



AIR Speed

**BRIEF TO:
DOD Maintenance Symposium & Exhibition**

**CAPT Tim Trainer
5 September 2003**

Outline

AIRSpeed

- Background
- Vision
- Organization
- Culture

NAVAIR Depot *AIRSpeed*

- Vision and Goals
- Tools
- Execution Plan
- Results to Date
- Road Ahead

Naval Aviation Enterprise

- **Where We are Today:**

- Numerous process improvement efforts underway
- Stove piped, unlinked and at times competing
- Push vice Pull systems
- Local decisions not globally aligned

Vision

AIRSpeed: An Enabling Framework for achieving and sustaining cost-wise readiness across the Naval Aviation Enterprise.

AIR*Speed* Guiding Principles

- The path to cost-wise readiness is properly managed in this order...

Throughput *MISSION*

Inventory/Investment *Parts, Equipment & Facilities*

Operating Expenses *FHP, O&MN, Manpower*

- **Local decisions must be aligned to global impact!**

NAVRIIP

AIP Management – tie metrics and cost

Senior Executive Leadership Training

O-I-D Level & Supply

TOC across the enterprise

Methods: Lean, 6 Sigma, AFAST

CPMB: Top Degraders

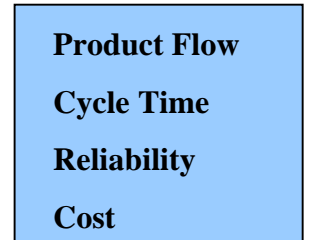
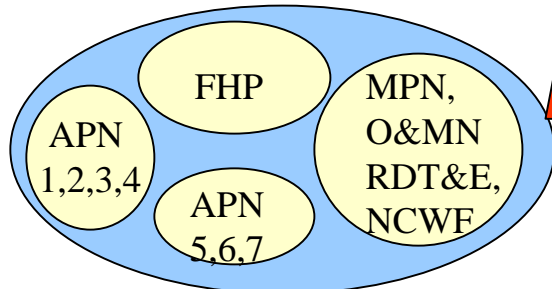
AIR 3.0

