Naval Aviation Depot Maintenance

November 15, 2011

Aviation Depot Maintenance
- Invests today,
- For service life used yesterday,
- In order to provide readiness tomorrow
Resourcing Overview

• Aviation Depot Maintenance (ADM)
  • Operations and Maintenance Navy (O&M,N/NR) funded
  • Funds all Naval Aircraft and Engine Organic, Intra-Service and Commercial depot workload
    • Also fund directly some unique weapon system components
  • 58 Unique Type/Model/Series (TMS) Aircraft
    • ~3900 aircraft in the Navy inventory
    • Generate ~750 Airframe and ~2600 Engine/Module maintenance events per year
      • $1.1B Baseline budget / $1.3B w/OCO in PB12
    • Engine repairs/overhauls driven by reliability and hours operated
    • Distributed airframe maintenance uses Planned Maintenance Intervals based on Fixed Inductions Dates (FID)
      • ~40% of Airframe events performed in/near flight line by depot field teams
Aviation Depot Maintenance ($1.6B FY11)

- Airframes USN: 29%
- Airframes USMC: 20%
- Engines USN: 23%
- Engines USMC: 7%
- Other USN: 12%
- Other USMC: 9%
Issues

• Forecasted budget constraints across the FYDP risk unfunded aircraft maintenance (backlog)
• Aviation Depot Maintenance has relied on Overseas Contingency Funding to execute full requirement
• Current modeling approaches have focused on risk as a function of depot recovery
  • Maximum one year recoverable backlog of 100 Airframes / 340 Engines
• Difficult to map backlog impact to future readiness
  • Configuration details within a TMS not currently tracked for PPBE purposes
  • Developing impact of specific aircraft inventories against future schedule demands to show impact
INTEGRATED MAINTENANCE PROGRAM

Notional

PMI 1 180 Days 4 Years Operational  PMI 2 56 Days 4 Years Operational

Heavy Industrial Induction

Field Event

Fixed Scheduled Induction Date

• Fundamental shift by the Navy
  • Moved away from conditional inspections (ASPA) and SDLM for all major TMS
  • Maintains more consistent level of material condition
  • Improved ability to forecast future workload and stabilize requirements within the PPBE process
Requirements Collections and Modeling Process

Source of Requirement

- Aircraft Inventory
- Integrated Maintenance Work Load Standards AIR 6.0
- TMS PMI Schedules/Engine Demands
- Primary Aircraft Authorization (PAA)

Requirement Review Process

- Depot Core Minimums
- Forecasted Workload w/Unit Cost by Depot

ADM Pricing Model

Minimize Inventory Risk With Available Funding

- Funded /Backlog Maintenance

Flight Line Entitlement
Wide Variance in Unit Cost

FRC-CHP/JAX/NIS Airframe Events by Workload Standard

Determining which TMS can take risk may cause large shifts in cost or backlog

Cost

DLHs

Workload Standard - Hours

Unit Cost per Event

$0

$1,000,000

$2,000,000

$3,000,000

$4,000,000

$5,000,000

$6,000,000

$7,000,000

$8,000,000

$9,000,000

$1.33M avg 11,092 avg mhrs

$1.22M avg 13,717 avg mhrs

$1.44M avg 19,554 avg mhrs

$.50M avg 9,002 avg mhrs

$.278M avg 5,703 avg mhrs

$.108M avg 1,322 avg mhrs

$.50M avg 3,688 avg mhrs

$.278M avg 5,703 avg mhrs

$.108M avg 1,322 avg mhrs
• Developing new thinking on how to take and reflect risk when funding is constrained
  • Currently report unfunded depot workload as a function of number of airframes and engines not funded (backlog)
  • Backlog is an easier understood metric for those outside the maintenance community
  • A Direct Labor Hours (DLHs) metric would be more reflective of depot production risk but not tied to readiness impact

• New modeling efforts are being developed to better link aircraft production to readiness demand
  • Will link necessary production to future inventory demands necessary to meet readiness goals
  • Will emphasize meeting Flight Line Entitlement required for tiered readiness
Conclusions

- Requirements process is well defined and uses accredited pricing models to balance funding risk
- Planned Maintenance Intervals with Fixed Period End Dates has been an effective tool to establish and manage depot requirements
- Next evolution of modeling fidelity will add stronger tie to future demand to show impact if funding is constrained
Questions?
Backlog – 500K DLH Combinations

Example

- 150 units @ 1.3K manhours/unit = 195K manhours
- 33 units @ 3.7K manhours/unit = 122K manhours
- 16 units @ 5.7K manhours/unit = 91K manhours
- 4 units @ 9.0K manhours/unit = 36K manhours
- 2 units @ 11.0K manhours/unit = 22K manhours
- 1 unit @ 13.7K manhours/unit = 14K manhours
- 1 unit @ 20.0K manhours/unit = 20K manhours

Total ~500K manhours
Navy Flight Line Entitlement

Total FLE\(_{TMS}\) = Navy Tac Air by FRTP Phase + Training and Support PAA

32 month Deployment Cycle

Flightline Entitlement Aircraft for a representative 12 aircraft squadron