TEAM HILL

Ogden Air Logistics Center

U.S. AIR FORCE

Transformation from an MRO Perspective

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Rick Dugan
309 MXW/QP
Ogden ALC, Hill AFB UT
DSN 775 – 2327

Purpose

Provide an Understanding of How Transformation Occurred at Hill AFB, UT, OO-ALC, 309 MXW, a Major Department of Defense Maintenance, Repair and Overhaul Operation

Overview

- Who We Are
- What We Do
- Case Studies
- Summary

Who We Are

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BE AMERICA'S BEST

Who We Are

- **309th Maintenance Wing**
  - 8,000 person (govt civilian/contractor/mil) organization
- **309 MXW Mission Statement**
  - Consistently produce quality products and services on time, at or below cost and continually improve our Aerospace Management System in order to remain "America's Best" Maintenance, Repair and Overhaul operation
- **Accolades**
  - Blk 50 CCIP—2005 Shingo Silver Award
  - F-16 Pylon—2005 Shingo Silver Award
  - F-16 Enterprise—2006 Shingo Gold Award
  - AS9100 Certified

What We Do

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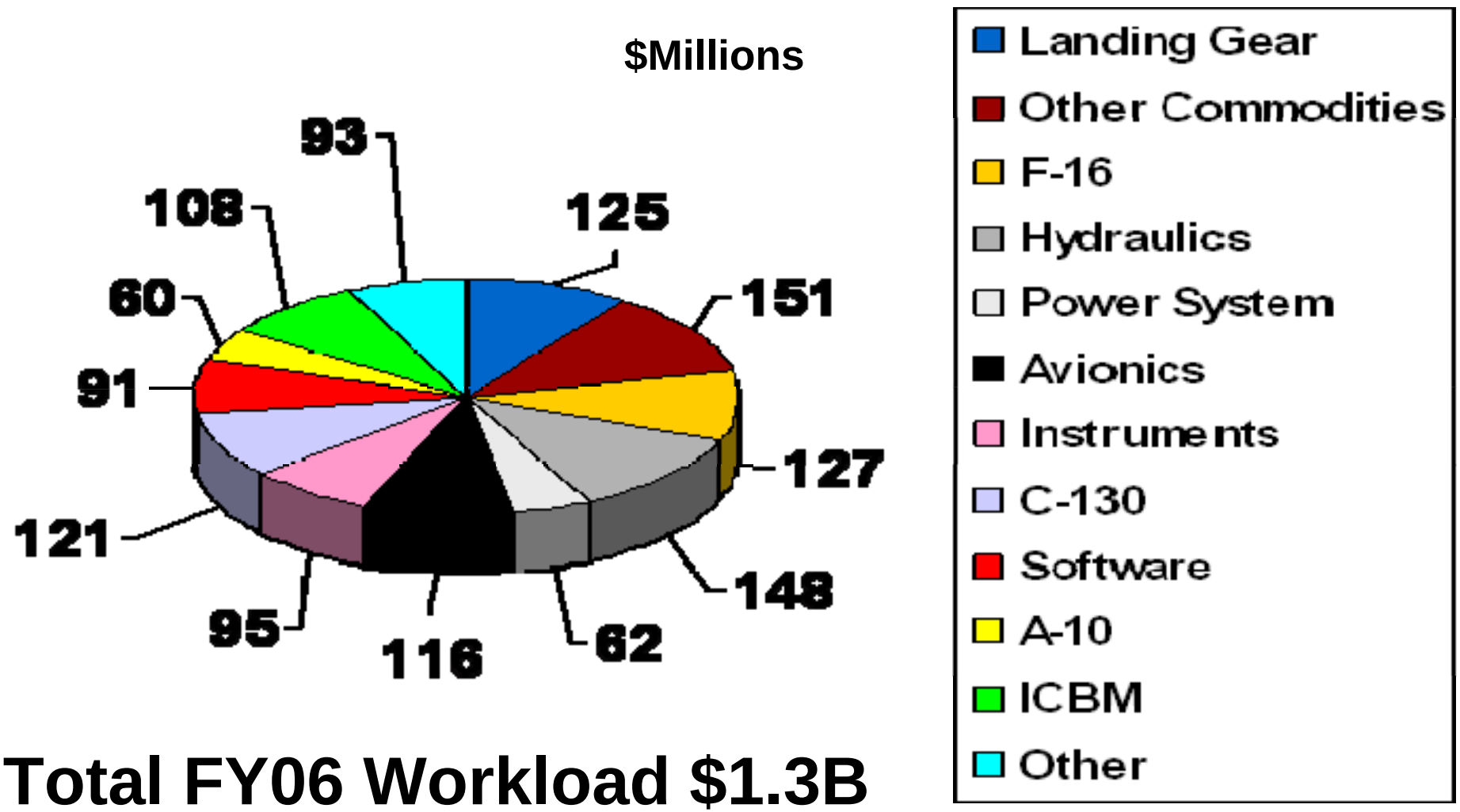
What We Do