PMs

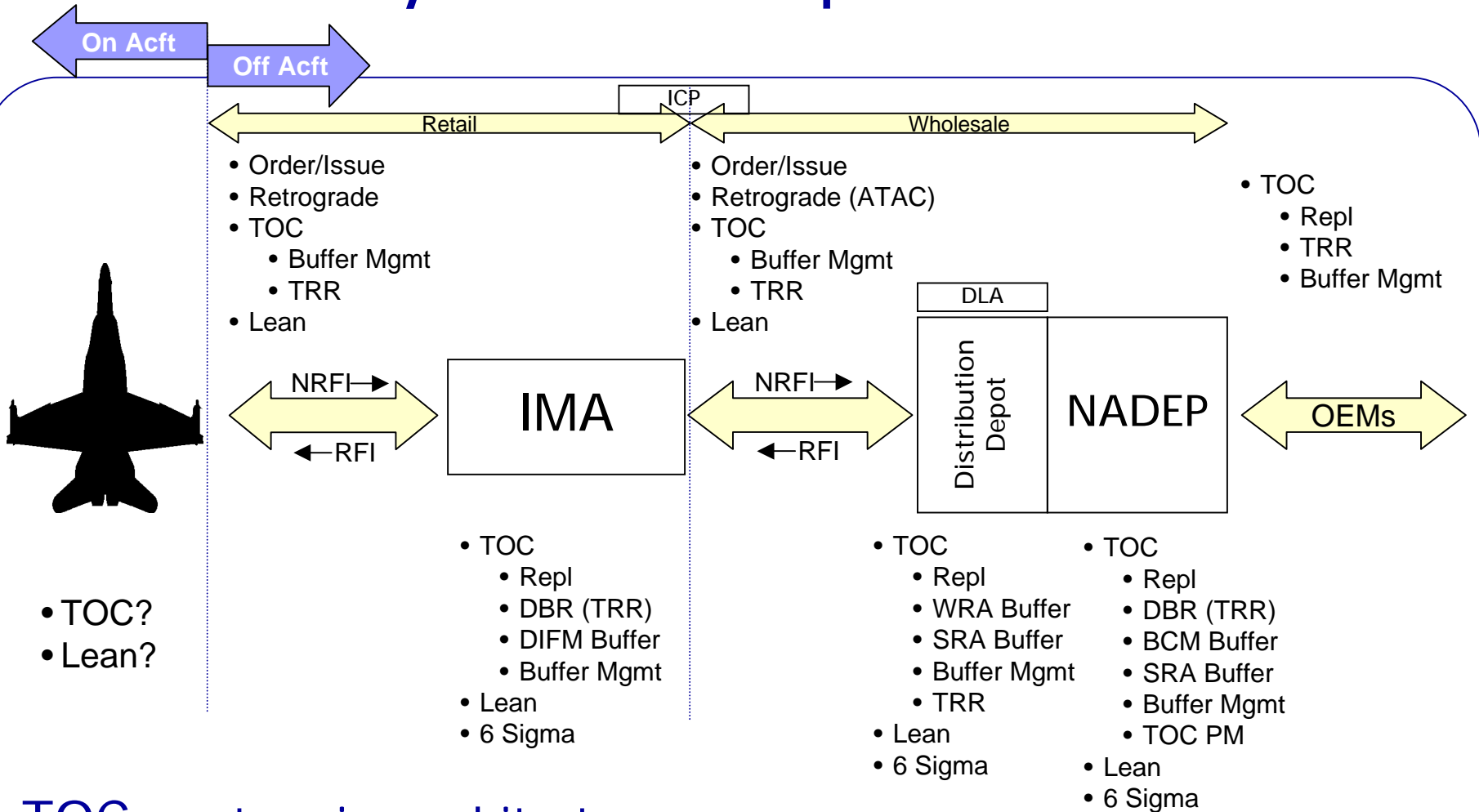
TMS Teams

Dollars

Benchmark Metrics



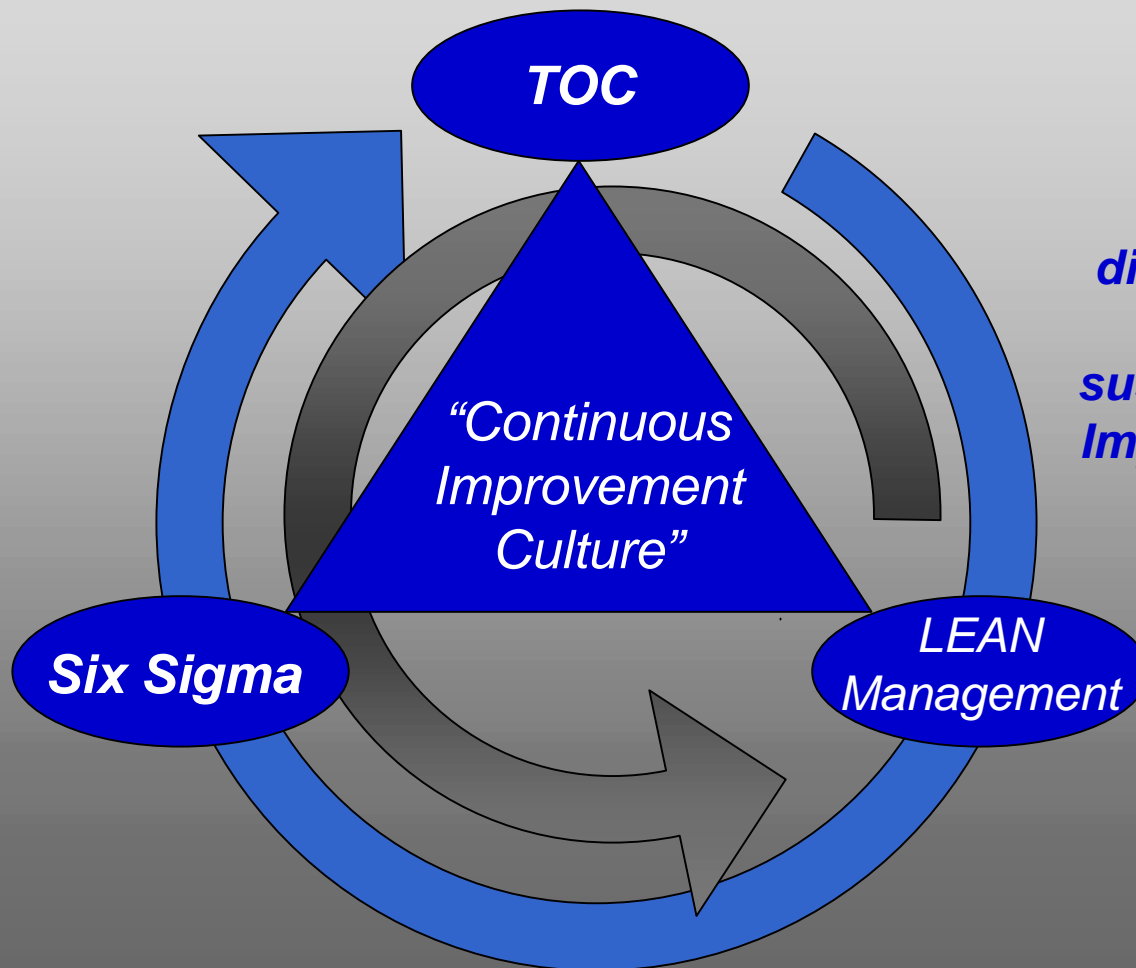
AIRSpeed Enterprise Architecture



TOC...enterprise architecture

for **AIRSpeed**

- Identifying and addressing interdependencies
- Managing and reducing variability
- Identifying and managing constraints



"Commitment and discipline are essential to building and sustaining a Continuous Improvement Culture..."

AIRSpeed “The NAVAIR Depot Vision.....”



Incorporate the most current business initiatives to enable reduced cycle times to meet the requirements and needs of the 21st century Warfighter and beyond.

- Enhance responsiveness and flexibility
- Increase the velocity of the maintenance, repair, and overhaul process
- Eliminate waste and inefficiencies
- Reduce the cost of Naval Aviation
- Share, export and integrate Depot cycle-time reduction initiatives across the enterprise through NAVRIIP
