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Limited to Boeing Personnel

Commercial Airplanes

Business Environment, Project Phoenix, Supply Chain Alignment

Scott Carson

Boeing Commercial Airplanes

April 27, 2009

NLRB-004245

Boeing Proprietary - Limited to Boeing Personnel

Supply Chain Alignment Project Gemini

Commercial Airplanes | Supply Chain Management and Operations

▪ Strategy / Purpose

- Solution for establishing long-term manufacturing capability outside of Puget Sound, starting with a second 787 final assembly line and progressing to the next new airplane program

▪ Considerations

- Investment
- Skills and capability requirements
- Production system efficiency/capacity
- Labor relations considerations
- Political considerations

Next Steps

- Finalize site selection and develop labor and political engagement strategy and communications plan

Developing solutions for a 787 second line



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Board of Directors Meeting

Board of Directors Meeting

BCA Strategy

Scott Carson

President and CEO
Boeing Commercial Airplanes

August 24, 2009

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Project Gemini

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Benefits

Red Team (South Carolina)

- Alternative site for Final Assembly and Delivery capability
- Synergy to other coded projects (Secretariat, Horseshoes 2)
- Baseline for future programs

Blue Team (Washington)

- Reduced leadtime to achieve production rate
- Less overhead support structure required
- Ability to move crews from line-to-line more efficiently
- Alternative tied to union concessions

Costs

(Preliminary*)

*Further review required

- [REDACTED] NR investment
- [REDACTED] NPV delta
- [REDACTED] Margin impact

Dual Source:

- [REDACTED] est. investment

- [REDACTED] NR investment
- LRBP Baseline NPV
- LRBP Baseline margin impact

Next Steps

- Aug 26th - Initial permit filing
- Retention of legal and engineering firms
- Negotiations with state over incentives
- Sep 10th - IAM decertification election
- Sep 28th - Contractor selection

- Aug 26th - Inform elected officials and union leadership of permit filing
- Aug 27th - Meeting with IAM leadership
- Sep - Negotiations with IAM

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Red Team (South Carolina)

Blue Team (Washington)

Risks

- Production ramp-up duration while introducing significant derivative (787-9)
- Capability and capacity of dual source suppliers
- Inexperienced workforce
- Limited delivery management experience
- Duplication of Boeing technical support
- Continued support of favorable tax incentives in WA state
- Labor morale/disruptions on existing programs
- Customer acceptance

- Union dependence
- Cost competitiveness
- Business continuity (all major production at single site)
- Relocation of 767 Final Assembly
- Relationship with S. Carolina elected officials

Red risks achieving timely rate requirements...while Blue would not create long-term change in union leverage

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Board of Directors

Gemini Update

October 19, 2009

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Objectives

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- **Regain customer reputation for reliable products, deliveries, & support**
- **Improve company cost competitiveness, short & long term**
- **Leverage 787 final assembly placement decision by rebalancing an unbalanced & uncompetitive labor relationship**

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Rationale

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- **Creates a non-union, competitive labor choice**
 - Lowers labors costs and avoids current hostage situation
 - Anticipates global competition
- **Establishes a differentiated center of excellence for large, composite commercial aircraft**
- **Captures logistical efficiency**
 - Proximity to Boeing Charleston, Global Aeronautica, and Dreamlifter
- **Develops capability to transfer final assembly & delivery operations**
 - Current and future programs
- **Adds geographic diversity to operations**
- **Adds important political support from a key state**

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Cons

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- **Skill dilution**
 - Management, engineering, manufacturing support
- **Short term productivity hit**
 - Achieving learning curve effects in a Greenfield facility
- **Startup costs**
 - Significantly greater than incremental capacity increase to Everett
- **Introduces additional schedule, customer mitigation risk**
- **Negative impact to 787 program profitability**
- **Political backlash from important DC and Washington State players**
- **Management distraction and capacity**

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787 Second Line Decision

Jim Albaugh
October 26, 2009

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Objectives

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- Support customer with reliable products, deliveries and support
- Improve company cost competitiveness, short & long-term
- Leverage 787 final assembly placement decision by rebalancing an unbalanced and uncompetitive labor relationship

