Key Enablers to Fleet Readiness

Rear Adm. Paul Sohl
Commander
Fleet Readiness Centers

Mr. Dennis West
Deputy Commander
Fleet Readiness Centers

Brig. Gen. Greg Masiello
Assistant Commander
for Logistics and Industrial Operations
(AIR 6.0)

Mr. Todd Balazs
Deputy Commander
for Logistics and Industrial Operations
(AIR 6.0)
Weapon Systems Life Cycle Framework

New Weapon Systems

Life Cycle Cost

In-Service Weapon Systems

R&D

Production

O&S

Retiring Weapon Systems

Disposal

Weapon System

F/A-XX

H-53K

KC-130J

MQ-8B

H-53E

AV-8B

P-3

AH-1W

H-60 B/H

MH-XX

FVLS

MQ-21A

F-35

E-2D

H-1Y/Z

V-22

F/A-18 E-G

C-2A

F/A-18 A-D

KC-130T

EA-6B

FVL

MQ-8C

EMALS/AAG

H-60 R/S

H-60 R/S

MQ-8C

H-53K

P-8A
Naval Aviation Readiness Snapshot

Ready Basic Aircraft Gap # Aircraft Trend

<table>
<thead>
<tr>
<th></th>
<th>SEP</th>
<th>OCT</th>
<th>NOV</th>
<th>DEC</th>
</tr>
</thead>
<tbody>
<tr>
<td>USMC</td>
<td>228</td>
<td>199</td>
<td>241</td>
<td>233</td>
</tr>
<tr>
<td>USN</td>
<td>78</td>
<td>68</td>
<td>76</td>
<td>65</td>
</tr>
<tr>
<td>TOTAL</td>
<td>306</td>
<td>267</td>
<td>316</td>
<td>298</td>
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</table>

Ready Basic Aircraft Gap % Requirement Trend

<table>
<thead>
<tr>
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<th>SEP</th>
<th>OCT</th>
<th>NOV</th>
<th>DEC</th>
</tr>
</thead>
<tbody>
<tr>
<td>USMC</td>
<td>34%</td>
<td>30%</td>
<td>36%</td>
<td>35%</td>
</tr>
<tr>
<td>USN</td>
<td>11%</td>
<td>9%</td>
<td>10%</td>
<td>10%</td>
</tr>
<tr>
<td>TOTAL</td>
<td>22%</td>
<td>19%</td>
<td>23%</td>
<td>23%</td>
</tr>
</tbody>
</table>

Date: 2016-01-25, Source: AMSRR
“RFT DATA DEC 2015” (Database)
Readiness Recovery Framework

**Out of Reporting**
- Depot Capacity
  - NAVAIR
  - FRC
- In-Service Repairs (ISR)
  - NAVAIR
  - FRC
- Supply (Depot)
  - NAVSUP
  - DLA

**In-Reporting**
- Utilization
  - CNAF
  - DCA
- Material Condition
  - Type Wings
  - MAG COs
- Supply (Flight Line)
  - NAVSUP
  - DLA
- Maintenance
  - CNAI
  - DCA

**METRICS**
- Production Plan
- Hiring
- Work in Process
- Original Equipment Manufacturer Capacity
- Noted But Not Corrected
- Turn Around Time
- Responsiveness
- Engineering Work in Process
- Outstanding Requisitions
- Aircraft at Work Stop
- Supply Documents
- Fleet Response Team
- Overseas Contingency Operations
- Training and Readiness Matrix
- Operational Tempo (OPTEMPO)*
- Material Condition
  - Inspection Data
  - Depot Induction/Completion Maintenance Readiness Teams (MRTs)
- Outstanding Requisitions
- Non Mission Capable Supply (NMCS) Rates
- Top Degraders
- Cannibalizations
- Experience
- FIT/Fill
- Training
- Standardization
- Publications

**ENTERPRISE ACTIVITIES**
- CRITICAL CHAIN PROJECT MGMT (CPM)
- IN-SERVICE REPAIR (ISR) OPTIMIZATION TOOL
- END-TO END MAINT PLANNING TOOLS
- IN/OUT OF REPORTING VISUALIZATION TOOL
- CONDITION BASED MAINTENANCE (CBM)
- INVENTORY MANAGEMENT TOOL
- DIMINISHING MANUFACTURING TEAM
- AVIATION RAPID ACTION TEAM (ARAT)
- ADDITIVE MANUFACTURING (AM)
- DIGITAL THREAD
- INTEGRATED LOGISTICS SUPPORT MGMT SYSTEM (ILSMS) TOOL
- LOGISTICS ASSESSMENTS
## CH-53E Recovery ‘Playbook’