- Integrate Depot efforts with “Global” Naval Aviation Wide

AIRSpeed implementation

NAVAIR DEPOT *AIRSpeed* Plan



- An operating strategy that will leverage

- Theory of Constraints
- Lean principles
- Six Sigma



Dramatically improve depot cycle time, reduce depot pipeline and increase the total Fleet supply chain velocity

- Provides structured, systematic methodologies to enhance depot responsiveness and agility to meet warfighter needs
- Systematic identification and management of that which limits the organization or system (Constraints).
- Targets sustainable process improvement to leverage the quickest and largest improvement to performance of the system.
- Systematic identification and elimination of non value added activity and process variation across the entire enterprise.

What makes *AIRspeed* different?



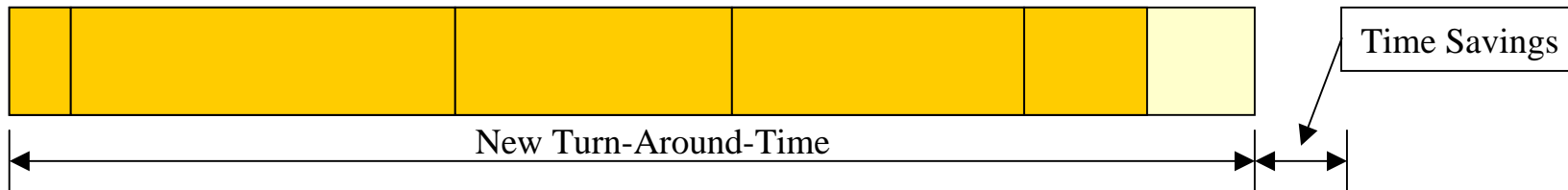
Time equals money – What is the customer willing to pay for?

