



AEROSPACE SUPPORT

UNIQUELY CAPABLE OF TOTAL SUPPORT

Aerospace Support Presence

12,500 people at ~ 120 sites



Legend:

- ★ Major Facilities
- 100 or more people
- 11-99 people
- 10 or fewer people

Our Markets

- Contractor Logistics Support & Services
- ➔ Maintenance & Modifications
- Supply Chain Services
- ➔ Modernization & Upgrades
- Training & Support Systems
- Life Cycle Customer Support



Maintenance and Modifications

Description

- **Major programs:**

- KC-135 Programmed Depot Maintenance
- KC-10 maintenance and modifications
- C-17 maintenance and modifications
- F/A-18 upgrades and modifications

- **Key sites:**

- San Antonio, Texas
- Jacksonville, Florida
- Mesa, Arizona



Modernization and Upgrades

Description

- **Major programs:**

- C-130 Avionics Modernization Program
- Derivative and tanker upgrade programs
- T-38 Avionics Upgrade Program
- Bomber programs
- VIP/SAM presidential fleet modifications and support
- Airborne Laser modifications

- **Key sites:**

- Wichita, Kansas
- St. Louis, Missouri
- Long Beach, California



Lean MRO Success Requires Whole System Approach

Production Tactics		Deliverable
1	Value Stream Analysis	Current and Future State Maps
2	Balance the Line	Distribute Work by Shift and Position
3	Standardize Work	Operator Sequence / Bar Charts
4	Visuals in Place	<ul style="list-style-type: none"> • Operator Sequence / Bar Charts • Quality / Cost Metrics
5	Point of Use Staging	<ul style="list-style-type: none"> • Jobs Kitted and Staged at Point of Use • Kanban Replenishment Process
6	Feeder Lines	Parallel Work Moved To Feeder Lines
7	Continuous Flow Line	Product Flow is Paced at TAKT Time

