ITC Inv. Nos. 701-TA-578 and 731-TA-1368 (Preliminary)

**PUBLIC DOCUMENT**

**BEFORE THE**

**UNITED STATES INTERNATIONAL TRADE COMMISSION**

---

**IN THE MATTER OF**

**100- TO 150-SEAT LARGE CIVIL AIRCRAFT FROM CANADA**

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# RESPONDENT BOMBARDIER INC.'S CONFERENCE EXHIBITS

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Washington, D.C. 20001-4956

*Counsel to Respondent Bombardier Inc.*

May 18, 2017

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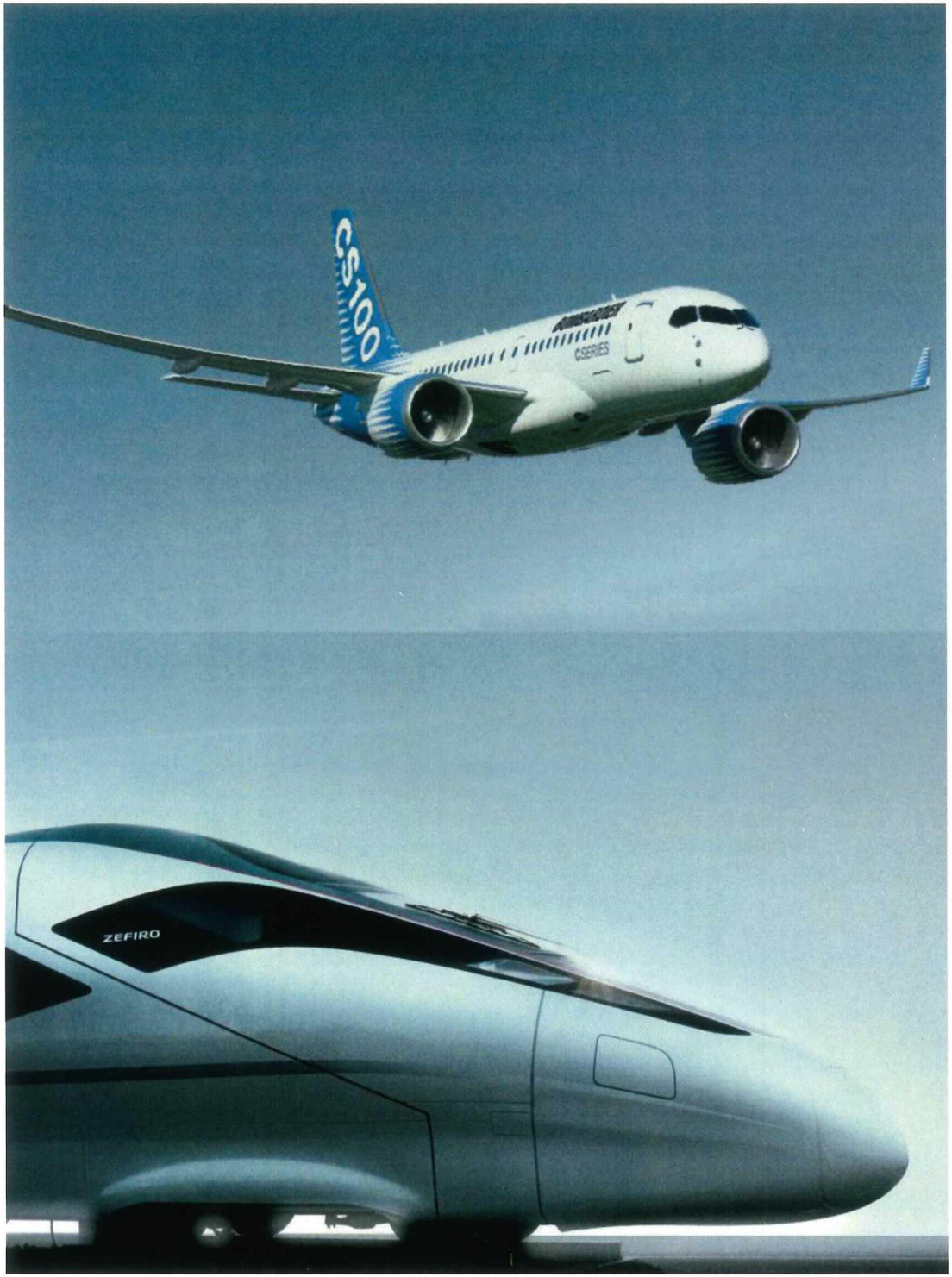


# Exhibits to Statement of Sebastien Mullot

May 2017

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# C Series development history

| 2006 | 2006-2008 | 2008 | Feb 2009 | Sept 2013 | Jun-Sept 2016 |
|---|---|---|---|---|---|
|  |  |  |  |  |  |
| First design iteration | Integrated Pratt & Whitney geared turbofan engine | Attained 15%[1] operating cost improvement target | Secured initial customer Lufthansa | First flight | CS100, CS300 FAA certification |




