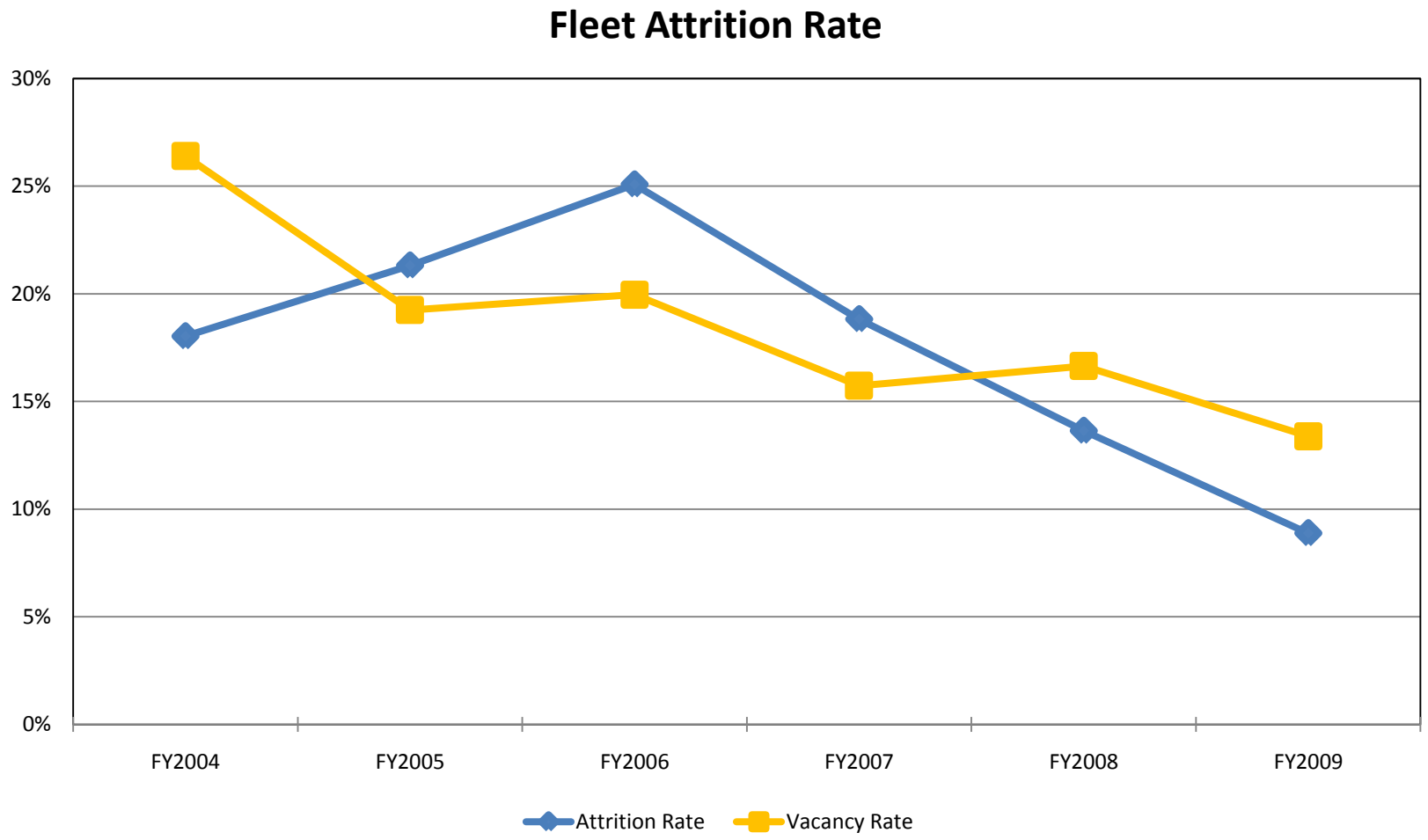
Fleet Maintenance

- $17M Maintenance Line for 18-20 Ships
- Implementing a fleet maintenance management system
  - Maximize ship availability for mission use
  - Provide tech/tools/training/documentation to analyze existing conditions and enhance maintenance planning/execution
- Preventive Maintenance baseline review and class standardization (T-AGOS, FSV, NSV)
- Personnel management (MOC Crew Relief Pool) integral in full lifecycle management plan