Lean Maintenance / Repair / Overhaul Challenges

Work Scope Variability

Engineering Authority Approval

Customers as Suppliers

Over & Above Approval Process

Over & Above Supply Chain

Partnership Focus

- Quality / Cost / Cycle / Inventory / Delivery

Agile Organization & Processes

- No Two Airplanes are Alike

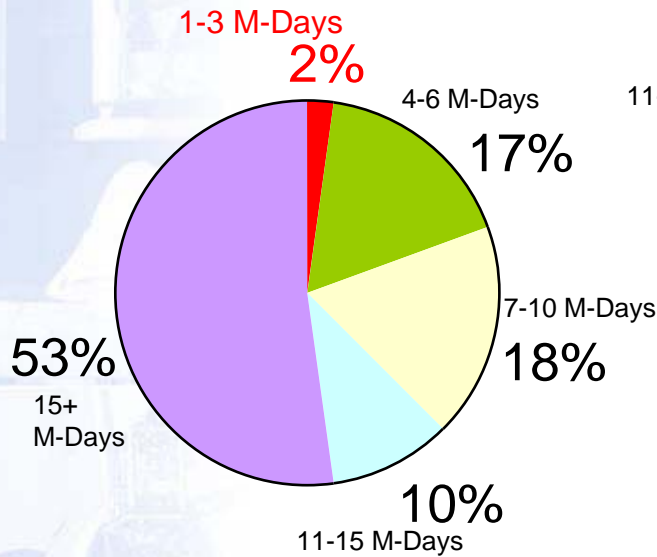
Responsive

- Inside TAKT Window

MILSTRIP Part Delivery Performance

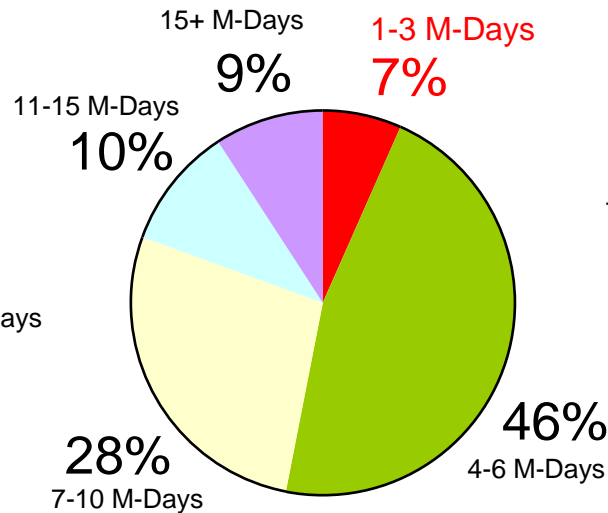
(T-38C Over & Above)

**Prior to Joint
Government / Boeing
Team chartered**



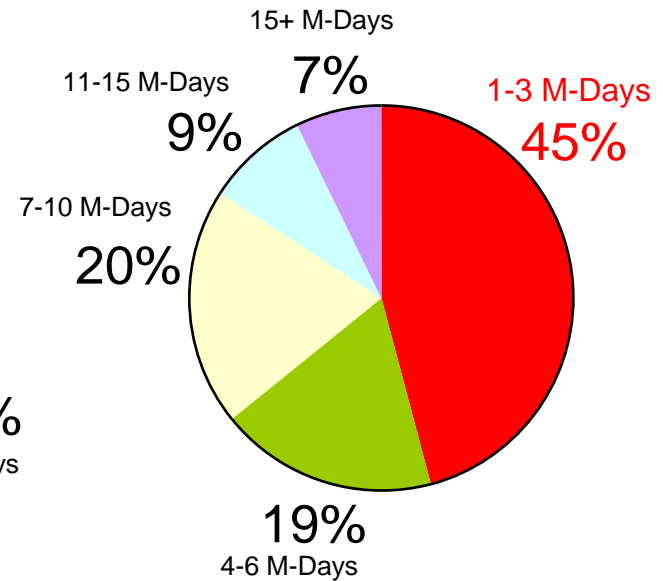
(ATP thru March '02)

**Decision Tree Logic
Deployed**



(Jun '02 to Jan '03)

