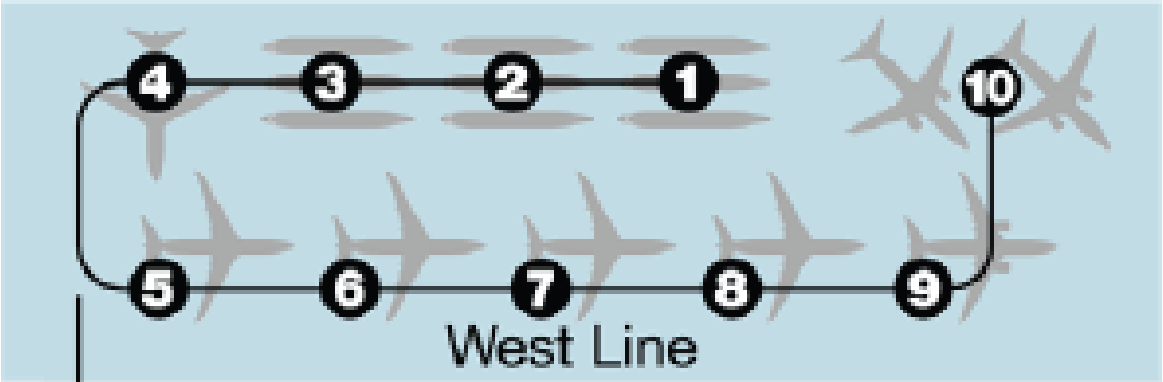
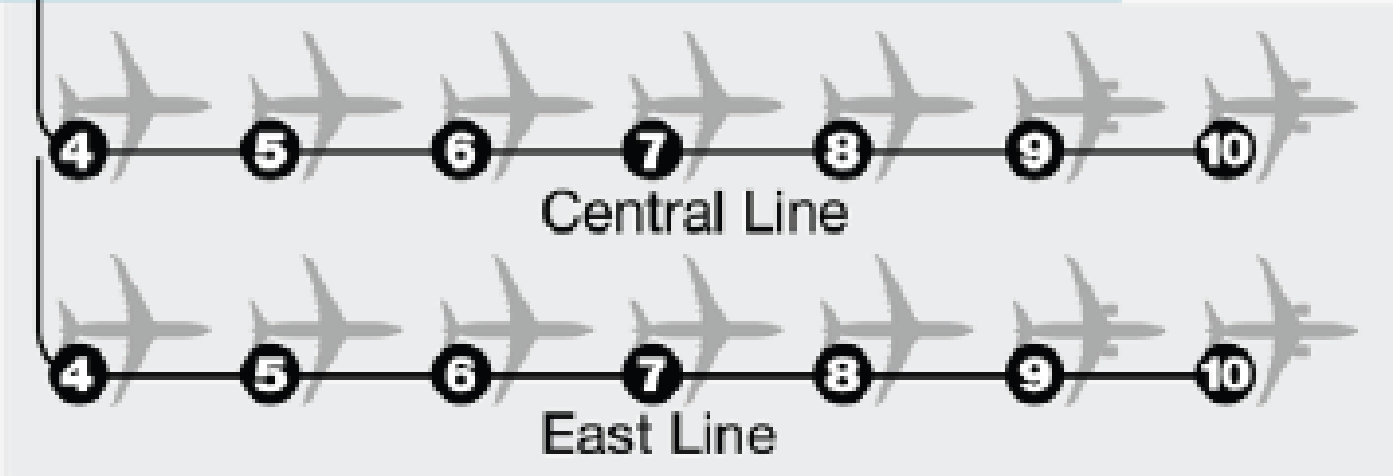


