



Bell V-280 Valor Best Practice

“Best Time” Delivery



Honeywell



- Design/Build fuselage for V-280, next-generation tiltrotor
- Leveraged Spirit's rapid prototype capability
- 22 month design and build schedule
- Supporting the Joint Multi Role Technology Demonstration program (JMR-TD)
- Program will reduce risk, inform requirements for Future Vertical Lift Program (FVL)



What was the situation faced by your program that you were addressing with this best practice – why this, why now, what was the urgency?

Program Elements

- Make/Buy plan was all details and sub-assemblies – Buy
 - One unit design/build
 - 22 month Design/Build Effort
 - Five month unit #1 Build

Program Situation

- Aggressive Schedule
 - Clean sheet design
 - Key Tiltrotor design elements (inherent dynamics effects)
 - (2) large troop doors directly under the wing
 - V-Tail
 - Off the shelf landing gear
- ***Heavy pressure on the supply chain***

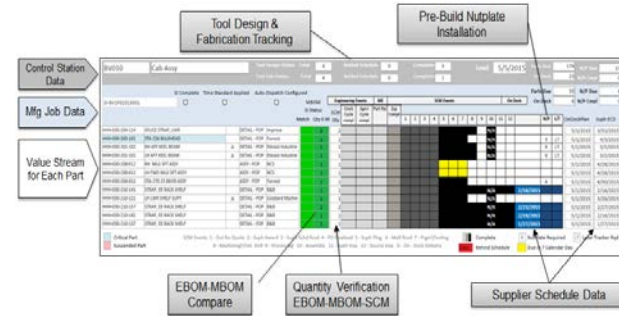


Spirit understood the challenges the compressed schedule would put on the supply chain

- Principles of the Best Practice
 - Very early engagement of the supply base - Supplier symposium (share the vision and opportunity)
 - Supplier selection based on supplier scorecard past performance (nimble/quality/delivery)
 - **Allowed the suppliers to offer delivery dates – Drive early delivery (flexibility/schedule buy-in/remove excuses, supplier provided schedule) *Best Time Delivery***
 - Very detailed tracking process managed the supply base
 - Supplier visits early and often (program management, chief engineer and supply chain)

What was involved in implementing this best practice – what were the most critical steps you took, what did you learn along the way

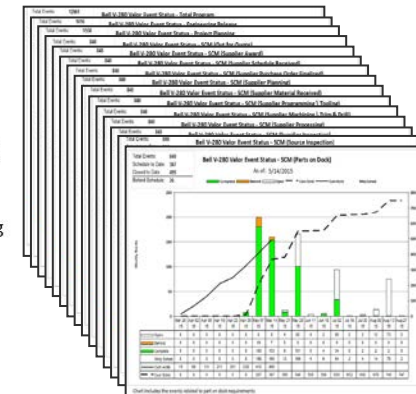
- The program decided to utilize our production system processes base architecture and:
 - Significantly enhance the granularity
 - Created an Access database (provide weekly metrics)
 - Added (11) supplier metric points
 - Daily status standups with key Integrated Product Team members
 - Validate status with supplier on site visits
- Both internal and external suppliers can perform beyond their own expectations if they are challenged and managed well*



Detail Part Tracking Access Database

Tracked Events

- Out for quote
- Supplier Award
- Schedule Received
- Purchase Order Final
- Material
- Planning
- Programming/Tooling
- Machining
- Processing
- Assembly
- Supplier Inspection
- Spirit Inspection
- On Dock



Detail Plan →

Production Purchased Part Metrics

V-280 Purchased Part Metrics

Best Practice Results

What were the results of implementing this best practice? What was toughest about doing this? What would you do differently if you had the opportunity?

- **Early/On master schedule delivery** **95%**
- **Late to master schedule delivery** **5%**
- **Detail Parts First Pass Yield** **90%**
- **Delivered the fuselage** **21 Months – 1 Month Early**
- **All customer interfaces** **Met or underrun master schedule**
- **Implementation Difficulties**
 - Both internal and external process acceptance (very detailed in process tracking)
 - Maintaining the shared vision
- **Improvement Opportunities** *(ready for new defense contract)*
 - Enterprise web based data/metrics
 - Reduce the percentage of human interface