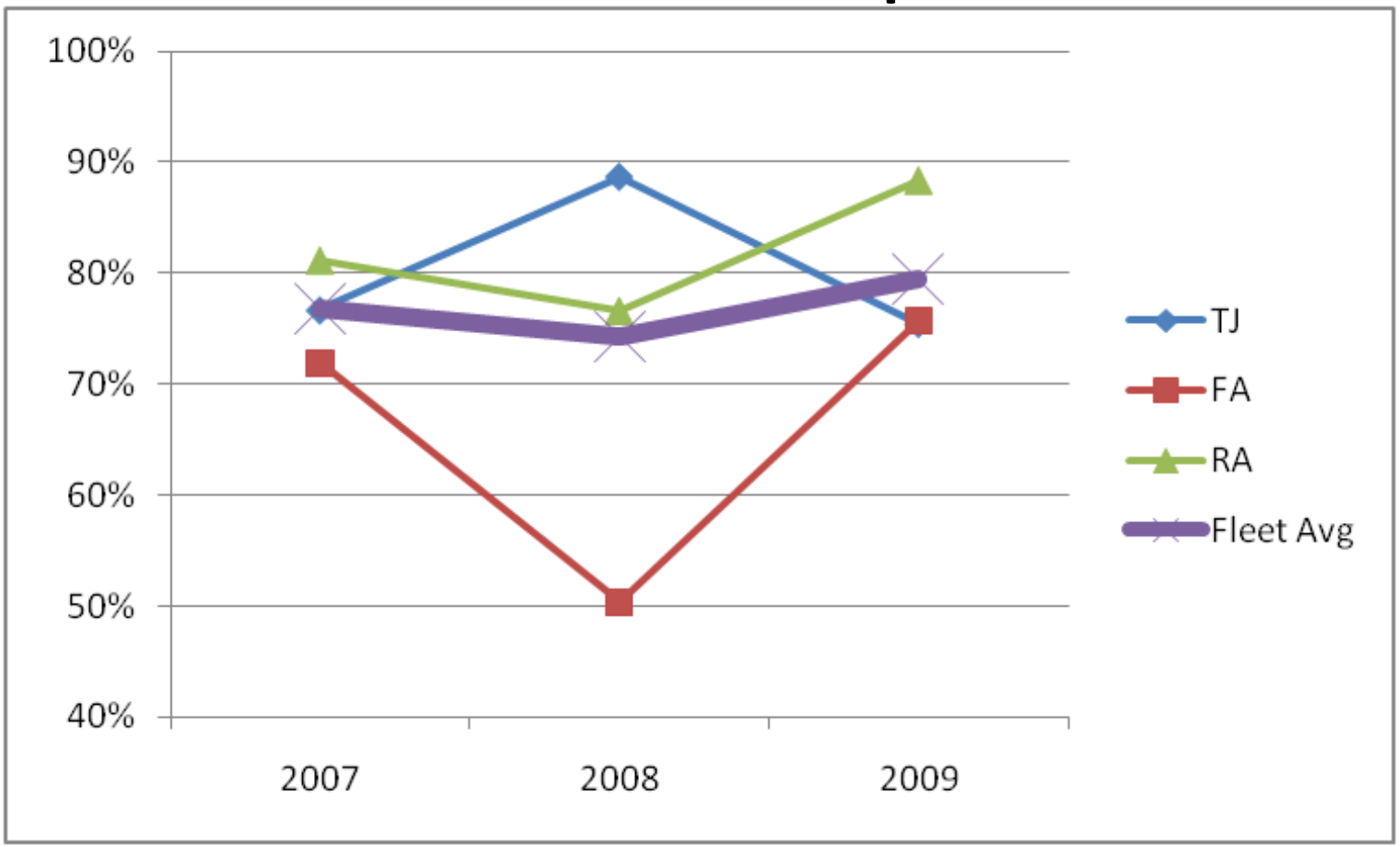
Crew Recruiting & Retention



Crew Recruiting & Retention

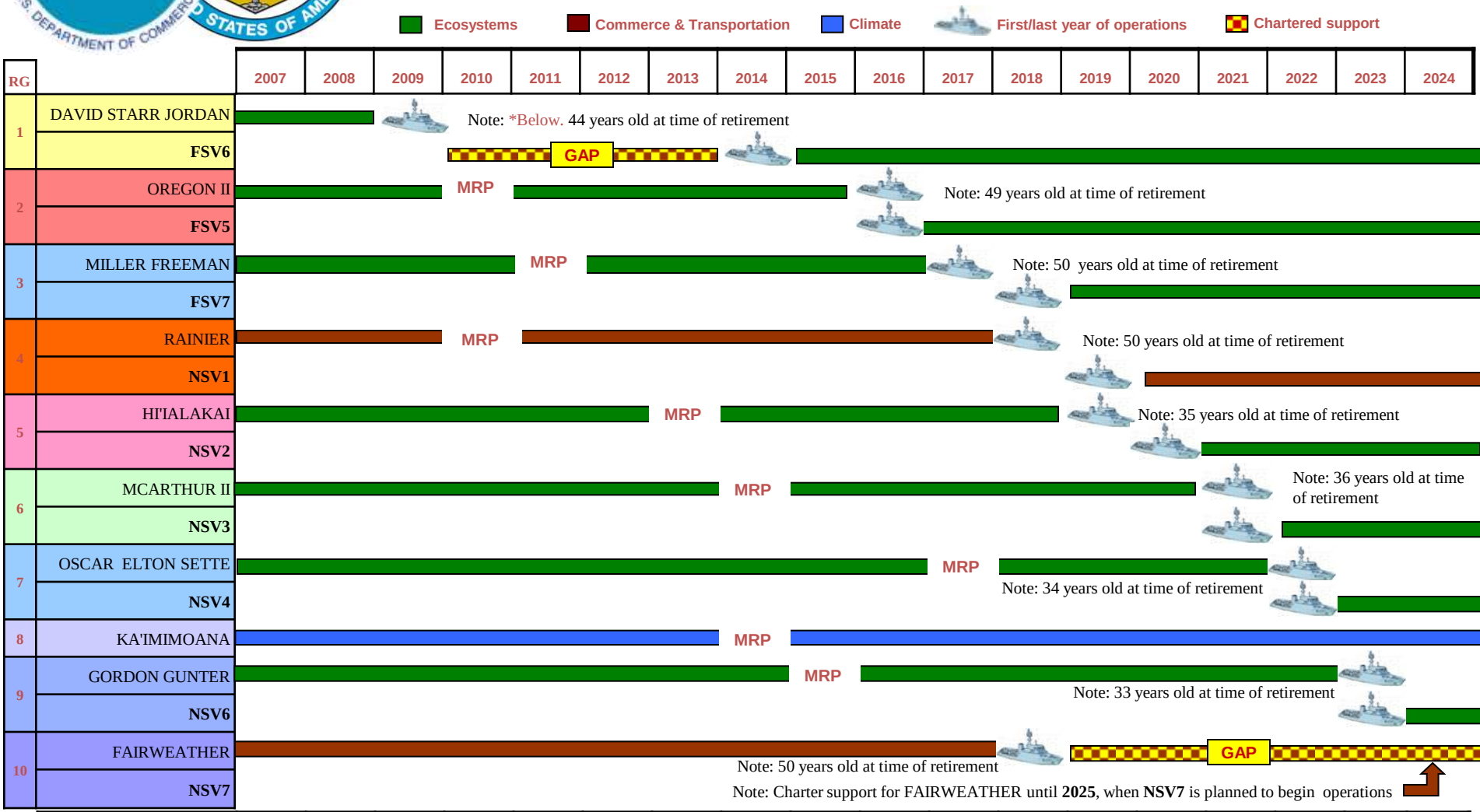


Utilization Comparison



*Slide Provided by OCS 2009 Field Season Debrief

Ship Recapitalization Plan
FY 2010 to FY 2024



	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024
Average Age of the Fleet	27.6	26.8	21.8	23.8	22.2	23.2	24.2	24.0	25.0	23.6	23.2	21.5	18.1	17.1	17.2	16.2	15.4	15.4
Number of Ships	19	21	20	17	19	19	19	20	20	20	19	19	18	18	19	19	19	18

* *David Starr Jordan* missions accomplished by *Miller Freeman* and *McArthur II* until *Shimada* begins operations in FY 2010, then FSV6 in 2013.