- MRO activities Supporting F-22, F-16, A-10, C-130, ICBMs, thousands of Commodities
- 282 Facilities
  - Over 4.5 million square feet of production space
- Generates over 7.1 million production hours annually
- Annual workload of $1.3B

What We Do



Total FY06 Workload $1.3B

F-16 Radar Antenna Example

- **Ogden Challenge:**
  - High MICAP/Backorder Incidents
  - Not meeting Customer demand
- **Actions Taken:**
  - Formed core Lean team in shop
  - Created standard work sheets
  - Established Point of Use parts system
  - Established standardized inspection checklists
  - Formed One-Piece Flow cell
  - Established daily QCDS (Quality, Cost, Delivery, Schedule) board meetings

F-16 Radar Antenna Prior to Lean

ANTENNA IN

Stand-alone work station

Stand-alone work station

Stand-alone work station

Stand-alone work station

Stand-alone work station

Stand-alone work station

Queue Waiting

AIS TEST STATION

RADAR TEST RANGE

ANTENNA OUT

Prior Method

6 Stand-alone Work Stations

No Standardized Methods

Non-centralized Supply

Excessive Travel for Parts/Assets

Excessive Waiting Between Stations

F-16 Radar Antenna After Lean

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One Piece Flow Process

Cellular Operation	Single-piece Flow
Standard Work	Point of Use tools
On-cell Computers	Point of Use supply

TAKT Time: 2 hr 45 min

ANNTENNA IN

Disassembly station

Clean and Troubleshoot

Assembly

Final test and Inspection

AIS Test

Range Test

ANTENNA OUT

F-16 Radar Antenna Metrics

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Flow Days

Impact: Increase Asset Availability

Before 28 Days

After 3 Days

Work in Process

Impact: Free-up Maintenance Dollars

Before 67 Antennas

After 6 Antennas

Back Orders

Impact: Increase Asset Availability

Before 180 Units

After 0 Units

Annual Parts Travel

Impact: Increase Asset Availability

Before 1,950 mi.

After 33 mi.

Mean time Between Failures

Impact: Increased Aircraft Availability

Before 425 Hours

After 661 Hours

MICAP Hours

Impact: Increase Aircraft Availability

Before 30,262 Hrs

After 470 Hrs

PT III Missile Trailer Example

- **Ogden Challenge:**
  - WIP consuming space needed for new workload
  - Long flow days
  - High number of QDRs
- **Actions Taken:**
  - Formed core lean team, including mechanics, planner, scheduler, PMT
  - Rewrote WCDs to correctly sequence work & combine track-points
  - Developed plan for man-loading
  - Created standard work sheets
  - Established point of use parts system
  - Established standardized inspection checklists