 = Non value added time (waste)  = Value Added Time



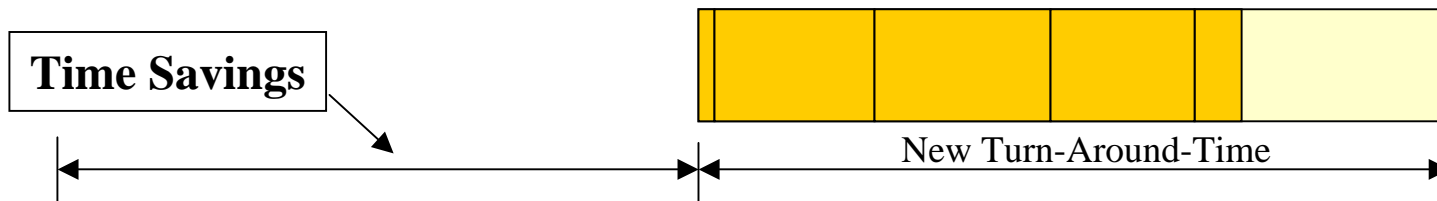
Value Added Time is only a very small percentage of the Total Turn-Around-Time.

TRADITIONAL PROCESS IMPROVEMENT RESULTS



Traditional Improvements and Cost Savings typically focus on only the Value Added activity.

TOC Lean Six Sigma PROCESS IMPROVEMENT RESULTS



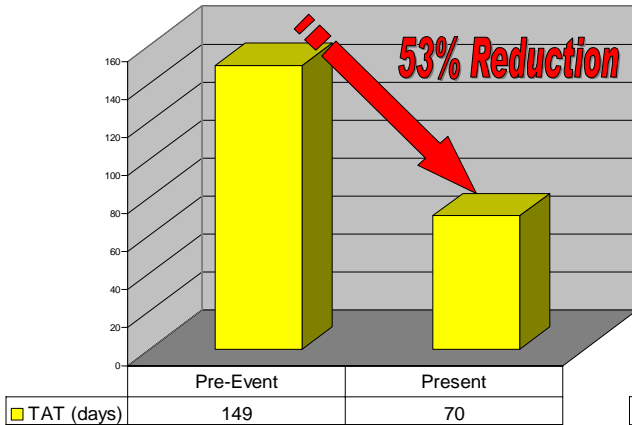
Better Method: TARGET THE NON-VALUE ADDED ACTIVITIES!

Return on Efforts to Date

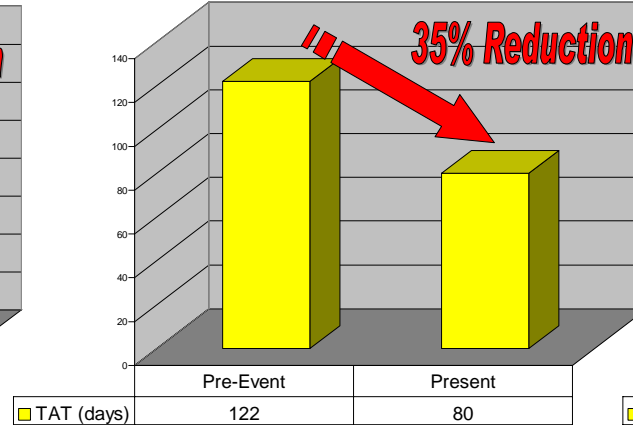


Turn-Around-Time Improvements:

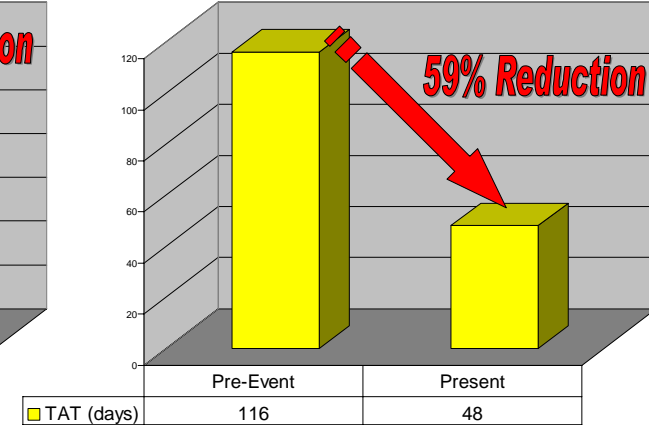
F404 HPC & Fan Cell



F404 LPT Cell

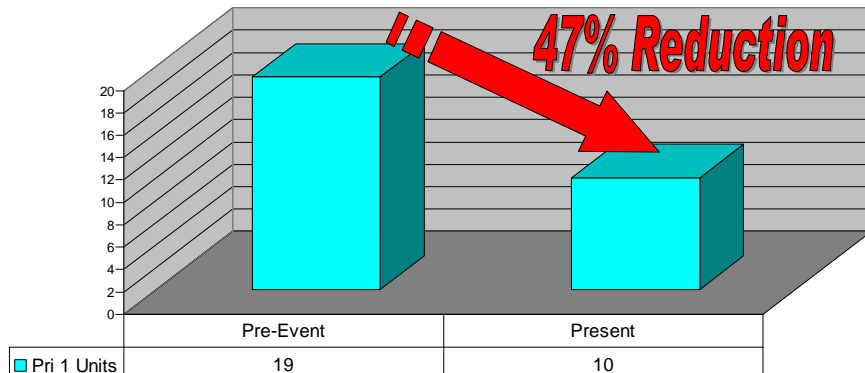


F404 HPT Cell

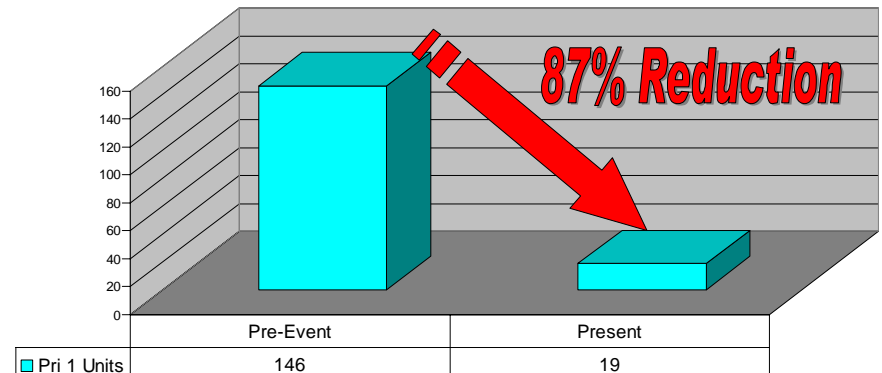


Hi Pri Requisition Improvements:

Plasma Central Process Center



Clean Central Process Center



F404 HPT LEAN Event (July 2002)

Before



After



Before



After



TOC IMPROVED H-46 THROUGHPUT



H-46 WORK-IN-PROCESS **BEFORE**



- TURN-AROUND TIME = 215 DAYS
- AIRCRAFT IN WORK = 33

MANAGEABLE WORK-IN-PROCESS **AFTER**



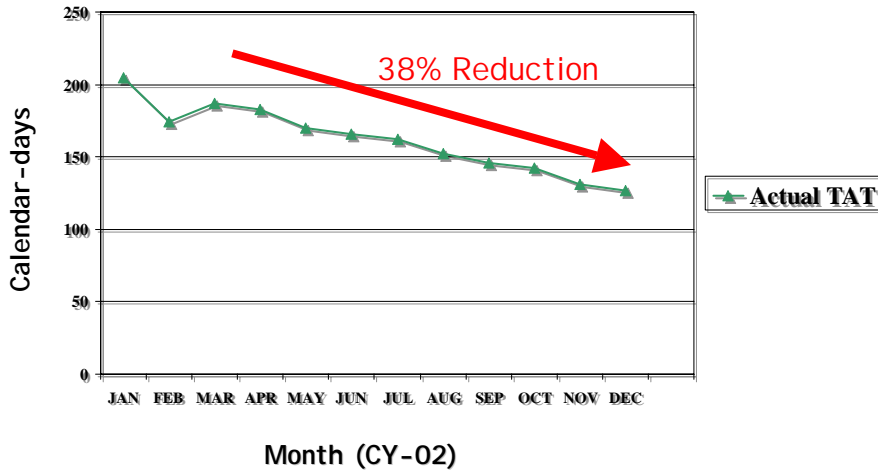
- TURN-AROUND TIME = 150 DAYS
- AIRCRAFT IN WORK = 16

Work scope increased from 9000 hrs to 13,000 + hours!