# Overview of Renton Production Line Flows



**Three** production lines – East, West and Central.



**Flow Days 1-3** grouped together next to the West Line to feed Flow Day 4 for all three production lines.

# Renton Factory Flow Day Summary

## Flow Days 1-3

**Interior installations:** insulation blankets, hydraulic systems, electrical wiring.

**Exterior installations:** dorsal fin, protective radome, MED rig verification.

## Flow Day 4

**Exterior installations:** wings, horizontal stabilizers, vertical stabilizer, landing gear.

## Flow Day 5

**Interior installations:** rear galleys, lavatories.

**Exterior installations:** cable riggings connected to flight controls, **Testing:** fuel tank pressure.

## Flow Day 6

**Interior installations:** sidewalls, overhead stowage bins, forward galleys.

**Testing:** mechanical, electronic.

## Flow Day 7

**Testing:** cabin pressure testing, landing gear, flight controls.

## Flow Day 8

**Interior installations:** carpets, seats.

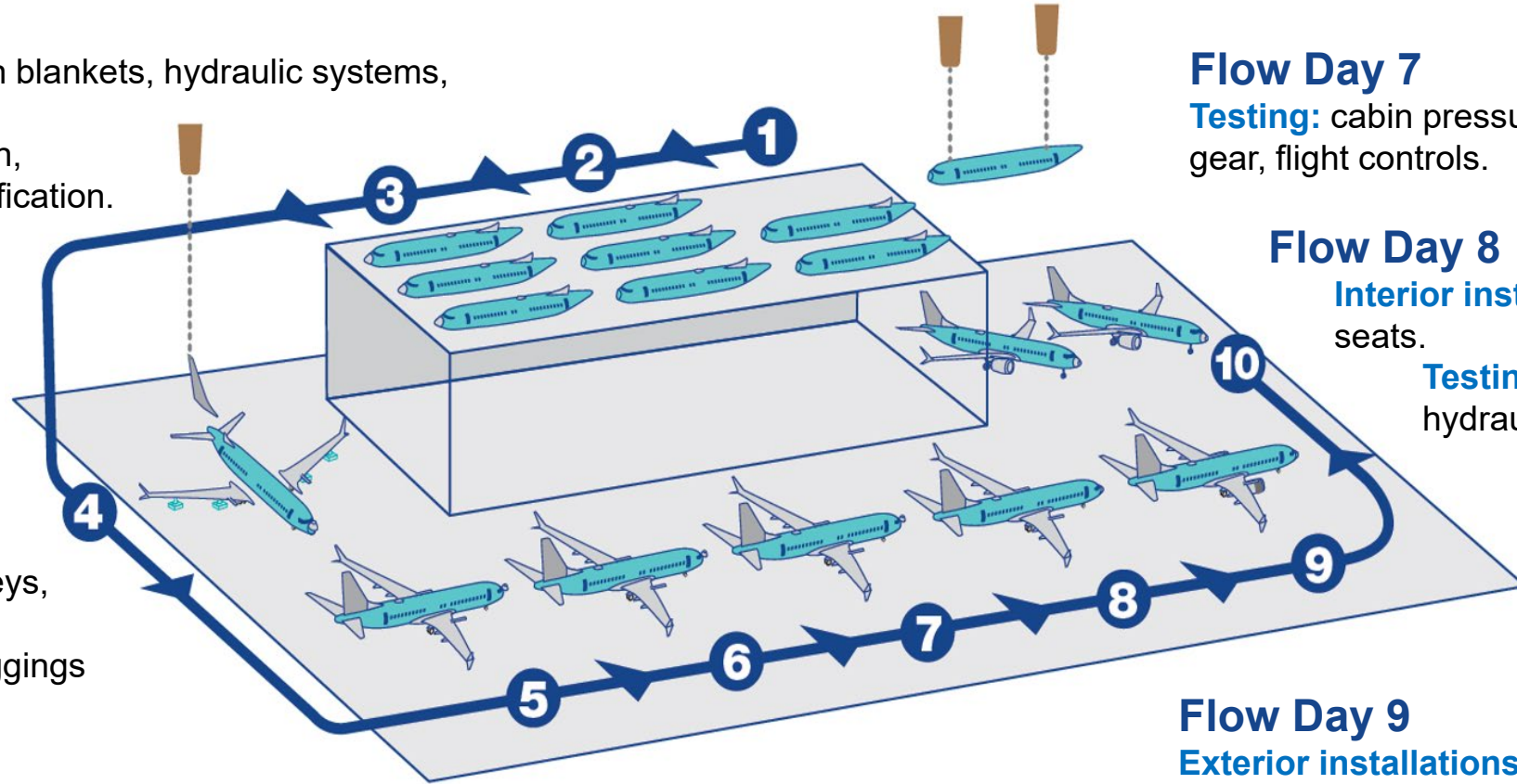
**Testing:** flight controls, hydraulics.

## Flow Day 9

**Exterior installations:** engines, MED fit and fair.

## Flow Day 10

Final wrap up and exterior airplane protection.