1. Compared to in-production aircraft
Source: Bombardier

# C Series delivers innovative features to airlines, passengers and communities

## Efficiency gains

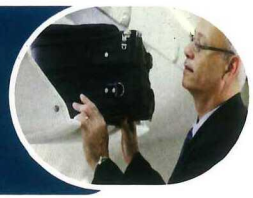
- Advanced materials and aerodynamics

- Improved fuel efficient engine

## Passenger experience

- Wider cross-section and larger windows

- Best-in-class cabin comfort, storage and wider seats




## Operational flexibility

- Superior field performance & range flexibility

- Cabin configuration flexibility

## Environmental benefits

- Reduced noise: optimized for airport restrictions

- Reduced emissions



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# Customers recognize the appeal of the technology

SWISS

"We are actually **very satisfied with the performance** of the *C Series*... **Definitely we would recommend the aircraft** to other airlines[1]"

"The **customer feedback is very positive** with the expected remarks concerning the bright cabin, **reduced noise**, enough leg room and space for hand luggage as well as the comfortable seats[2]"

airBaltic

"...in terms of the pure aircraft, it's actually **exceeding our economic expectations - and our expectations were high**[3]"

1. Peter Koch, SWISS's fleet chief and program manager for the *C Series*
2. Karin Muller, SWISS Spokeswoman
3. Wolfgang Reuss, SVP Network Management of airBaltic

# The C Series is a brand new technology

| | 737 | *C Series* |
|---|---|---|
| |  |  |
| **Date of original clean sheet aircraft entry into service** | **1967** | **2016** |



Source: Bombardier

# Boeing states that 737 MAX is not meant to compete with CS100s ordered by Delta...

"We are in conversations with our customers. [...] do we want to address the very top of that market with the MAX? **At the lower end the airplanes that have been purchased have been CS 100s. We aren't competing with those with the MAX**."

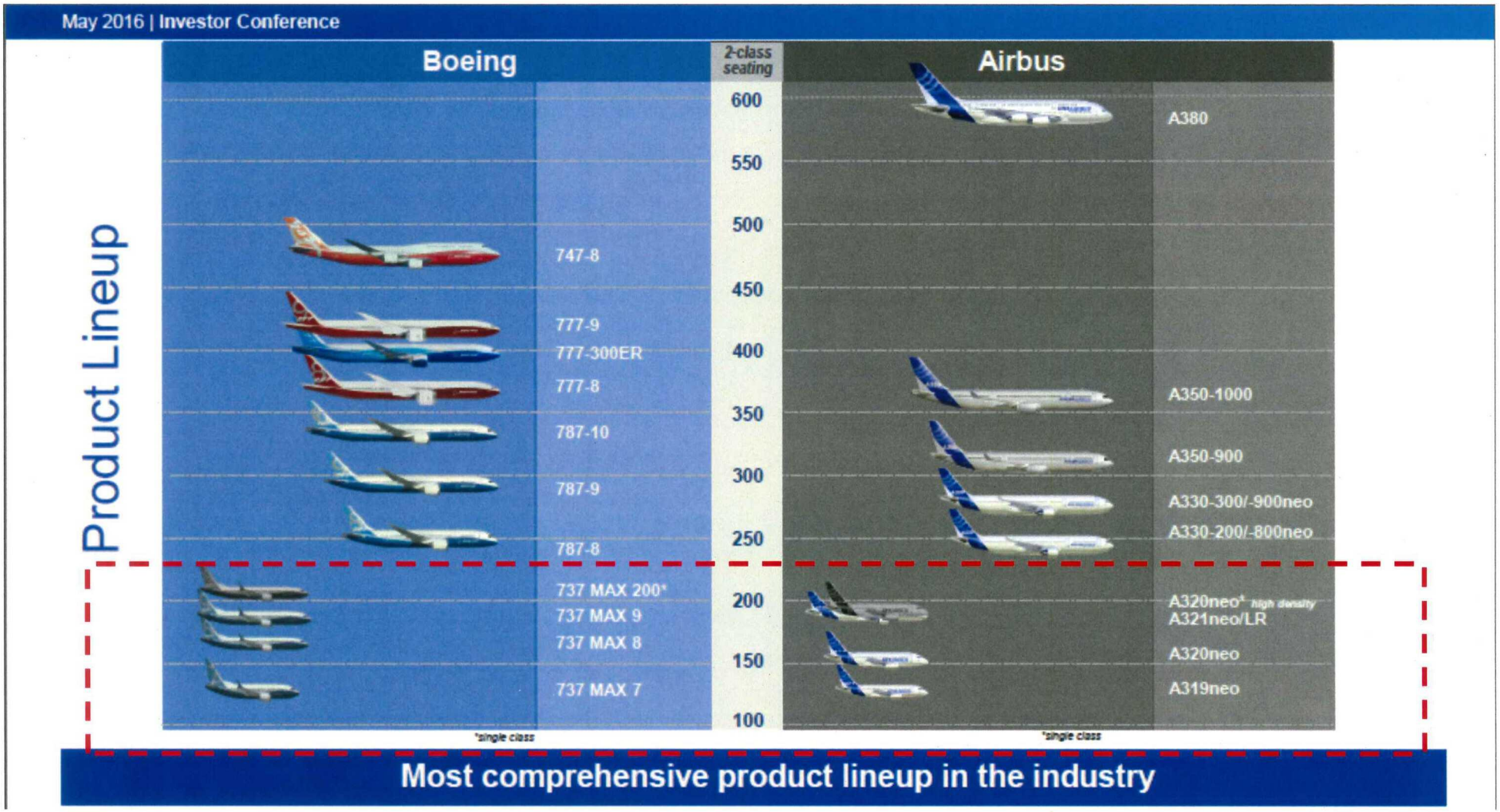
*- Ray Conner, Boeing Vice Chairman & President and CEO, Commercial Airplanes*