Everett 2nd Line

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- Pro's
 - Experienced workforce on 787 with ability to draw from other programs
 - Dedicated line for introduction of 787-9
 - Lowest cost of implementation
 - Facilitates a centralized management focus
 - Simplified supply chain
 - Washington delegation and IAM support for C-17
- Con's
 - Perpetuate an unbalanced relationship with IAM and out of market economics
 - South Carolina delegation relationship
 - No diversification of final assembly and delivery capability

Charleston 2nd Line & Surge Capacity

Commercial Airplanes

- Pro's
 - Establishes Center of Composite Manufacturing, Final Assembly and Delivery outside of Puget Sound increasing geographic diversity of operations
 - Creates a competitive labor choice and counterbalance to Union leverage
 - Adds political support from a key state and region
 - Increases options for future workplace decisions
 - Customer perception
- Con's
 - Cost \$1.5B in cash and reduces earnings on 1/3 of backlog
 - Potential labor issues – work to rule, strike and Tanker support
 - Washington delegation relationship – C-17
 - Additional supply chain complexity
 - Management bandwidth
 - Customer perception

Gemini | Program Risk Summary

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1. Greenfield Site

- Executability of a greenfield final assembly and delivery site for a major program that is not rate capable or stable
- Introduction of first commercial final assembly and delivery site outside of Puget Sound
- Achieving supply chain performance with reduced Boeing oversight
 - Six rate breaks
 - Concurrent introduction of 787-9, a major derivative
 - Capture of production system efficiency

2. Skill Dilution

- Satisfying demand for skills outside Puget Sound high risk due to peak requirements in Puget Sound for airplane deliveries [REDACTED], engineering (staffing for 787-9, Tanker, [REDACTED]) manufacturing support (management, IE, ME, delivery expertise)

3. Dual Rate Build-Up (Everett & Charleston)

- Ability to increase rate at two final assembly sites

4. Outsourcing of 787 Internally Fabricated Parts

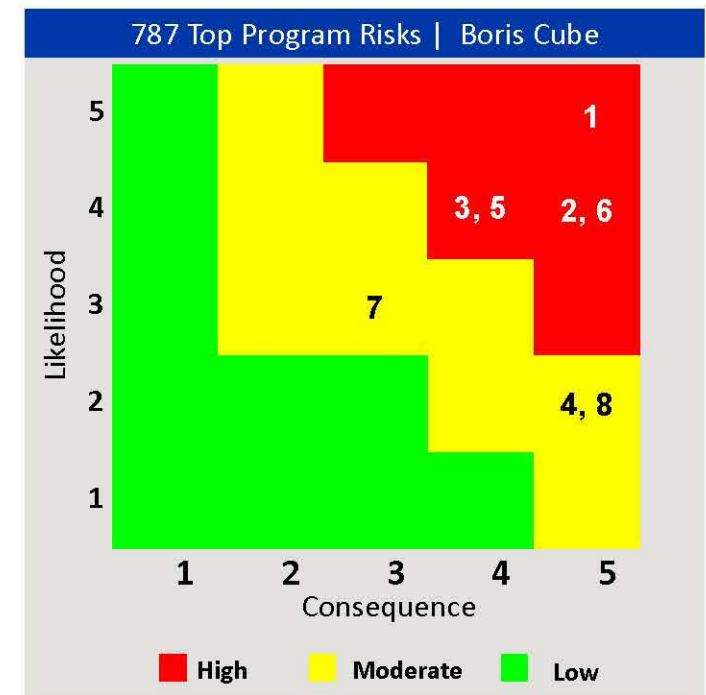
- Standing up second sources in a timely and efficient manner without impact to final assembly

5. Mixed Model Production on a Single-Line in Everett

6. "Payback" Strike in 2012

7. Leadership Team Fatigued and Subject to Burnout

8. If Poorly Executed, Additional Loss of Reputation with Customer



High Risk to Program Execution
Limited to those cleared on Project Gemini

Evaluation of South Carolina Incentive Offer

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Dollars in Millions

STATE INCENTIVES / CREDITS

STATUTORY SALES TAX INCENTIVES

TRAINING

LOCAL INCENTIVES - PROPERTY TAX

SPECIAL LEGISLATION

100% ABATEMENT OF THE LCF's

PREVIOUS APPLICABLE INCENTIVES

Bonds

TOTAL

- State Incentive enacted either:
 - Week of October 26th, 2009 via special session
 - Week of January 12th, 2010
- Incentives tied to purchase of goods or as training is performed

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