# Employee Reporting Channels



## Primary Flow through Reporting Lines

Managers, site Compliance & Ethics officers, and Human Resources are available to address issues raised by employees.



## Seek, Speak & Listen

Leadership habits reinforced through online videos as well as in-person training to establish behaviors that create a healthy culture.



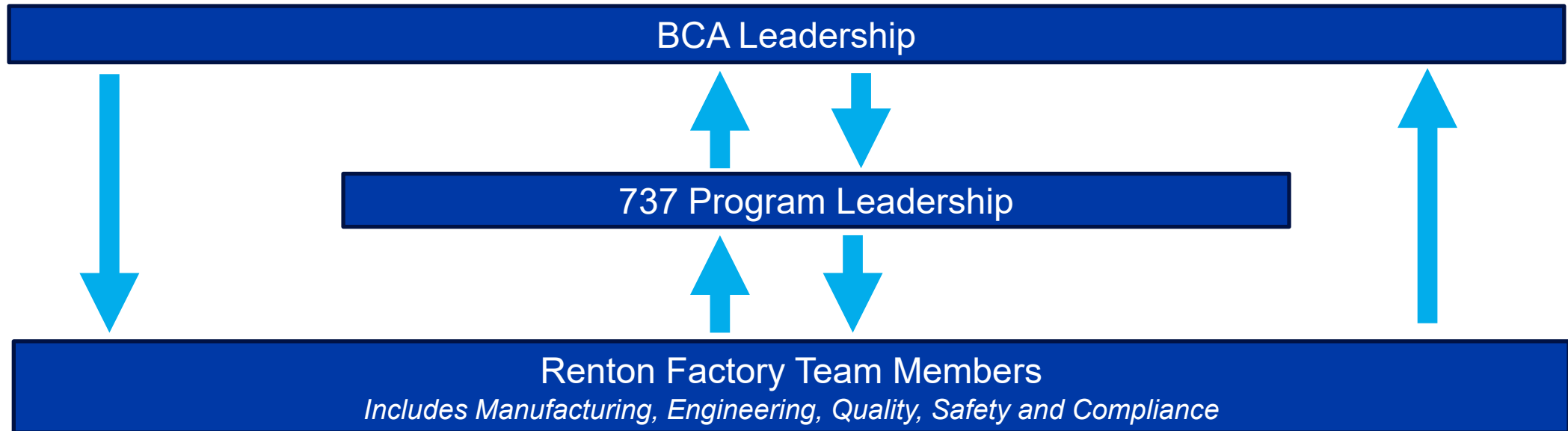
## Speak Up

Online tool provides centralized location to confidentially report potential concerns around safety, quality, and compliance (anonymous reporting allowed).



## Ethics Lines

Allows employees to confidentially ask questions or raise concerns regarding potential misconduct or unethical practices (anonymous reporting allowed).



# LN 8789 Renton Factory M-Day Timeline

## Boeing Actions

- LN 8789 enters factory
- Five discrepant rivets near left MED plug identified
- Requests Spirit rework rivets

- Quality inspection
- Removes Spirit's stamp in CMES
- Requests Spirit rework rivets

- CMES entry notes discrepant rivets are unacceptable
- Requests Spirit rework rivets

- Elevates rivet rework to Tier 2 in SAT tracker
- Determines removal of MED plug necessary for access to rework rivets

- Removes MED plug
- Orders additional rivets and seal from Everett
- Elevates rivet rework to Tier 3 in SAT tracker
- Inspects and approves rework
- Closes MED plug

9/1	9/2	9/3	9/4	9/5	9/6	9/7	9/8	9/9	9/10	9/11	9/12	9/13	9/14	9/15	9/16	9/17	9/18	9/19
FD1				FD2	FD3	FD4	FD5			FD6	FD7	FD8	FD9	FD10			FD10	FD10

## Spirit Actions

- Conducts initial rework
- Applies CMES stamp
- Declares in CMES entry discrepant rivets are acceptable to use as-is

- Provides input to Boeing

- Begins rework

- Replaces discrepant rivets

- Weekend or holiday (non M-Day)
- M-Day

\* Timeline based on CMES, SAT, and other records provided to NTSB

# Boeing Oversight of Global Supply Chain



## Prevention and Readiness

- Requirement consumption review
- Boeing first-article inspection
- Qualifications