*May 11 2016 Investor Conference*



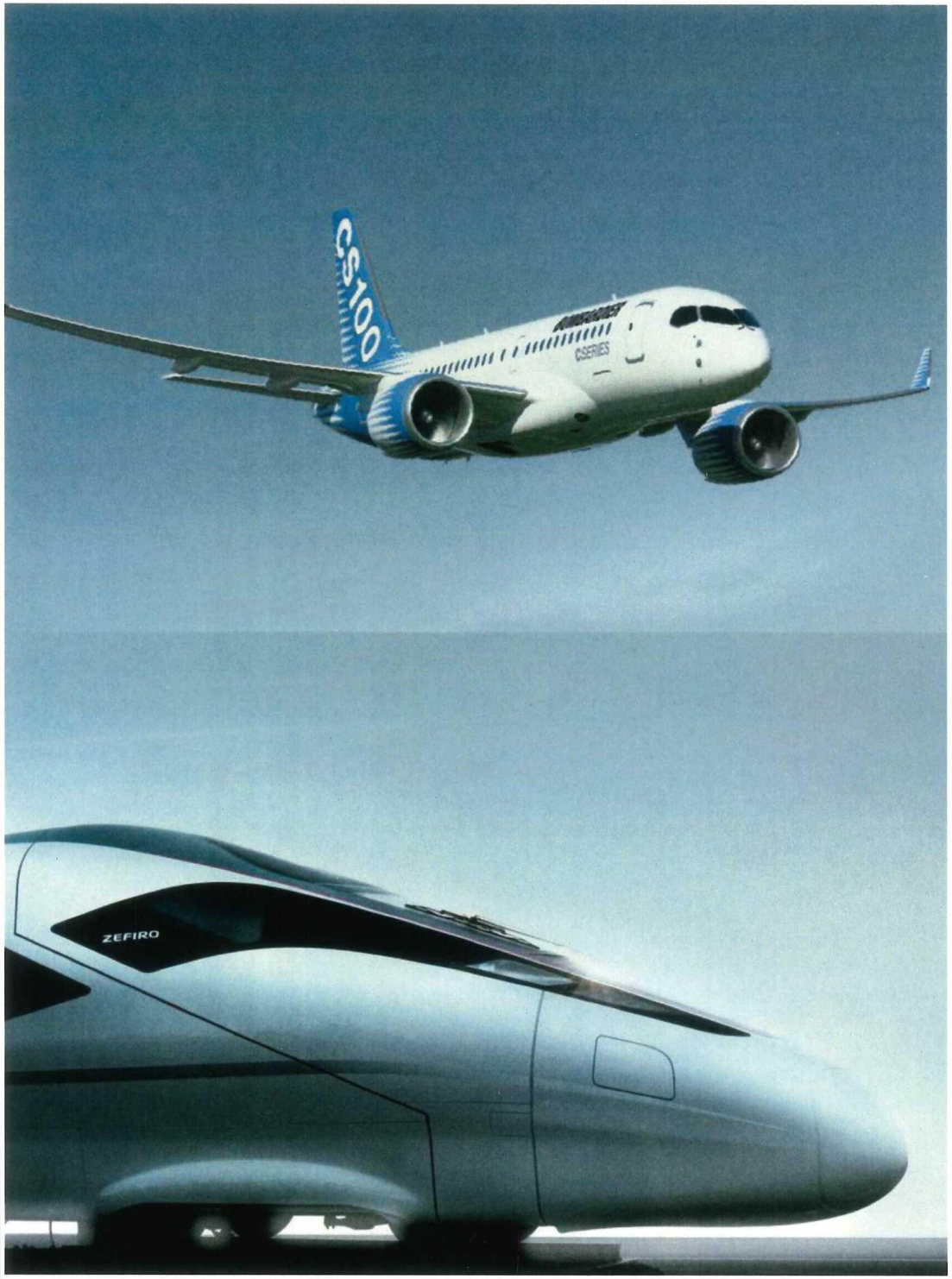
Source: Boeing Co Corporate 2016 Investor Conference, May 11 2016; Boeing company website.