### Lines of Effort

<table>
<thead>
<tr>
<th>Lines of Effort</th>
<th>Funded</th>
<th>Progress</th>
<th>Status/Notes</th>
</tr>
</thead>
<tbody>
<tr>
<td>CH-53E Reset</td>
<td>Partially Funded</td>
<td>Conducting Validation</td>
<td>- Validation A/C out of the depot and arrived New River 8 Sep</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>- Validation aircraft contracted 23 Sep 15, work began last week of Sep</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>- Verification A/C reset scheduled Feb-Jun 2016</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>- Post verification reset- full reset effort estimated to start in the summer of 2016</td>
</tr>
<tr>
<td>Individual Material Readiness List/ Support Equipment (IMRL/ SE)</td>
<td>Yes</td>
<td>Procurement time</td>
<td>- IMRL and GSE was not procured with stand-up of HMH-366 and CH-53E to CH-53E transition of HMH-463</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>- PMA-261 partially funded some up front</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>- FY16 funded $3.03M to fund balance of the deficit</td>
</tr>
<tr>
<td>Functional Check Flight Standardization Training</td>
<td>Partially Funded</td>
<td></td>
<td>- Classroom instruction for perspective FCP/Crew Chiefs and STAN meetings/training for current FCPs &amp; Crew Chiefs. Includes classroom and simulator instruction, utilizing the train the trainer. Syllabus materials for classroom and academic instruction in development.</td>
</tr>
<tr>
<td>T&amp;R Change (completed 10 Sep 15)</td>
<td>N/A</td>
<td></td>
<td>- Signed 9 Sep 15; published via AMHS DTG 101149Z SEP 15</td>
</tr>
<tr>
<td>Aerospace &amp; Maintenance Regeneration Group (AMARG) MH-53E Reconstitution</td>
<td>Yes</td>
<td></td>
<td>- 2 MH-53Es being regenerated for FRS FAM assets</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>- 2 CH-53Es from FRS returned to fleet FY17</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>- Contracted on 23 Sep to Erickson Aviation in Oregon</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>- Aircraft arrived Erickson in Nov, completion Sep 2016</td>
</tr>
<tr>
<td>Maintenance Mastery Training (MMT)</td>
<td>Yes</td>
<td></td>
<td>- Contractor provided technical training services and support for “O” Level maintainers</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>- Contract delayed and held in abeyance until FY16 funding allocated</td>
</tr>
<tr>
<td>Portable Electronic Maintenance Aides (PEMA)</td>
<td>Yes</td>
<td></td>
<td>- Funding for PEMAs approved via Omnibus $1.4M (337 PEMAs)</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>- Contract award Dec-Jan, delivery Feb-March</td>
</tr>
<tr>
<td>Technical Publication Discrepancy Report (TPDRs)</td>
<td>Yes</td>
<td></td>
<td>- CAT I (critical discrepancies are complete</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>- CAT II and III projected to be complete by Aug 2016</td>
</tr>
</tbody>
</table>

Total CH-53E Readiness Recovery Cost across the FYDP: $259.87M

FY 16-17 OCO, FY18-21 POM

UNCLASSIFIED
NAVAIR Strategy

- Improve readiness through a combination of T/M/S and enterprise activities
  - T/M/S ‘plans’ to recover and sustain readiness requirements
  - Enterprise activities to understand and address readiness issues

- Along with recapitalization, harmonize readiness accounts
  - Strategic shift of resources to prioritized RBA recovery and sustainment activities
  - More aggressive use of OCO

- Sustain emphasis on readiness and in-service mindset
  - Strengthen strategic partnerships
  - Accelerate learning through university/college concept
Vision 2020

2014

- Scheduled Long Term
- Local Directed

- Site-Based Reactive Workload Management
- Local Capacity

- Bureaucratically Responsive
- Fleet Support Teams platform specific

- Three Different Training Systems
- Level of Maintenance is a Place

- Push System
- No Link Between Supply System and Demand

- Redundant Overhead
- Excess Rate Burden

- Multiple Financial Corpora
- Local Investments

Global Maintenance Management

Optimize Capability & Capacity

Logistics & Engineering Support (ISSC)

Workforce Proficiency

Supply Support

Services

Financial Model

2020

- Event Based (Short Term)
- Globally Integrated

- Throughput Driven Workload Management
- Global Capacity

- Agile Responsiveness
- Global support Structure

- One Training System
- Maintenance is a Level of Certifications

- Pull System
- Harmonization Between Supply System and Demand

- Singular Services System
- Reduced Total Costs

- Single Financial Corpus
- Global Investments

Slow, Inefficient, stove piped organization

Rapid, Affordable, Globally Focused Organization
Optimize Capability & Capacity
Backups
Key Elements of Critical Chain Project Management (CCPM) Implementation

- Identify the Constraining Capacity & Adjust WIP to Capacity
- All stakeholders aligned to key milestones (ex. Full Kit)
- Synchronize Priorities Across All A/C
- Immediate Issue Resolution
- Control the release of work

- Aircraft WIP is Decreasing
- Engineering Support WIP is Decreasing
- Material Shortages are Decreasing
- Manpower is Increasing
- Production Priorities are Clear
- Resulting in **INCREASED THROUGHPUT**
NAVAIR Open Architecture Enterprise

Operational Need Defined

Capabilities integrated and tested into target platforms

Functions integrated into representative system hardware and validated on surrogate platform

Capabilities derived and functionally decomposed

Industry delivers innovation to open interfaces

Functional components developed and tested in LVC environment

NAVAIR investments in OA drive new capabilities, competition and reduce costs

Ground and Air lab and test assets provide robust representative environment

Enables delivery of more mature products that can be readily integrated into multiple platforms
Additive Manufacturing Application Space

Sheet Metal Tooling
Fit-Form/Rapid Prototyping
Shop Tooling
Composite Tooling
End-Use Parts

Additive Manufacturing Implementation at Fleet Readiness Centers
Where Are We Headed?

Advanced Materials & Processes
- Large format polymer AM applications
- Metallization of AM tools & components
- High temperature-high strength polymer composite materials

Advanced Composite Tooling
- Development of CTE matched tooling materials
- Rapid tooling technologies
- Ducting
- Smart Tooling

Metallic Processes
- Tooling
- Repair of high value components (compressor blades)
- Aircraft repair fittings
- End-Use Parts

Collaboration
- Working with OEMs, private industry, and Academia
- Supporting America makes Efforts
- Cooperative Research & Development Agreements (CRADAs)

Workforce Development
- STEM Efforts
- Artisan training on 3D Solid modeling
- Rotations