## Sustainment

- Tools for ongoing supplier oversight
- Onsite audit



## Recovery and Improvement



- QMS probation
- Source inspection



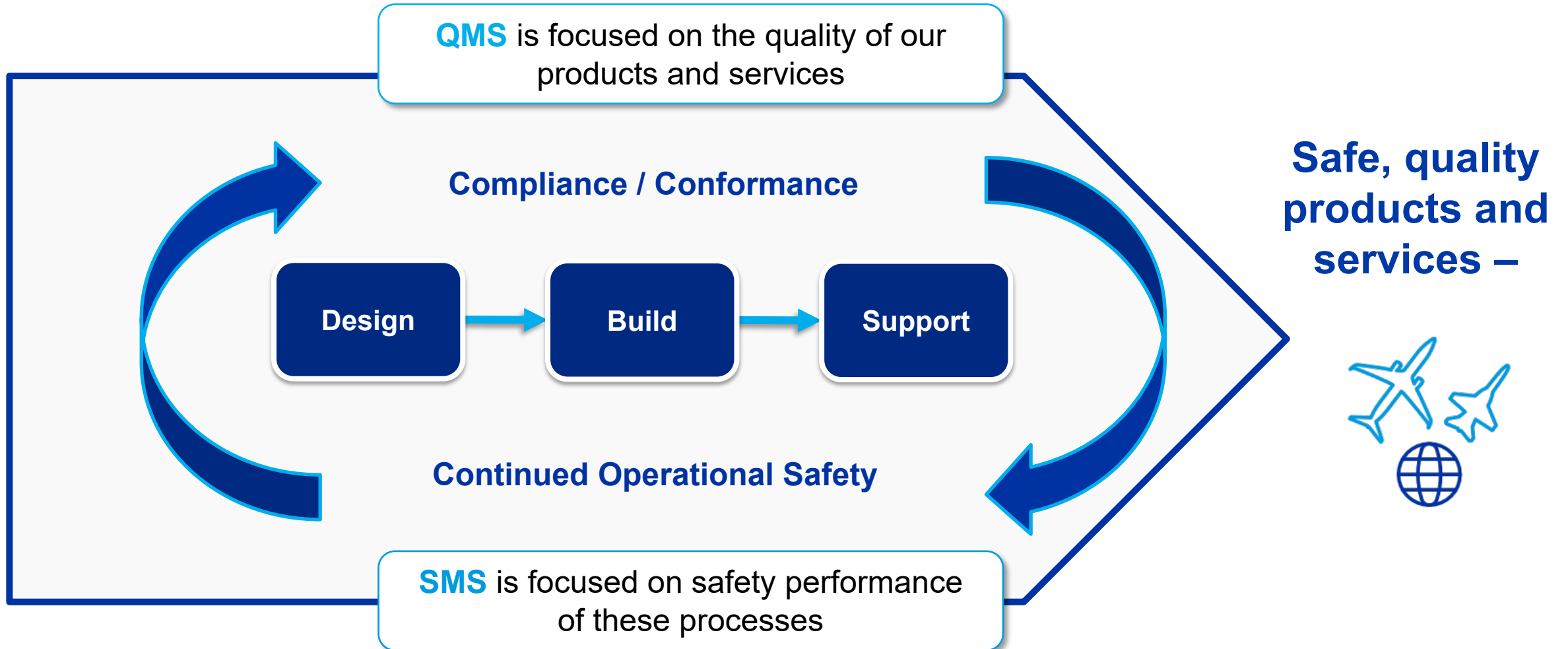
## Special Processors

- Approve and maintain  
(Approved Suppliers List)