# ... and Boeing views the 737 family's competition as Airbus






Source: Boeing Commercial Airplanes Investor Conference, May 11 2016




# Exhibits to Statement of Ross Mitchell

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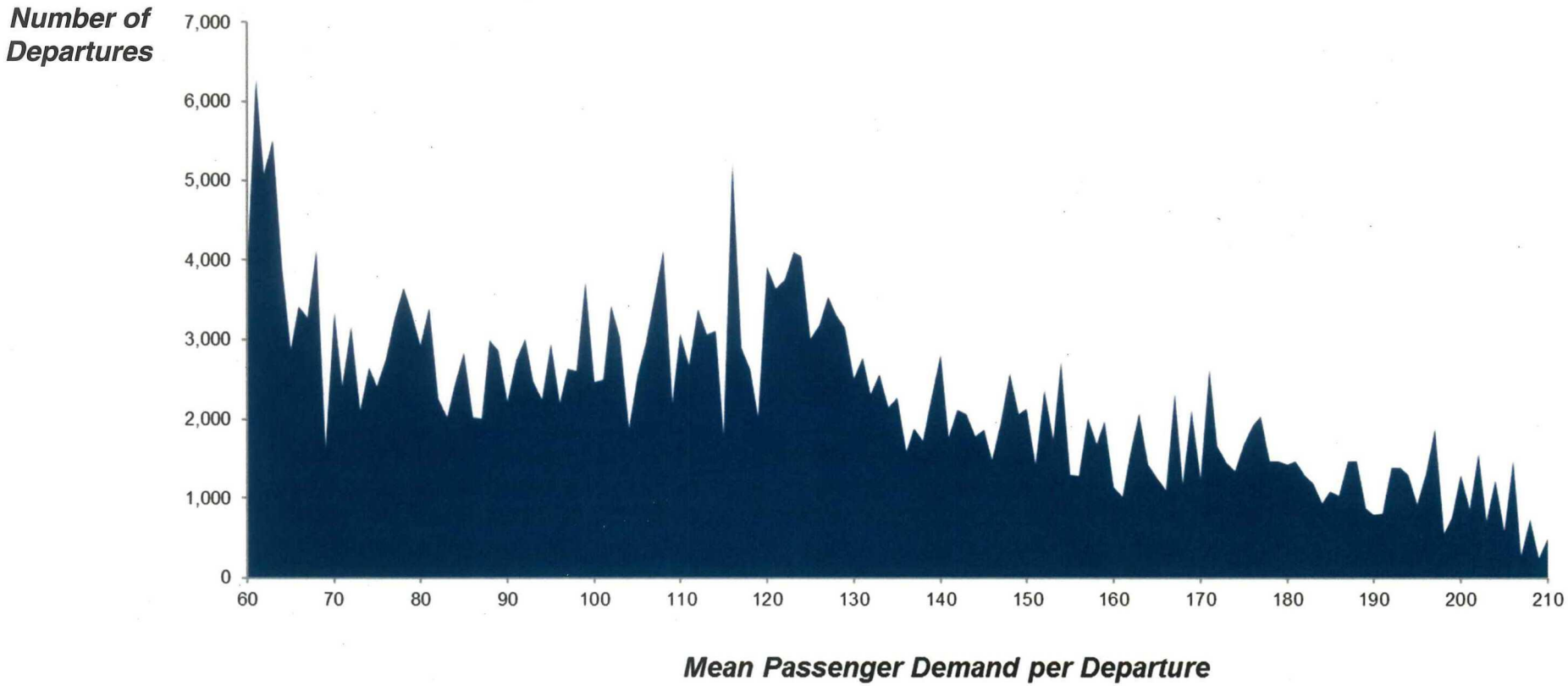
# U.S. demand by number of passengers is continuous

**Single-aisle mainline and regional jet demand**
US Market, May 2010






Source: US Department of Transportation, Bombardier Analysis

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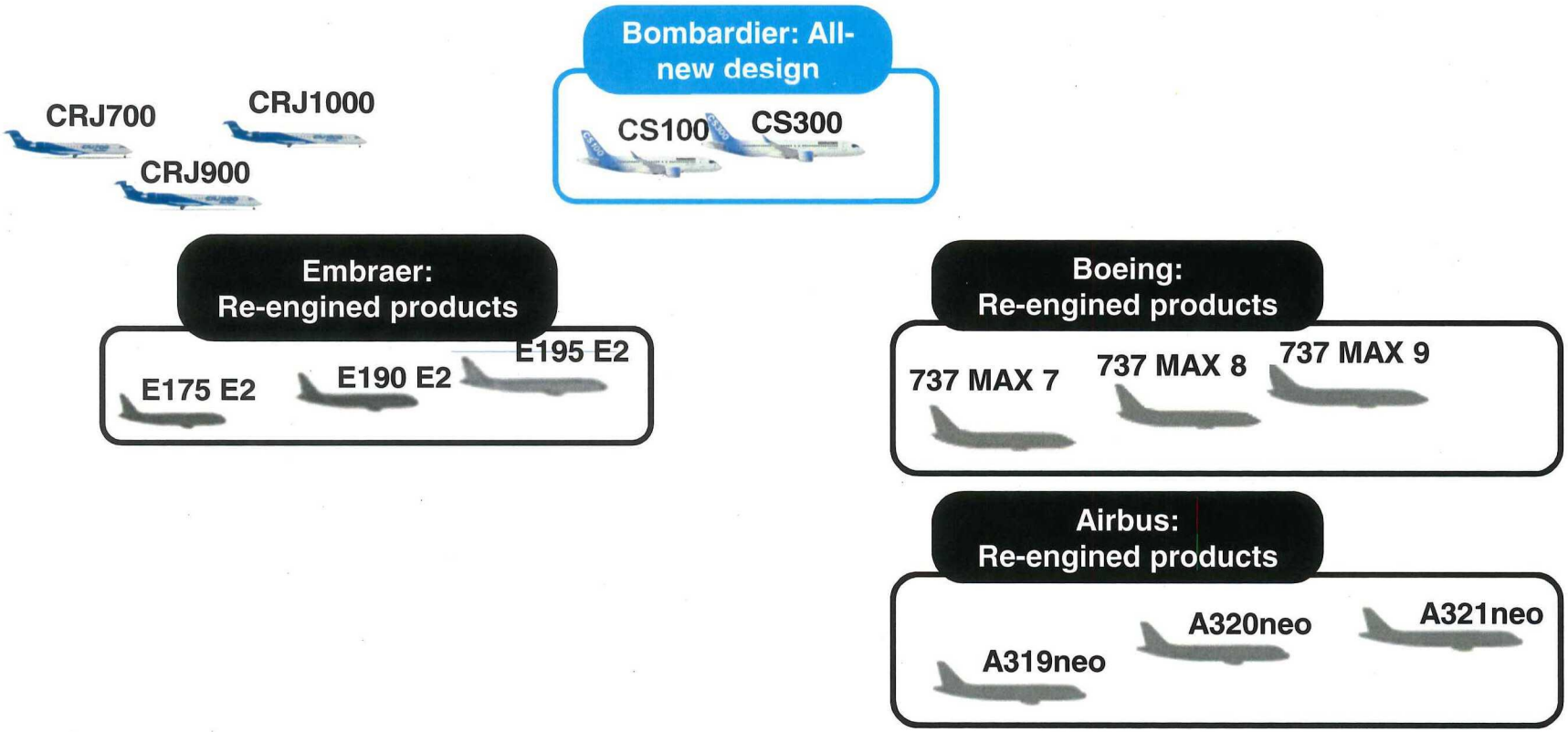
# C Series filled a gap in the market






