Life Cycle Management

Diminishing Manufacturing Sources and Material Shortages (DMSMS) Conference

Gary Nenninger
AMCOM G-3
11 July 2006
The Situation

- **Problem:** Average Age of Army’s Aviation and Missile Systems Continues to Increase

- **What’s Being Done**
  - New Procurement
  - Recapitalization
  - Modernization Through Spares
**UH-60 Modernization**

**UH-60A/L Baseline**
- Entered Army Service 1979
- Analog Cockpit
- STD Transmission
- 700 Series Engine

**UH-60M Block I**
- Digital Cockpit
- Dual Digital Flight Controls
- Fully-Coupled Flt Director
- Wide Chord Blades
- Rotor Brake Provisions
- Folding Composite Stabilator
- Improved Durability Gearbox
- 701D Engine

**UH-60M P3I Spiral Dev**
- Fly-by-Wire (FBW)
- Advanced Flight Controls
- Full-Authority Digital Engine Control (FADEC)
- Common Cockpit - Common Avionics Architecture Sys (CAAS)
- Composite Tailcone – As Ready
- JTRS – As Ready
- IVMS / HUMS – As Ready
- CMWS / IMCD – As Ready

**UH-60M Block II**
- Improved Turbine Engine Program (ITEP)
- Improved Transmission
- FLIR/MMR
- Large Fuel Cell
- Improved ASE
- Composite Airframe

**Performance Attributes (4K Ft/95°F):**

**Today**
- External Lift (lbs @135km): 4500
- Air Assault Radius(km): 225

**2007**
- External Lift (lbs @135km): 4500
- Air Assault Radius (km): 225

**2009**
- External Lift (lbs @135km): 9000
- Air Assault Radius (km): 275

**2013**
Recapitalization

Rebuild

- Zero Time Maintenance Standard
- Technology Insertion

Selected Upgrade

- Zero Time Maintenance Standard
- Technology Insertion
- Upgrade Warfighting Capability

Same Model - New Life

New Model - New Life

- Extended service life
- Reduced Operating and Support (O&S) Cost
- Improved System Reliability, Safety, Maintainability, and Efficiency
- Enhanced Capability

One Outcome

Organic Depot End Item Workload

UH-60A

CH-47F

AH-64D
Modernization Through Spares (MTS)
T700 Engine Series Example

Today

• Army Working Capital Fund

AH-64A
-701
-701C

AH-64D
-701
-701C

UH-60L
-701C

UH-60A
-700

DEPOT OVERHAUL

Tomorrow

701D Without Power Upgrade – Run With C Controls

Field Upgradeable Power With New DECU/FADEC & HMU

• Increased Power = Increased Payload

Future Force

701D

701D in UH-60A Control Integration

• Reduce O&S Cost up to $100M/yr
• Improve Readiness Thru Commonality and + 30% TOW
• 60 – 75 Day Depot Overhaul

AH-64A
-701
-701C

AH-64D
-701
-701C

UH-60L
-701C

UH-60A
-700

DEPOT OVERHAUL
Barriers to Recap & MTS

- Obsolescence
- Non Availability from Original Vendor

Lack of Data Rights / TDP
Inhibits Reprocurement / Competition

Up Front Funding Required To Reengineer Obsolete / Unprocurable Components
Supply Chain Initiative

- Develop Factory-to-Foxhole View
- Identify Network of Multi-tiered Suppliers for Selected Dynamic Components
- Identify Critical Vulnerabilities in Enterprise Supply Chain
- Identify Opportunities for Lean and Process Improvement Efforts Within Overall AMCOM Supply Chain
- Develop Recommendations for Supply Chain Improvements

Focus:
- Increase Throughput Throughout Supply Chain
- Decrease Production Lead Time
- Increase Serviceable Inventory
- Reduce Backorders and Procurement Due-in’s
- Increase Induction of Unserviceable Onhand
- Increase Flow of Overhaul
Aviation Supply Chain/Web
Heightened Demand on Limited Capacity

All Roads Lead To Timken Latrobe
Supply Chain Initial Findings

- Lead Times Too Long
- Better Inventory Management Needed
- Labor Vulnerability at Vendor Factories
- Limited Communication or Visibility of Information in Supply Chain
- Sole Source Restraints/Constrained Capacity for Specialty Metals

Opportunities For Improvement Exist & Are Being Pursued
Path Ahead

- Intensively Manage Supply Chain
- Pursue Joint Contracting Initiatives
- Avoid “Boom or Bust” Procurement Cycles
- Consider Bringing Single Source / Foreign Source Items In-house (Eliminate Industry Capitalization Issue – Biggest Barrier to Market Entry)