Deep Cycle Maintenance Concept

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AMCOM G-3
# Deep Cycle Maintenance Concept

## Abstract

2010 U.S. Army Corrosion Summit, Huntsville, AL, 9-11 Feb

## Subject Terms

- unclassified
- unclassified
- unclassified

## Limitation of Abstract

Same as Report (SAR)

## Number of Pages

9
Current Situation

- No Cyclic Aviation Sustainment Program Exists to Mitigate Risk Associated With Long Term Effects of Airframe Aging and Use (Corrosion and Structural Cracks)

- Scheduled Field/Phase Maintenance
  - Provides Adequate Levels and Frequency of Inspections to Address Safety and Operational Availability Requirements
  - Does Not Address Long Term Effects (Cracking, Corrosion) of Aging Process

- Airworthiness Implications

*Reset Is the ONLY Existing Aviation Field Maintenance Program With Sufficient Disassembly, Inspection, and Repair Capabilities Necessary to Ensure Aircraft Meet Service Life Expectations*
Background

- Reset Process and Field Sustainment Activities Identified [Through Maintenance Engineering Calls (MECs)] Corrosion and Structural Damage Not Found During Phase Maintenance
  - Additional Field Level Periodic Disassembly and Inspection Required to Identify and Repair Critical Structural Elements to Ensure Long Term Safety and Operational Availability
  - Reset Process Sufficient for Redeployed Aircraft – Need Process for Non-deployed Aircraft

- CBM Program Being Implemented But Focused Primarily on Dynamic Components

Maintenance Engineering Calls (MECs)

CBM and DCM Are Complementary

Airframe Structural Issues Represent Greatest Percentage of Defects/Damage Found and Accounted for in MECs

CBM Monitored

Current
- Auxiliary Power Plant System
- Blades
- Drive System
- Power Plant
- Rotor Head System
- T55
- T700

Limited
- Airframe
- Electrical System
- Flight Control System
- Hydraulic/Pneudraulic

Future
- Armament System
- Avionics
- Fire Control System
- Mission Equipment
- PNVS Assembly
- TADS Assembly

Distribution of MECs By Subsystem

Reset Once

Airframe

44%

14%

11%

12%

3%

6%

6%

 unspecified percentages

Current Subsystems:
- Auxiliary Power Plant System
- Blades
- Drive System
- Power Plant
- Rotor Head System
- T55
- T700

Limited Subsystems:
- Airframe
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- Flight Control System
- Hydraulic/Pneudraulic

Future Subsystems:
- Armament System
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Airframe Structural Issues Represent Greatest Percentage of Defects/Damage Found and Accounted for in MECs
Ft Rucker Emerging Results
Inducted 2 EH-60s in Reset Since 29 Sep 09:
• 13 MECs Initiated to Date -- 12 Airframe Related

Emerging Results from Ft Rucker Fleet Suggest
Numerous Serious Latent Maintenance Issues Remain
Undiscovered by Current Field Level Inspections
Deep Cycle Maintenance (DCM) Concept

Scheduled Maintenance Process That Expands Level of Inspections Required by Aviation Platform Maintenance Instructions

- Focused on Structures (Rather Than Components)
- Tailored (Timing/Tasks) for Each Mission Design Series (MDS) Aircraft
  - Additional Tasks Identified by Platform PMs
- Conducted in the Field by Unit or Supporting Maintenance Operations
- Incorporates Disassembly of the Aircraft (Like Reset) and Inspection and Repair of the Airframe as Required
- Scheduled on a Cycle to Be Determined and Synchronized With Scheduled Maintenance Events
- Execution Synchronized With ARFORGEN Requirements

Deep Maintenance = “Phase (+)” or “Reset (-)"

Deep Maintenance Is Not a New Level of Maintenance
Phased Implementation

- Implementation Would Be Done in Concert With the PMs’ Fleet Management Strategy, Synchronized With ARFORGEN and MDS-specific Phase Cycles

- FY12-17 Implementation for UH/CH/OH
  - UH First Requirement: FY12
  - CH Applicable for F-model Only: First Aircraft FY16
  - OH Partial Implementation FY16

- Full Implementation Following Recap/Reman Programs for AH
  - AH: DCM Following Completion of Reman Program (Block II, Block III Upgrades): First Aircraft FY18

- Implementation for LUH TBD
  - DCM Intended to Offset Effects of Aging – Data Collection / Analysis Required Before Implementation Date Determined
Summary

- DCM Addresses Long Term Effects (Cracking, Corrosion) of Aging Aircraft
- Mitigates the Risk to Ensure that Aircraft Meet Service Life Expectations
- Expands Aircraft Field Maintenance/Phase Inspections – DCM Is Not a New Level of Maintenance

Deep Cycle Maintenance Provides The Right Mix – Airworthiness, Risk, Readiness
Points of Contact

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