Source: Bombardier Commercial Aircraft analysis

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# Boeing offered only used aircraft to Delta

**"We competed at Delta with used 717s and used Embraers"**

*- Ray Conner, Boeing Vice Chairman & President and CEO, Commercial Airplanes*
*May 2016 Investor Conference*





Source: Boeing Co Corporate 2016 Investor Conference, May 11 2016

# Boeing's view of the single-aisle market segment

## AIRPLANE MARKET SECTOR DEFINITIONS

Bold: Airplanes in production or launched.

**SINGLE AISLE PASSENGER AIRPLANES**

| | Single Aisle | Regional Jets |
|---|---|---|
| Boeing 707, 757 | **AVIC ARJ-900** | **Antonov An-148, -158** |
| Boeing 717, 727 | BAe 146-300, Avro RJ100 | **AVIC ARJ-700** |
| Boeing 737-100 through -500 | **Bombardier CRJ-1000** | Avro RJ70, RJ85 |
| **Boeing 737-600, -700, -800, -900ER** | **Bombardier CS100, CS300** | BAe 146-100, -200 |
| **Boeing 737-MAX7, MAX8, MAX9** | **Embraer 190, 195** | **Bombardier CRJ** |
| **Airbus A318, A319, A320, A321** | **Comac C919** | Dornier 328JET |
| **Airbus A319neo, A320neo, A321neo** | Fokker 100 | **Embraer 170, 175** |
| Boeing/MDC DC-9, MD-80, -90 | UAC MS 21-200/300 | Embraer ERJ-135/140/145 |
| | Illyushin IL-62 | Fokker 70, F28 |
| | Tupolev TU-154, **TU-204, TU-214** | **Mitsubishi MRJ** |
| | Yakovlev Yak-42 | **Sukhoi Superjet 100** |



Source: Boeing Current Market Outlook, 2016-2035, Page 52 of 54

# Boeing consistently denies interest in the *C Series* market

"Do we want to address the very top of that market with the MAX? **At the lower end the airplanes that have been purchased have been CS100s. We aren't competing with those with the MAX**."

*- Ray Conner, Boeing Vice Chairman & President and CEO, Commercial Airplanes*
*May 2016 Investor Conference*

"The *C Series* and the other regional jets that are getting a little bigger, that's **not necessarily a market segment we want to be in**."

*- Jim McNerney, Boeing CEO, June 2010*



Source: Boeing Co Corporate 2016 Investor Conference, May 11 2016; AIN Online, "*C Series* moves into detailed design phase", Farnborough Air Show, June 16 2010

# Boeing is moving toward larger aircraft

**Pre-2016**

| Aircraft | Dual-class seat capacity |
|---|---|
| CS100 | 108 |
| Original MAX 7 | 127 |
| CS300 | 130 |
| MAX 8 | 160 |

