BREAKING THE LEARNING/DEVELOPMENT CURVE

Derick Martin, CPI Aerostructures
2016 Project Management Symposium
BREAKING THE LEARNING CURVE

Derick Martin ✩ Program Manager ✩ CPI Aero

A Premier Supplier of Aircraft Structure

CPI AERO
NYSE MKT: CVU
Phenom 300 Engine Inlet Assemblies

- 6-10 passenger executive jet manufactured by Brazil-based Embraer S.A.
- Best-in-Class for three consecutive years

**ENGINE INLET ASSEMBLIES:**

- **Program Management:**
  - Dedicated & specialized program team
- **Supply Chain Management:**
  - Global supply chain of 25 suppliers with unique specialties
- **Planning:**
  - High rate / Constantly evolving program
- **Manufacturing:**
  - Complex, spherical assembly
  - 50 detail components / 40 unique hardware variations
  - Polished lip skin and scoop
- **Quality:**
  - 100% Digital Inspection (CMM)
  - High visual standards
Early Challenges

Steep Ramp Up
- Sole-source offload from another supplier
- Phenom 300 aircraft in full production cycle
- Unproven manufacturing instructions
- Complex assembly

Poor Communication
- Expectations difficult to set
- No visual displays
- Results not communicated to manufacturing
- Confusion about responsibilities in IPT

Quality
- Recurring quality issues
- Lost time for rework, re-inspection
- MRB Tags to customer
- Poor confidence level

Rate Tooling / Lean
- 1 set of assembly fixtures insufficient for rate
- Poor Product flow
- Misplaced tooling details
- Misplaced detail parts
### Before Plan Implementation

**Delivery**
- Unable to forecast
- Inconsistent output
- Failure to achieve ramp up milestones

**Quality**
- Paralyzing, recurring defects
- Root cause difficult / impossible to isolate

**Perception**
- External
  - Concern: Viability of performance
- Internal
  - Concern: Viability of performance
Execution of Plan  
(The Road to Performance)

Jan 2014

Primary Visual Displays

- Allowed mechanics to gauge expectations / performance
- “Andon” lights provided feedback on schedule, manpower, quality and constraints
- Performance reflected on weekly basis
- Two-way vehicle for communication

Feb 2014

Teaming Efforts

- Closer collaboration with Embraer
- Empowered IPT Team
- Divided mechanics into two groups
  - LH Inlets VS. RH Inlets
  - Encouraged friendly competition
  - Drove results

Jun 2014

Quality Tools

- Track sheet for isolation tool-related quality issues
  - Filled out by mechanic at point of use
  - Allowed quality engineer to isolate which tools are yielding defects

2015 & Beyond

Sharing of Successes

- Sharing successes encourages performance
  - Banners
  - Shirts
  - Breakfasts
  - Employee Recognition
Since the onset of the program, CPI entered into Embraer’s business looking for a long-term relationship and has demonstrated over the years what Embraer strives for in its supply chain. Committed to results, communication, relationship and quality to product, CPI Aero shows willingness to be one of the best suppliers for Embraer.

The shared values between the companies generate value to the business, as any challenge taken in place is overcome with teamwork and collaboration.

-Embraer Supply Chain Team

Improved deliveries from 2 s/s to 15.5 s/s per month from Jan 2014 to Nov 2015

Increased quality to 100% and have maintained that rating for over a year

Restored customer confidence in CPI Aero’s abilities to perform and adjust to a high-rate, dynamic program