**Standard Base Supply
System Process
Established**

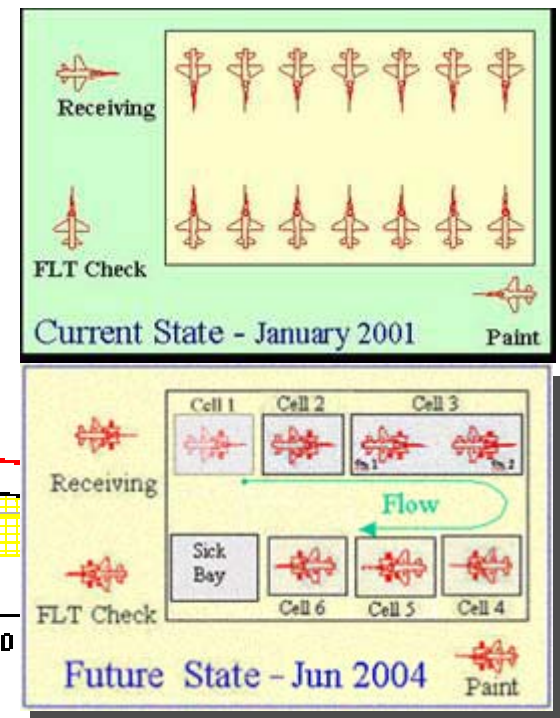
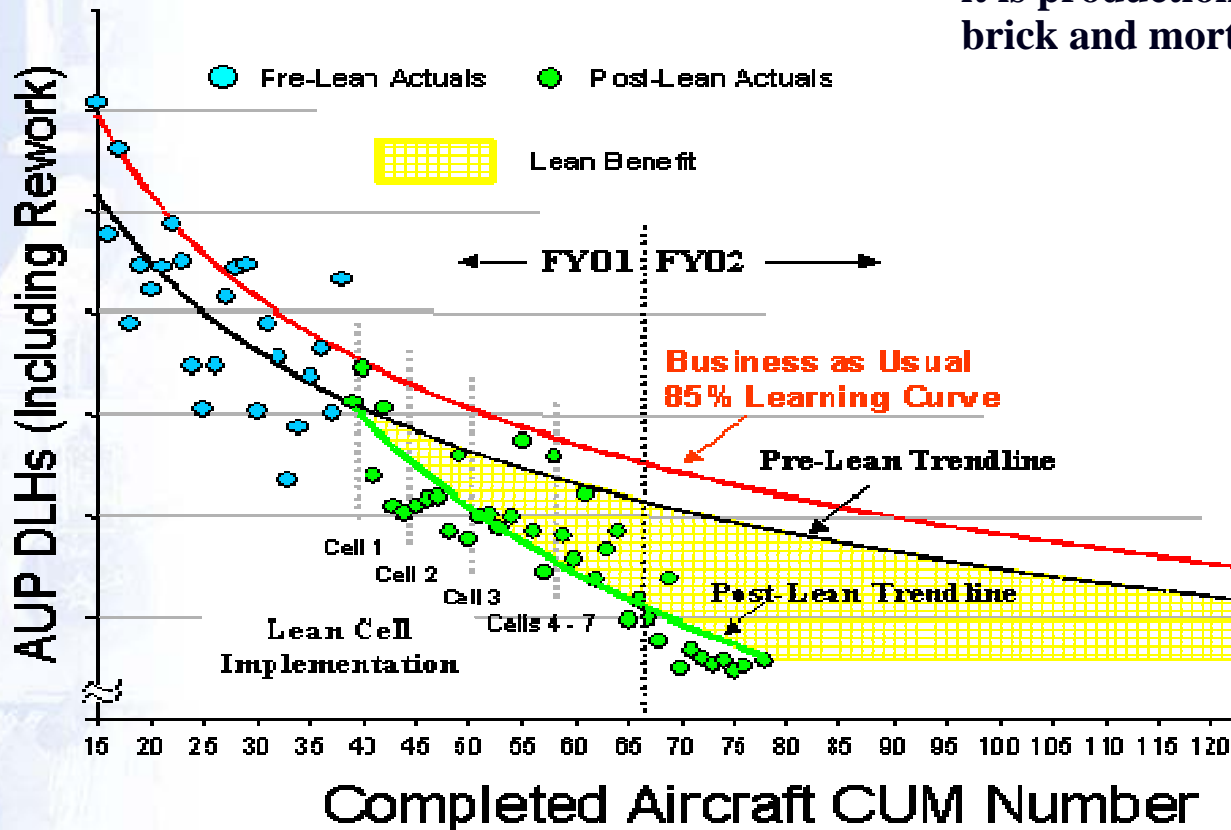


(Feb '03 to 05 May '03)

100% On-Time Delivery to Contract thru CUM 258

Direct Labor Hrs for Completed T-38C A/C During Lean Transition

- Implementing Lean principles is synonymous with changing workforce culture.
- A successful transition to a Lean enterprise production system is as much about the people and culture transition as it is production flow and reconfiguring brick and mortar.



T-38C Value Stream Comparison

Sub-Optimization
Yields ~30% Improvement

Lean From a Whole System Perspective
Yields >100% Improvement

Metric	LRIP 1 (Dec '00)	Project Baseline (Sept '01)	Future State * (Aug '03)	Current Status (Sept '04)
Delivery (Units / Mo)	1	4	7	7
Cost (DLHs / Aircraft)	100%	87%	30%	31%
Inventory (Units in Flow)	6	14	10	10
Cycle (M-Days)	109	64	30	30
Quality (Defects / 1K Hrs)	NA	25.3	10.5	4.6

* Projection Made July 2001



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