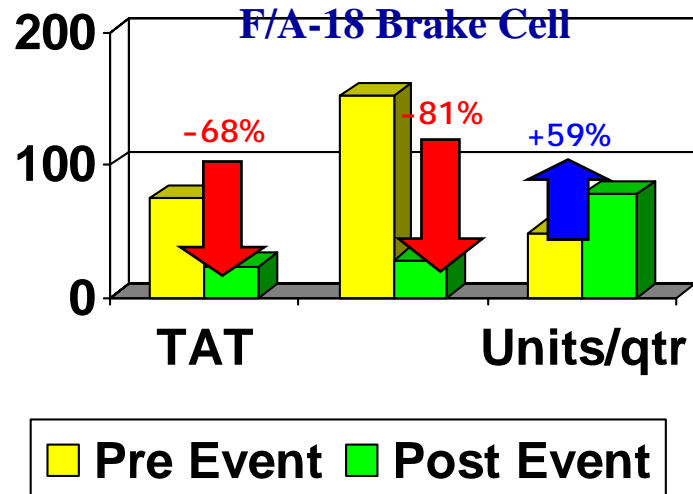
**ABLE TO RETURN FULL SQUADRON TO FLEET,
AHEAD OF SCHEDULE, WITHIN PLANNED COSTS**

AIR Speed Process Improvements

F/A-18 PMI-1 (C-Model)



Before
Lean



After
Lean



Depot *AIR* Speed Status

NADEP Cherry Point:

- Continuing “*AIRSPEED*” (TOC) deployment throughout depot currently at 70% level
 - TOC for H-46, H-53, H-1, AV-8TUP, T64, T58, F402, H53 Rotorhead and Gearbox
 - Drum Buffer Rope Implementation for Components/Backshop Processing
 - TOC Critical Chain Implementation for T400, APUs
 - TOC Operational/Performance Metrics Implementation
 - Related Business Process/SOP Development for TOC
- “*AIRSPEED*” (Six Sigma) effort on-going with GE for T64
- SOW in-process for “*AIRSPEED*” (LEAN) activities Estimated start: SEPT 03

NADEP Jacksonville:

- “*AIRSPEED*” (LEAN) events in-process and scheduled:
- Landis Grinder: MAR 03 (in process)
 - Clean: MAR 03 (in-process)
 - Plasma: MAY 03 (in-process)
 - NDI: 21-25 JUL03
 - Waterjet: SEP 03
- “*AIRSPEED*” SOW under final review: On track for contract award Oct 03.

NADEP North Island:

- “*AIRSPEED*” (LEAN) events in-process and scheduled:
 - Components Shops (near-term)
 - Landing Gear Shop: 16 JUN
 - S-3 Strut Shop: 21 JUL
 - Brake Shop: 21 JUL
 - F/A-18 PMI-1 Line (near term)
 - PMI-1 Assembly: 21 JUL
- “Auto-Crib” prototype on F/A-18 PMI-1 line 11 AUG
- Process Audits SOW for F/A-18 IMC and E-2 PDM under final review.
 - Contract award Sep 03.
- TOC SOW for H53 and C-2 SLEP in final development stage.
 - Contract award Sep 03

The Road Ahead

- **Overall Depot Plan:**

- Continue ongoing Lean, Six Sigma and TOC rollout - FY03-05
- Integrate with TOC centered Enterprise AIRSpeed via T/M/S rollout/deployment
- Integrate depot metrics with NAVRIIP Naval Aviation Enterprise metrics
- Support Enterprise conversion to pull system for comp, eng and acft scheduling
- Invest in cycle time reduction where it makes sense to support CNO's Fleet Readiness Plan and "Cost Wise" readiness
- Utilize Enterprise AIRSpeed to prioritize cycle time reduction efforts
 - *Warfighter (customer) Establish the drum beat*
- Harmonize Depot CT reduction efforts through Enterprise AIRSpeed

The Road Ahead (Cont.)

- **Optimized maintenance/supply chain**

- produce only what warfighter needs
- when it's needed
- Where most efficiently produced

*Warfighter
Pull*

- **Improve system velocity then evaluate capacity**

- Retire excess capacity – savings
- Retain desired capacity – RFT/O, FRP surge

*Warfighter
Decision*

- **Integrate “Factory” with the fleet**

- **Map Value Stream across the enterprise**

- **Optimize to meet RFT/O entitlement to support CNO's Fleet Response Plan (FRP)...at Least Cost**