



Engineering, Test & Technology  
Boeing Research & Technology

# It's All About the Flow: Our Journey Toward Simplification



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# Innovating To Meet the Challenges of the 21st Century . . . and Beyond

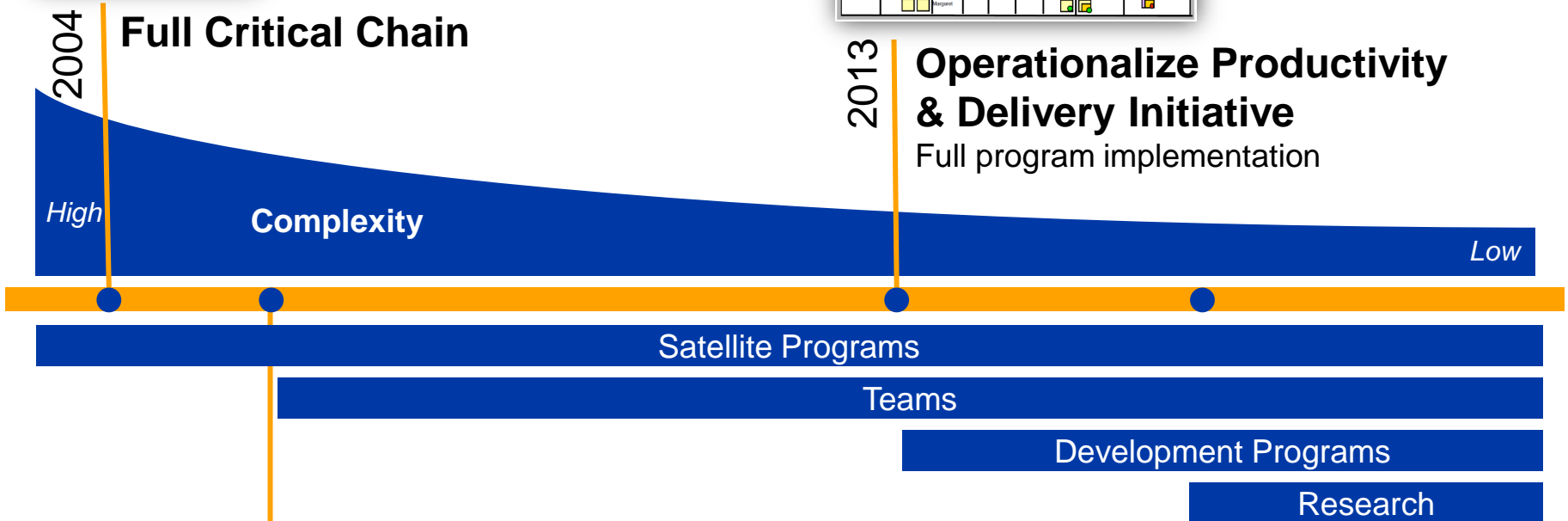


**Focus on Speed: Savings, Market Share, Innovation,... will Follow**

# The Journey

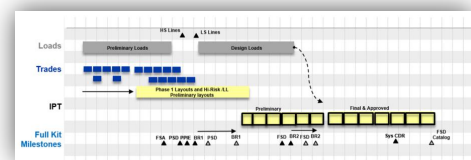


In-Box	Prioritized Backlog	STEP 1	STEP 2	STEP 3	STEP 4	WIP	Hold	Random Change Monitoring
		Corey						Completed
		Rex						
		Rebecca		VIP Board Template				
		Steven						
		Ryan						
		Pat						
		Justin						
		Damon						Help Needed
		Angel						