**Post-2016**

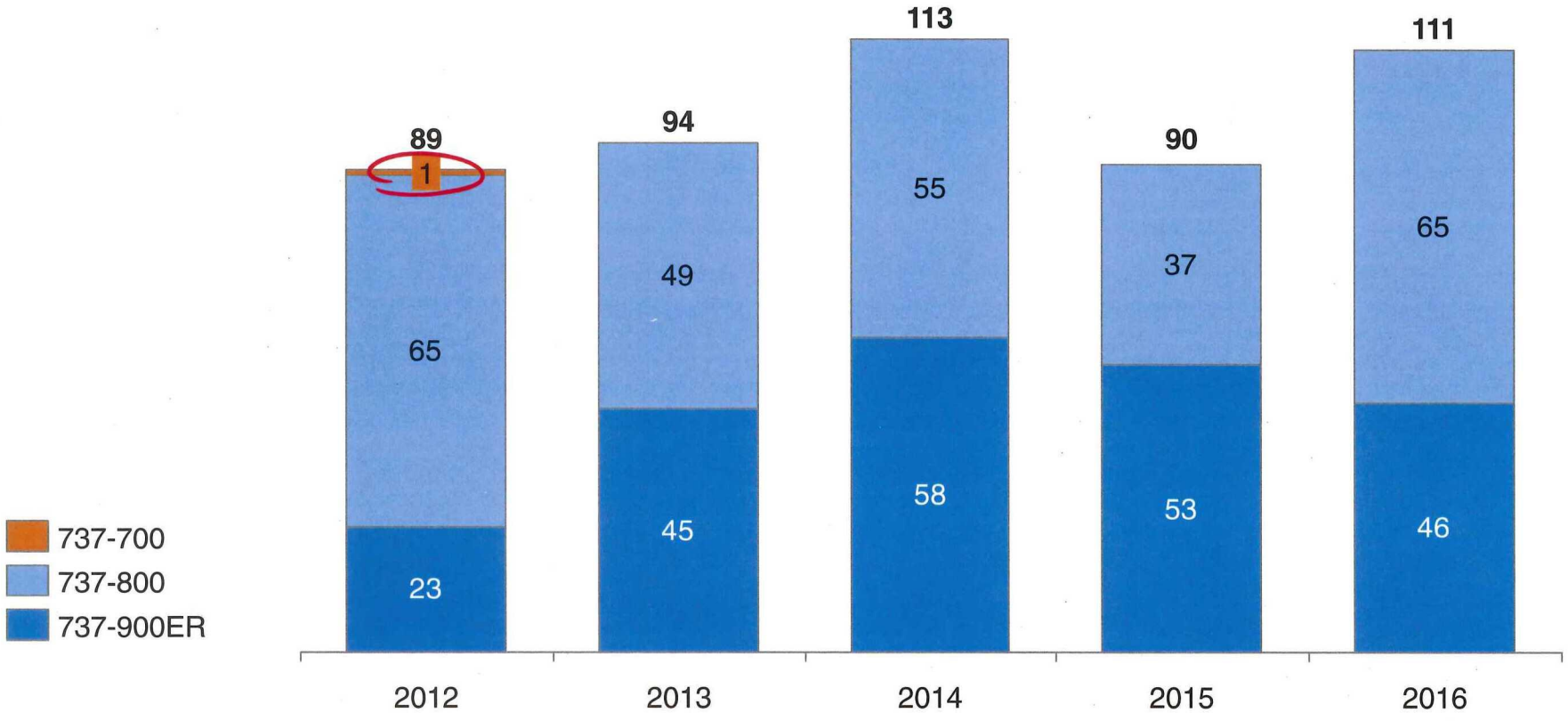
| Aircraft | Dual-class seat capacity |
|---|---|
| CS100 | 108 |
| CS300 | 130 |
| New MAX 7 | 138 |
| MAX 8 | 160 |



Source: Bombardier Latest 737 Max 7X Positioning, August 2016; Tim Bicheno-Brown/Flight Global

# Boeing delivered only one 737-700 in past 5 years in U.S.

**737 aircraft family U.S. deliveries, 2012-2016**






Source: Flight Global, May 2017

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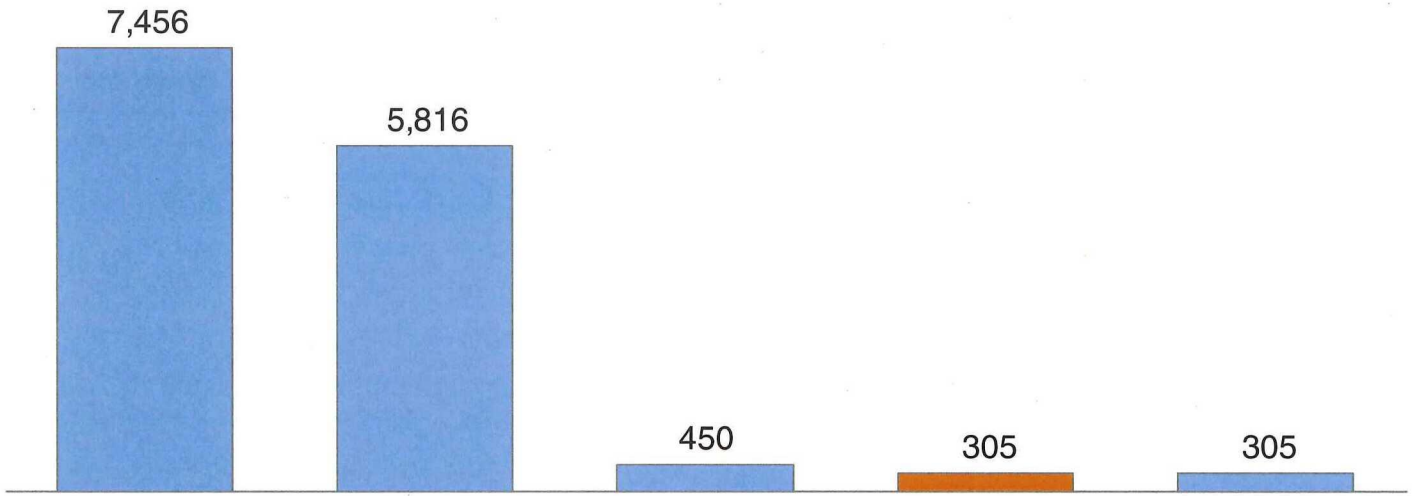
# Boeing and Airbus are the dominant players

