



# AIR-6.0 Logistics Opportunities & Challenges in Additive Manufacturing

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# MACRO PICTURE

## Industrial Base

- PB15 No F/A-18s, EA-18Gs, H-60s Drawdown in FY-15; V-22/H-1 Drawdown in FY-19
- Decreasing A/C Quantity Across the FYDP
- Investments Focused on Mods/Upgrades/Derivatives

## Fleet

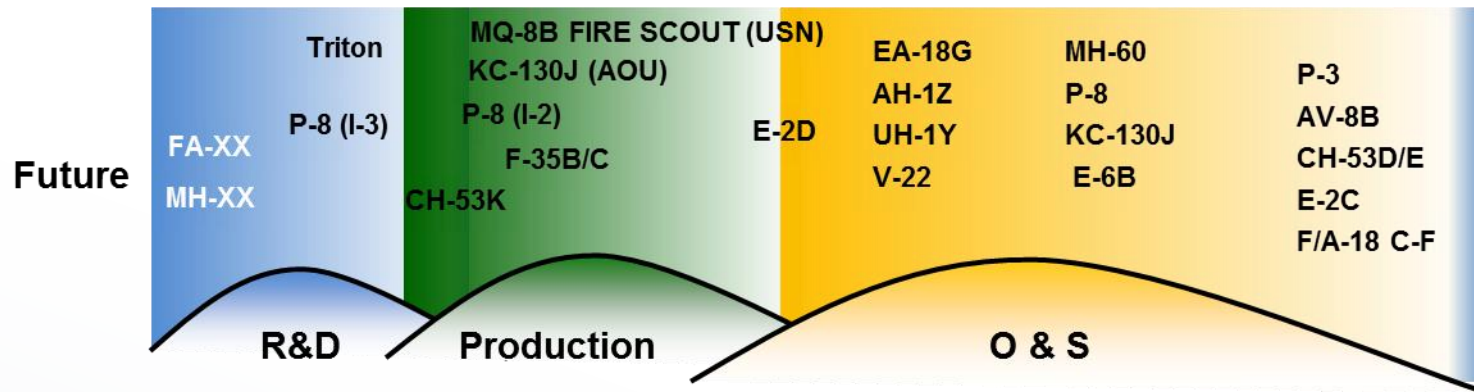
- OOR A/C in Fleet Increasing
- Cross Decking of Parts Increasing
- Decrease in Readiness Levels
- A/C Life Being Extended
- New A/C Cost More to Sustain than Existing A/C

## Logistics Issues

- With Diminishing Supply Base, Expect TATs & Cost for Repair to Increase
- Expect Increase in Obsolescence
- Configuration Management
- More Emphasis on Decreasing Industrial Footprint
- Variety of Tech Data Packages, Information in Various Forms, Separate Infrastructure Costs



# Naval Aviation Transition



## Transition to next generation of Weapon Systems

- Maintenance and logistics requirements
- Open Architectures
- Integrated Weapons Systems
- Rapid Acquisitions
- More Lead System Integrator (LSI)

- Shorten the acquisition and support timeline
- Broaden the industrial supply base
- Improve/extend life limited parts
- “Parts on demand” at every FRC
- Industrial workforce that can use AM
- Logistics workforce than can plan for AM

**Manage Associated Challenges**



# Logistics Opportunities & Challenges

## Opportunities

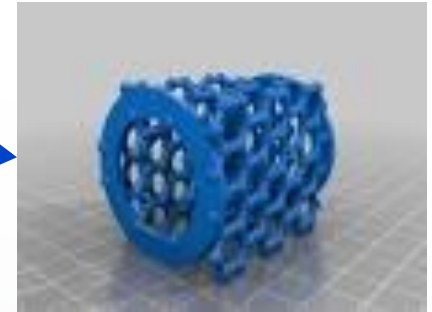
- Supply Chain Efficiencies Saves Energy and Resources
  - Speed/Infrastructure Reduction/Reduced Inventory/Reduced PHS&T
- Changes to Fleet Basing and Sparing
- Leverage Market Place to Print Parts, Government Manages Data & Industry Prints Parts
- Parts Customization and Rapid Design Cycle
- Decrease Parts Weight Through Unique Structures (e.g., Lattices)



Sheet metal mechanic and reverse engineer program the Fused Deposition Modelling (FDM) 3-D printer. The printer is primarily used to create tooling to aide in the fabrication of sheet metal parts.

## Challenges

- Enterprise Data Acquisition & Management
- Configuration Management of Parts
- R&M and Maintenance Repair Data Latency
- Flight Worthy Certification Due to Ability for Unique Structural Character
- Cyber Security (i.e., Unwanted Induced Structure & Material Anomalies)
- Data Rights



**Cohesive, Comprehensive and Current Tech Data is Critical to AM Success!**