Revised 01/19/10

Fishery Survey Vessels

- Two (i.e., *Oscar Dyson* and *Henry B. Bigelow*) of seven planned acoustically-quiet Fisheries Survey Vessels (FSVs) are currently conducting operations.
- Two more FSVs (i.e., *Pisces* and *Bell M. Shimada*) expected to be fully operational in FY2010.
- $3M included in FY2011 President's Budget to continue design work for FSV 5.
- FSV 6 contract awarded April 22, 2010.

Ship	Homeport	Commissioning Date
Oscar Dyson (FSV 1)	Kodiak, AK	2005
Henry Bigelow (FSV 2)	Newport, RI	2007
Pisces (FSV 3)	Pascagoula, MS	2009
Bell M. Shimada (FSV 4)	Seattle, WA Newport, OR	2010
FSV 5 (shallow draft)	Pascagoula, MS	2015
FSV 6	San Diego, CA	2013
FSV 7	Newport, OR	2018

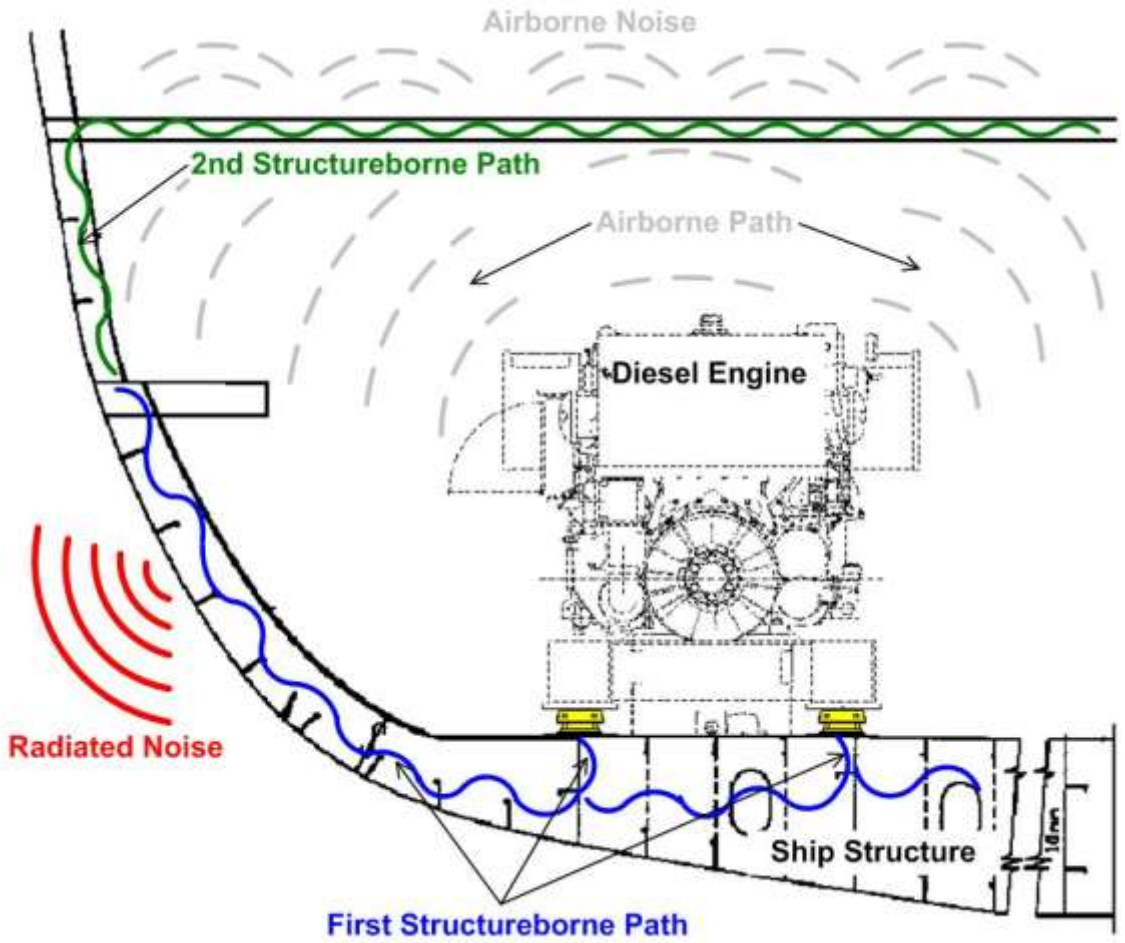
SWATH: Ferdinand R. Hassler