**2008** Team focused

**2017** High Level Flow Full Kit



**Right sized the complexity, Improving the Bottom Line**

# Demonstrated Success: 787

## Boeing 787

*Over 150 New Nonstop Markets*

*Over 95% Common Parts*

*60% Improvement in Flow*



### **Success Factors**

Leadership Champions

Aggressive Targets

Standard Work / Remove Complexity

Focus on WIP

**Leading Technology Driving Cash flow & Connecting Cities**

# Current Program: Product Development In Record Time!

## Boeing T-X Trainer

*Design For The Mission*

*Incorporating New Tech*

*Rapid Development*



### **Success Factors**

Establish Team Culture and Vision From Day One

Define Knowledge Gaps & Solve the Tough Issues First

Challenge the Norm

Maximize Learning Throughput

Focus on Full Kit

**Firm Concept to First Flight in 36 Months**

# Next Big Challenge: 10 Launches, 10 Days

## Boeing Phantom Express

*Condensed Development Schedule*

*Biggest Implementation of OPD*

*10 Flights, 10 Days*

*First Launch: 2020*



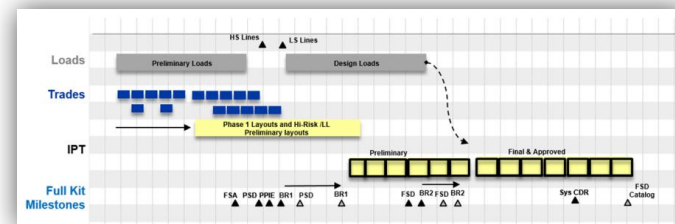
### Success Factors

TOC Before Program Start

Synchronizing Program Using Full Kit Approach

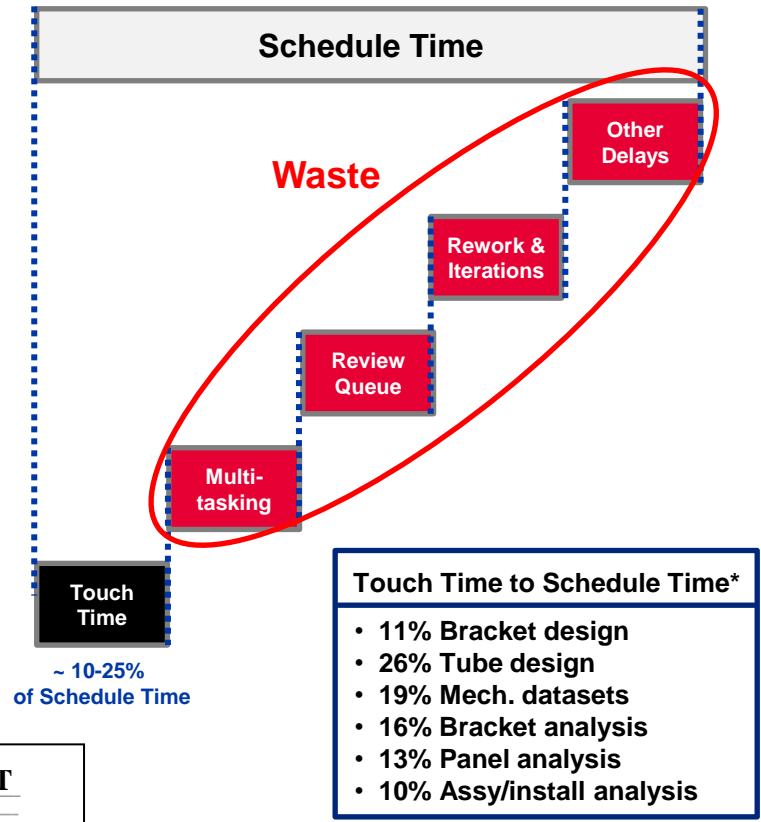
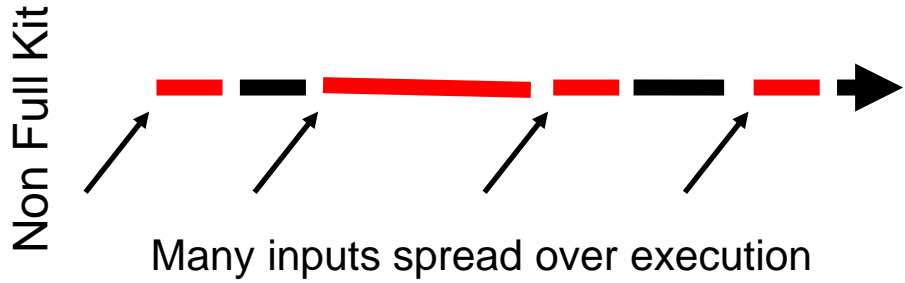
Focusing Resources on True Constraints

Applying Standard Work



**10 Flights in 10 Days!**

# The Power of Full Kit



SAMPLE FULL KIT CHECKLIST			
Model:	Supplier:	Priority:	
Customer:	Seat Class:	SDRL No:	
SDT No:			
Type of Submittal			
<input type="checkbox"/> Furniture ILR	<input type="checkbox"/> Seats ILR		
<b>I. ILR Data Package should include:</b>			
<b>Package Requirements</b>			Yes No N/A
A. Envelope drawings have been submitted in SDT and Accepted	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
B. Fitting Drawings have been submitted	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<b>Drawings should include:</b>			
C. Layout Drawing with STA and Pitch	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
D. Part Numbers, Dimensions and Weights	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
E. Envelope drawings identify all contents and any additional stowage	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
F. Fitting Drawings with detailed dimensions/ description	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
G. Unique features, stowage compartments	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
H. Seat CO's and SRP Locations	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

**Full Kit is the Biggest Enabler for Accelerating Flow**

# Final Thoughts

## Aggressive Targets

### Constraint - Full Kit

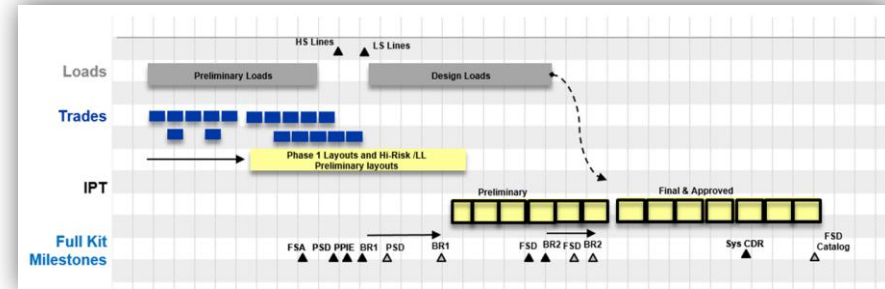
- Full Kitting is the best way to concentrate management attention

### Decide how to exploit Full Kit

- Full Kit at key handoffs, risk burn downs, resource ramp up/downs
- Stagger based on Full Kit

### Subordinate to above decision

- Team WIP boards lower multitasking
- Execution leaders and co-champions



In-Box	Prioritized Backlog		STEP 1	STEP 2	STEP 3	STEP 4	WIP	Held	Andon Change Monitoring
		Gary							Completed
		Rex							
		Rebecca			WIP Board Template				
		Steve							
		Ryan							
		Pat							
		Jeff							
		Darren						Help Needed	
		Margaret							Help Needed

**Program Level Full Kit Enables TOC Concepts at Team Level**