**Worldwide single-aisle mainline orders by manufacturer**
2010-Present




| | Airbus (A320 family) | Boeing (737 NG/Max) | Embraer (E190/195/ E2) | Bombardier (C Series) | COMAC (C919) |
|---|---|---|---|---|---|
| *As % of total* | 51% | 41% | 3% | 2% | 2% |

Note: Single-aisle aircraft market includes: Airbus A319, A320, A321; Boeing 737-700/800/900 and MAX 7/8/9; C Series 100 and 300; Embraer 190, 195, E2; COMAC C919.
Source: Flight Global, May 2017



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# Launch pricing is standard risk compensation

"Over time that [777X] margin should move higher, but that generally requires full rate production and **the end of launch pricing, which should occur at some point in the next decade**."

*- RBC Capital Markets, Feb 10 2016*

"And second point is improving pricing on the remaining [787] 900 aircrafts in the accounting block, […] – **think about early on in the program, early pricing disruption,** customer settlements clearly impacting on profitability and cash all in that deferred production – that will not be the case going forward."

*- Greg Smith, Boeing Co CFO, May 2016 Investor Conference*



Source: RBC Capital Markets Boeing Co analyst report, February 10 2016; Boeing Co Corporate 2016 Investor Conference, May 11 2016


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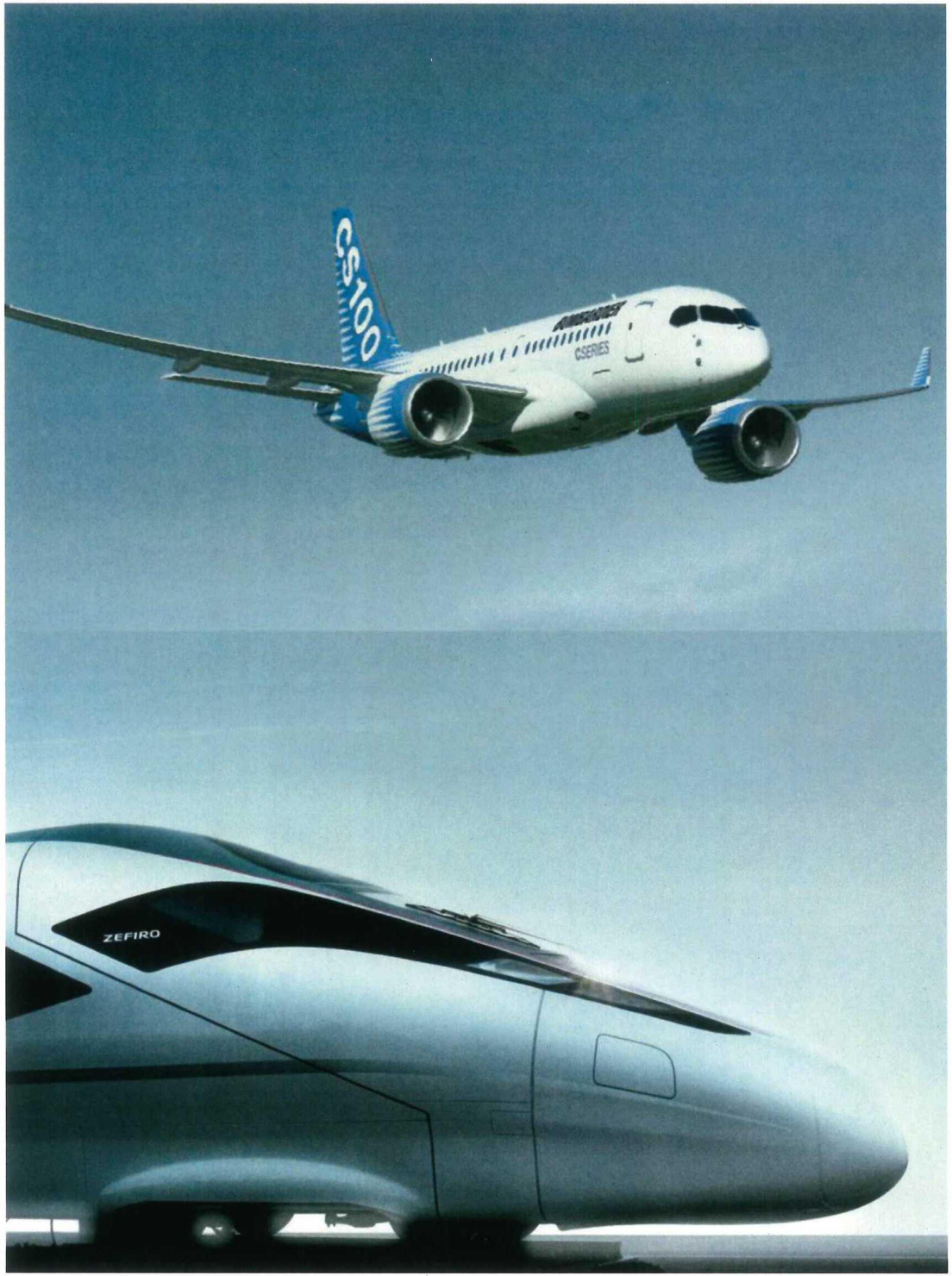