PT III Missile Trailer

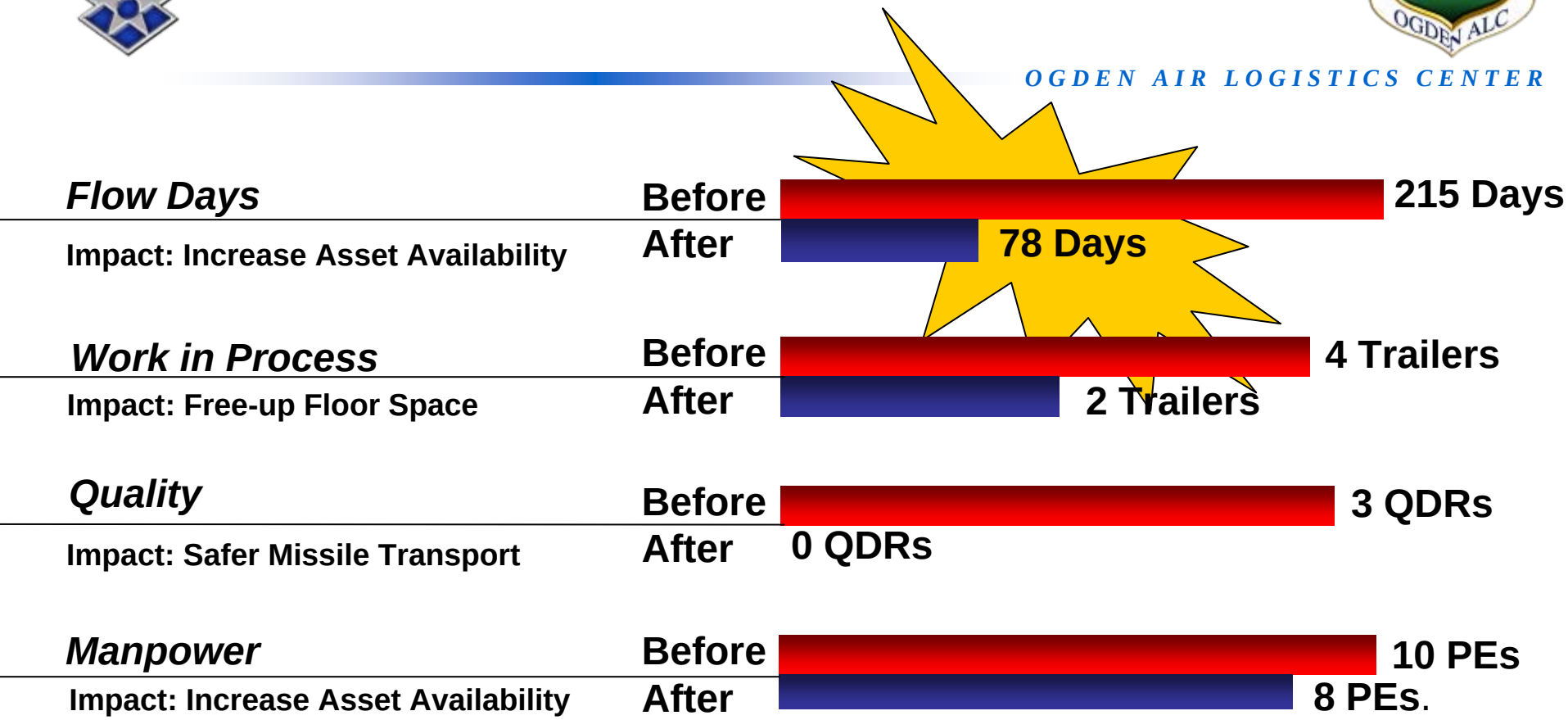
Prior to Lean

- No standardized methods
- At least 4 trailer stalls in use at all times
- Trailer waited for parts --consuming space and time
- Often only one employee working on tractor at a time

After Lean

- Man-loading
- Standard work
- Parts available before trailer arrives
- Parts at point of use
- QDRs rare
- Point of use tools
- Freed-up space accommodating new workload

PT III Missile Trailer Metrics



F-16 Harness Shop Example

- **Ogden Challenge:**
  - Production line delivering parts in ‘batches’ creates excessive WIP
  - Modify aircraft parts in a timely manner
  - No visual management program
  - Establish quality, delivery and cost metrics
  - Reduce wait time for harness production / LRU repair
- **Actions Taken:**
  - Scheduled receipt of aircraft parts to coincide with aircraft induction to Production Line
  - Level loaded work among two 6-member teams
  - Improved visual management
  - Displayed quality, delivery and cost metrics for team members to see
  - Consolidated MWR to decrease production line wait time