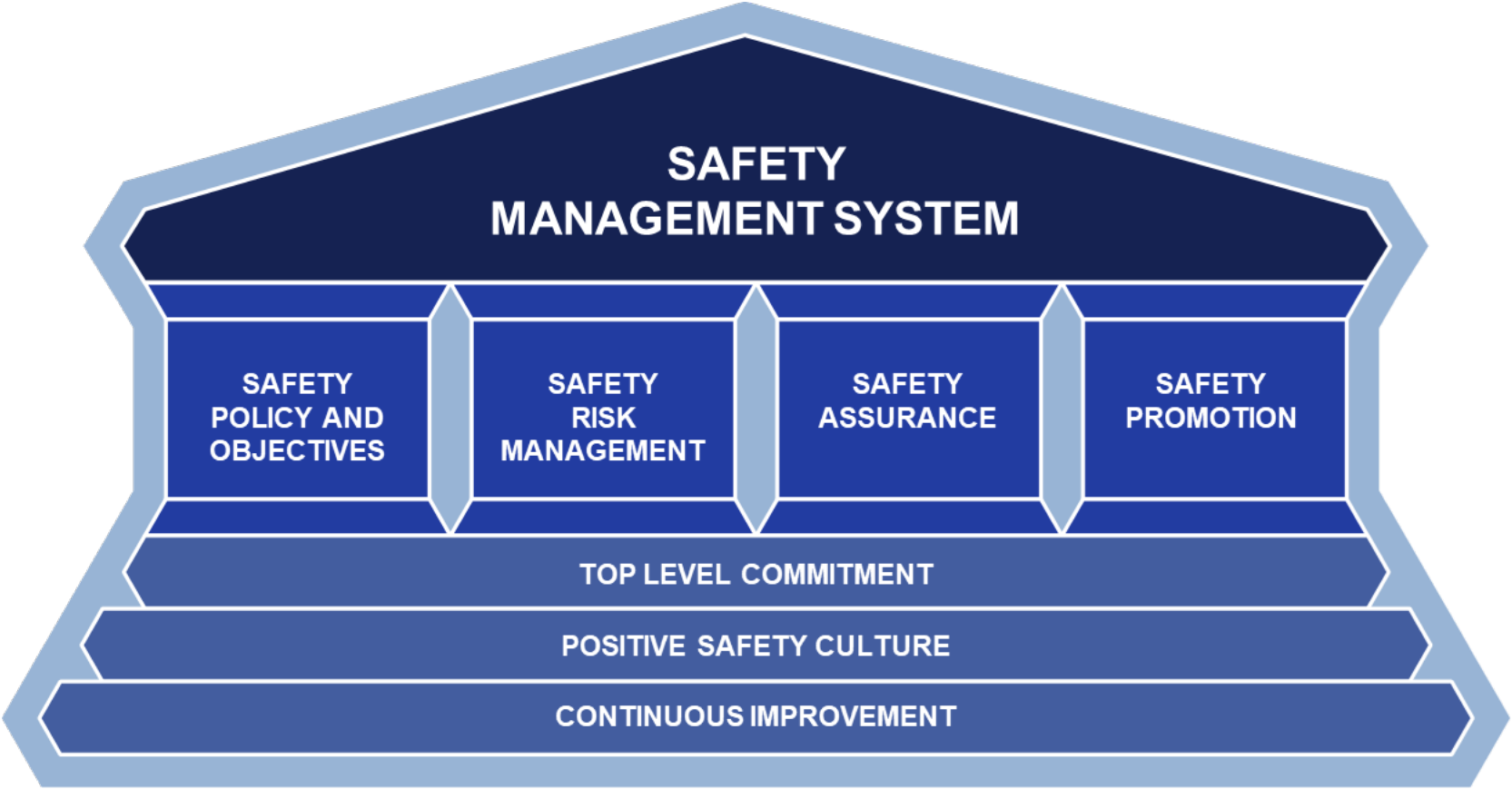
# Boeing Production System Health: Key Performance Indicators

Improvement Direction	Key Performance Indicators
	Number of proficient employees
	Supplier shortages
	Notice of escapement rework hours
	Rework hours per airplane
	Travelers at factory rollout
	Defects at time of ticketing

