



# Deep Cycle Maintenance Concept

8 February 2010

AMCOM G-3

# Report Documentation Page

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# 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**

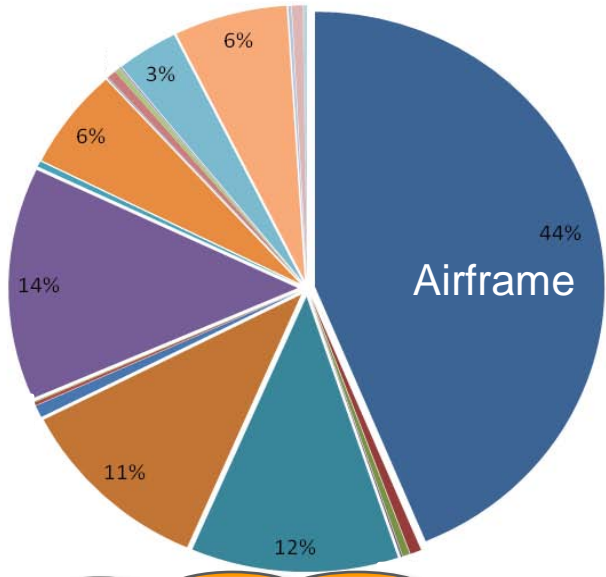
**Bottom Line:** Data Indicate Current Scheduled Maintenance Measures Not Sufficient to Ensure Aircraft Will Meet Service Life Expectations. A Deep Cycle Maintenance (DCM) Program, “Packaged” With Existing Fleet Sustainment Efforts, Is Required to Mitigate Risk.



# Maintenance Engineering Calls (MECs)



### Distribution of MECs By Subsystem Reset Once



- AIRFRAME
- ARMAMENT SYSTEM
- AUXILIARY POWER PLANT SYSTEM
- AVIONICS
- BLADES
- DRIVE SYSTEM
- ELECTRICAL SYSTEM
- ENVIRONMENTAL CONTROL SYSTEM
- FIRE CONTROL SYSTEM
- FLIGHT CONTROL SYSTEM
- FUEL SYSTEM
- HYDRAULIC/PNEUDRAULIC
- INSTRUMENT SYSTEM
- LANDING GEAR
- MISSION EQUIPMENT
- PNVS ASSEMBLY
- POWER PLANT
- ROTOR HEAD SYSTEM
- T55
- T700
- TADS ASSEMBLY

**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

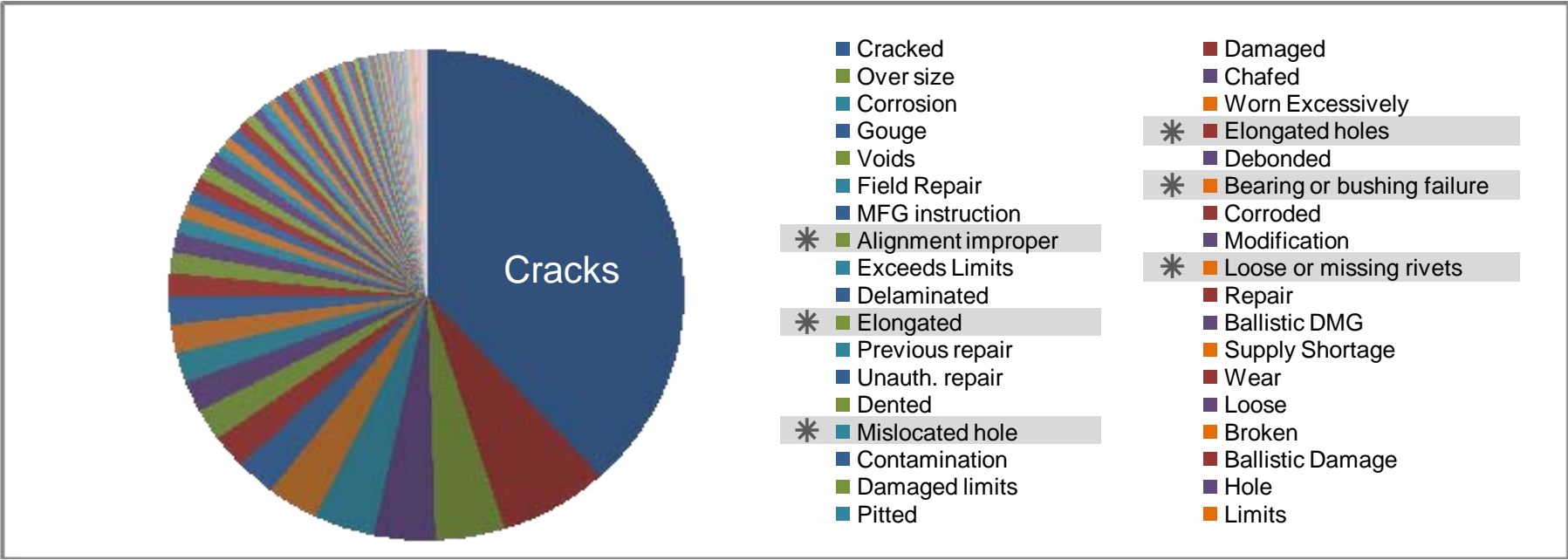
# CBM and DCM Are Complementary



# Distribution of Airframe MECs



\* CBM Monitored



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
  - Tech Pub/Tech Bulletin Study/Development FY10-11
- **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***



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