NOAA Survey Vessels (NSVs)

- Six additional multi-mission NOAA Survey Vessels (NSVs) are planned to be placed in service between 2018 and 2024
  - NSVs will replace:
    - Two hydrographic survey vessels
    - Four fisheries/ecosystem research vessels
- One currently active ship (*Ka'imimoana*) will undergo a service-life extension (approx. 2020)
- Phase II Recapitalization Plan being drafted to:
  - look at innovative, cost effective ways to collect in situ data
  - consider new concepts of operations which incorporate new technology, i.e., autonomous platforms (airborne, surface, underwater, etc.)

Paths for Machinery Noise

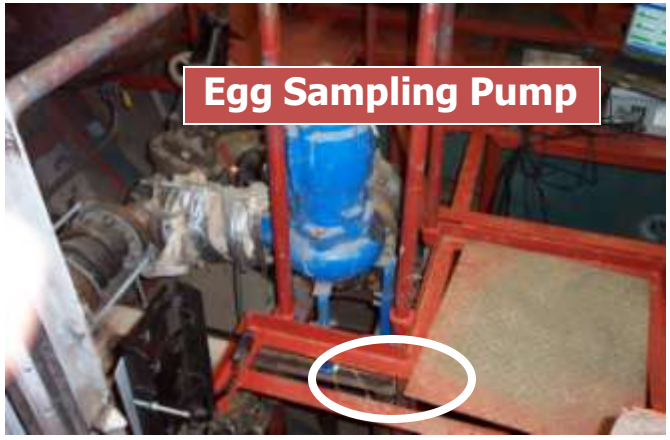
- Airborne
- First Structureborne
- Secondary Structureborne
- **U/W Radiated Noise**