# Boeing QMS & SMS Integration

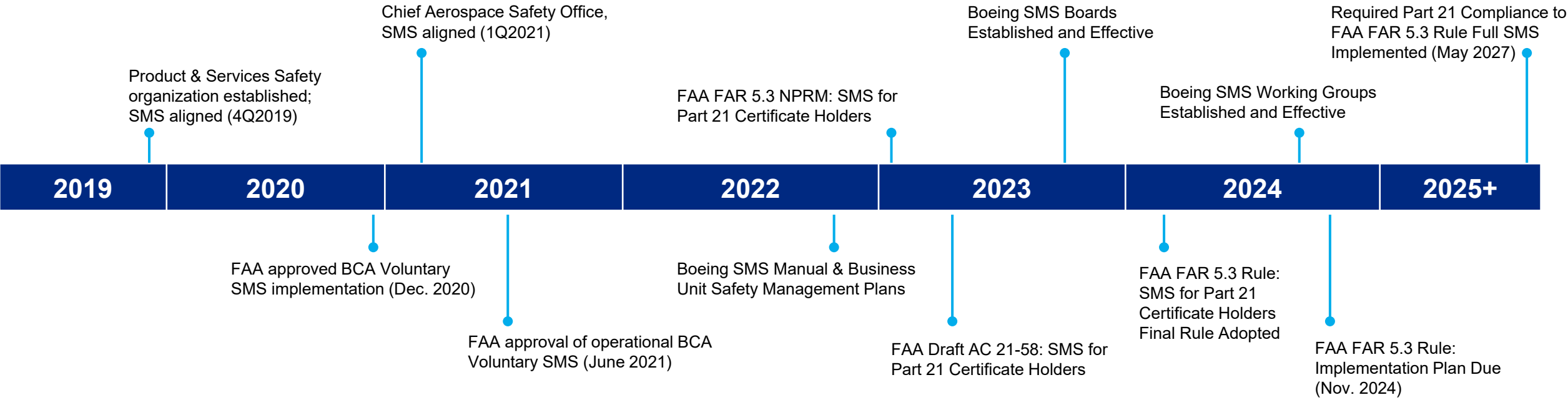


# Safety Management System — Overview





# Safety Management System — Implementation and Development



# Safety Management System — Training and Promotion

## ROBUST TRAINING



- SMS Awareness for Employees
- SMS Awareness for Managers
- Safety Risk Management Awareness
- Speak Up: Confidential Employee Reporting
- Product Safety & Quality Annual Training
- Positive Safety Culture & Just Culture Essentials: Instructor Led Training
- Just Culture Guiding Principles: Leaders Teaching Leaders
- SMS and Positive Safety Culture: New BCA Manufacturing and Quality Employees

## SAFETY PROMOTION



- Safety Experience at Boeing
- SMS Champions Program
- SMS Website
- SMS on Internal Social Network
- Safety Post – Monthly Newsletter
- Safety & Speak Up Stories
- Safety & Quality Recognition Program
- Employee Engagement Teams
- Boeing Aviation Safety Conference

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If you are concerned about the way we're building our products, please **Speak Up!**

Your report makes a difference.

 **Speak Up**

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The advertisement features a background image of a Boeing worker in a hard hat and safety glasses, focused on a task. The text is overlaid on a blue hexagonal shape. The overall design uses a hexagonal pattern in the background.

# Quality Management System — Overview

## Quality Management System (QMS)

- The organizational structure, processes, procedures, records, and resources needed to integrate, document, implement, and maintain the various components of an effective system.
- QMS is intended to ensure each product meets its approved design and is safe for operation.
- QMS complies with AS9100 standards.
- Quality manual approved by FAA.

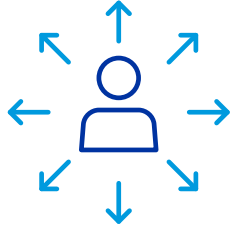
## QMS components documented in Quality Manual

- Personnel and organizational structure
- Processes
- Procedures
- Records
- Resources

## Employee QMS Responsibilities

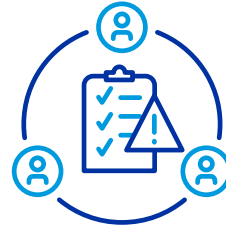


# Quality Management System — Internal Reviews



## Factory Tiered Meetings

- Production quality performance
- Functional support



## Quality Management Reviews

- Audits
- Compliance actions



## Quality Leadership Reviews

- Product quality
- In-service performance

# Quality Management System — Key Audits and Reviews



**Regulatory Audits**



**Internal Audits**



**Boeing-Supplier Audits**



**Production Compliance Teams**

# Quality Management System — Root Cause and Corrective Action Process



# Quality Management System — Regular Boeing / FAA Engagement



**Manufacturing  
& Delivery QMS  
Review**



**FAA & Quality /  
Engineering  
Integration  
Meeting**



**Production  
Certificate  
(PC700)  
Program  
Review**



**Boeing – FAA  
Leadership  
Team Meetings**