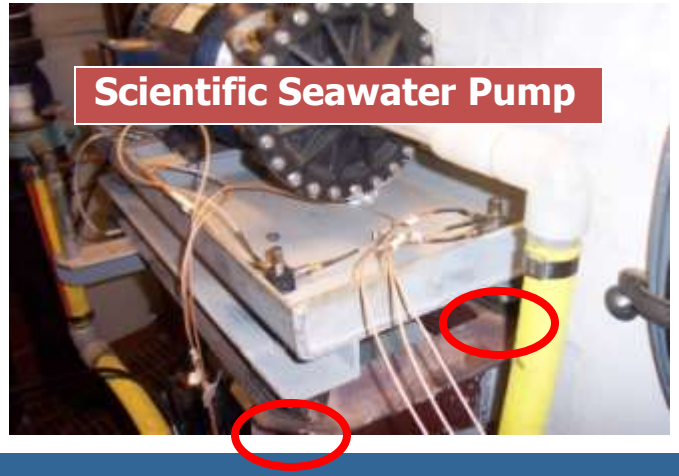


Genset Factory Acceptance Test

10% of genset mass in each block

FRV-40 – Isolated Auxiliaries

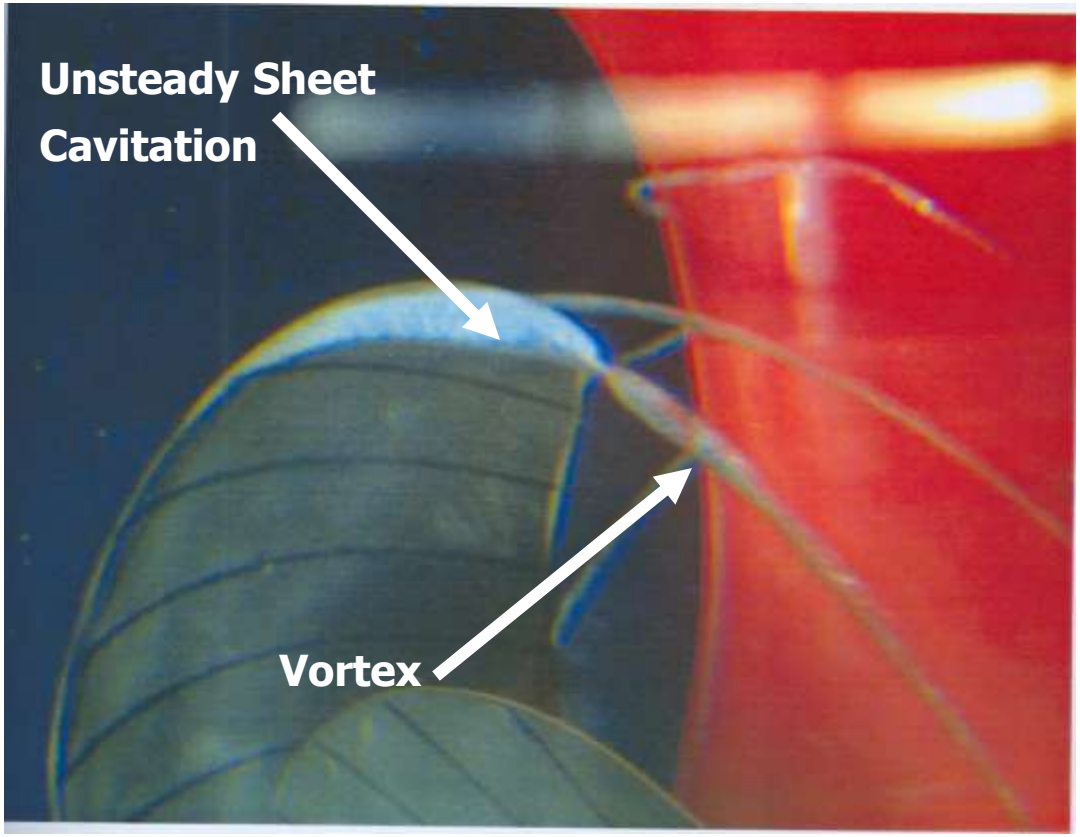




FRV-40 – Pipe Clamps

Propeller Noise – Cavitation…

… is the vaporization of water due to a decrease of the local pressure. This generates millions of very small vapor bubbles whose collapse generates significant underwater noise.



NSWCCD design - GFI

10 kts

11 kts

G:\audio74_short_11knt.wav

12kts

Even a little marine growth will cause cavitation below 11 knots.

Ship Acquisition Process

Planning Process

- Constraints
  - No input from participating organizations
  - No reflection on cost, technical and schedule feasibility
- Improvements
  - Ensure realistic cost estimates, timelines and funding

Funding

- Constraints
  - No funding for planning activities prior to PPBES execution
- Improvements
  - Fund participating organizational entities
  - Fund PAD to lead planning efforts prior to PPBES execution

Design Development

- Constraints
  - Acquisition timeline too short for adequate design development
- Improvements
  - Incorporate a contract design stage in all new ship design programs

Ship Acquisition Process

Cost Estimating

- Constraints
  - Currently rough-order-of-magnitude
  - For new designs, no models available
- Improvements
  - Develop cost estimation models
  - Train personnel to develop these models as needed

Life Cycle Management

- Constraints
  - Estimates usually based on historical data, creating future funding deficits
- Improvements
  - Life cycle planning early in the design phase
  - Concept of operations as starting point

Four Step Design Process

Concept Design	• Validate performance requirements are achievable • Develop single design solution
Preliminary Design	• Engineering analyses and design studies • Establish ship size, configuration, space allocations
Contract Design	• Contract package allowing shipbuilders to prepare bids • Part of the acquisition strategy
Detail Design	• Detailed construction drawings and equipment specifications • Occurs after the contract has been awarded • Performed by the shipbuilder

Questions

Canadian Car Wash