# Exhibits to Statement of Shara L. Aranoff

May 2017

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# Boeing views single-aisle aircraft as a single category

## Screenshot from Boeing Current Market Outlook, 2016-2035

| Region | Asia | North America | Europe | Middle East | Latin America | C.I.S. | Africa | World |
|---|---|---|---|---|---|---|---|---|
| World Economy (GDP %) | 4.1% | 2.3% | 1.8% | 3.8% | 2.9% | 2.5% | 3.7% | 2.9% |
| Airline Traffic (RPK %) | 6.0% | 3.1% | 3.7% | 5.9% | 5.8% | 3.7% | 6.1% | 4.8% |
| Airplane Fleet (%) | 5.0% | 1.8% | 2.7% | 4.8% | 4.4% | 3.1% | 3.8% | 3.6% |
| **Market Size** | | | | | | | | |
| Deliveries | 15,130 | 8,330 | 7,570 | 3,310 | 2,960 | 1,170 | 1,150 | 39,620 |
| Market Value ($B) | 2,350 | 1,030 | 1,120 | 770 | 350 | 140 | 170 | 5,930 |
| Average Value ($M) | 160 | 120 | 150 | 230 | 120 | 120 | 150 | 150 |
| Unit Share | 38% | 21% | 19% | 8% | 7% | 3% | 3% | 100% |
| Value Share | 40% | 17% | 19% | 13% | 6% | 2% | 3% | 100% |
| **New Airplane Deliveries** | | | | | | | | |
| Large Widebody | 130 | 20 | 30 | 320 | - | 30 | - | 530 |
| Medium Widebody | 1,490 | 420 | 570 | 850 | 30 | 50 | 60 | 3,470 |
| Small Widebody | 2,060 | 930 | 960 | 560 | 260 | 90 | 240 | 5,100 |
| Single Aisle | 11,160 | 5,440 | 5,880 | 1,510 | 2,530 | 810 | 810 | 28,140 |
| Regional Jets | 290 | 1,520 | 130 | 70 | 140 | 190 | 40 | 2,380 |
| Total | 15,130 | 8,330 | 7,570 | 3,310 | 2,960 | 1,170 | 1,150 | 39,620 |
| **Market Value (2015 $B catalog prices)** | | | | | | | | |
| Large Widebody | 50 | 10 | 10 | 140 | - | 10 | - | 220 |
| Medium Widebody | 520 | 160 | 200 | 320 | 10 | 20 | 20 | 1,250 |
| Small Widebody | 590 | 220 | 260 | 150 | 60 | 20 | 30 | 1,350 |
| Single Aisle | 1,210 | 570 | 640 | 160 | 270 | 70 | 80 | 3,000 |
| Regional Jets | 10 | 70 | 10 | - | 10 | 10 | - | 110 |
| Total | 2,350 | 1,030 | 1,120 | 770 | 350 | 140 | 170 | 5,930 |
| **2015 Fleet** | | | | | | | | |
| Large Widebody | 270 | 100 | 170 | 140 | - | 50 | 10 | 740 |
| Medium Widebody | 540 | 320 | 360 | 320 | 20 | 20 | 60 | 1,640 |
| Small Widebody | 860 | 750 | 440 | 250 | 140 | 140 | 80 | 2,660 |
| Single Aisle | 4,540 | 4,010 | 3,370 | 590 | 1,280 | 650 | 430 | 14,870 |
| Regional Jets | 140 | 1,730 | 270 | 70 | 110 | 170 | 110 | 2,600 |
| Total | 6,350 | 6,910 | 4,610 | 1,370 | 1,550 | 1,030 | 690 | 22,510 |
| **2035 Fleet** | | | | | | | | |
| Large Wide-body | 70 | 60 | 100 | 320 | - | 50 | - | 700 |
| Medium Wide-body | 1,590 | 480 | 610 | 840 | 40 | 70 | 80 | 3,690 |
| Small Wide-body | 2,340 | 1,150 | 1,140 | 610 | 350 | 170 | 300 | 6,060 |
| Single Aisle | 12,560 | 6,630 | 5,920 | 1,660 | 3,110 | 1,380 | 1,020 | 32,280 |
| Regional Jets | 310 | 1,520 | 150 | 80 | 160 | 230 | 60 | 2,510 |
| Total | 16,970 | 9,820 | 7,920 | 3,510 | 3,660 | 1,900 | 1,460 | 45,240 |

**Single-aisle identified as one segment**; LCAs not divided into "small" and "large" based on seat count, range, etc.

2 Source: Boeing Current Market Outlook, 2016-2035

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# 150 seats is an arbitrary divide

## More seats

Sometimes, airlines get bigger simply by putting more seats on existing airplanes, as in these examples:

| *Airline* | *Aircraft type* | *Before* | *After* |
|---|---|---|---|
| American Airlines | Boeing 737-800 | 150 | 160 |
| American Airlines | Boeing 777-200 | 247 | 289* |
| Frontier Airlines | Airbus A320 | 170 | 186* |
| Southwest Airlines | Boeing 737-700 | 137 | 143 |

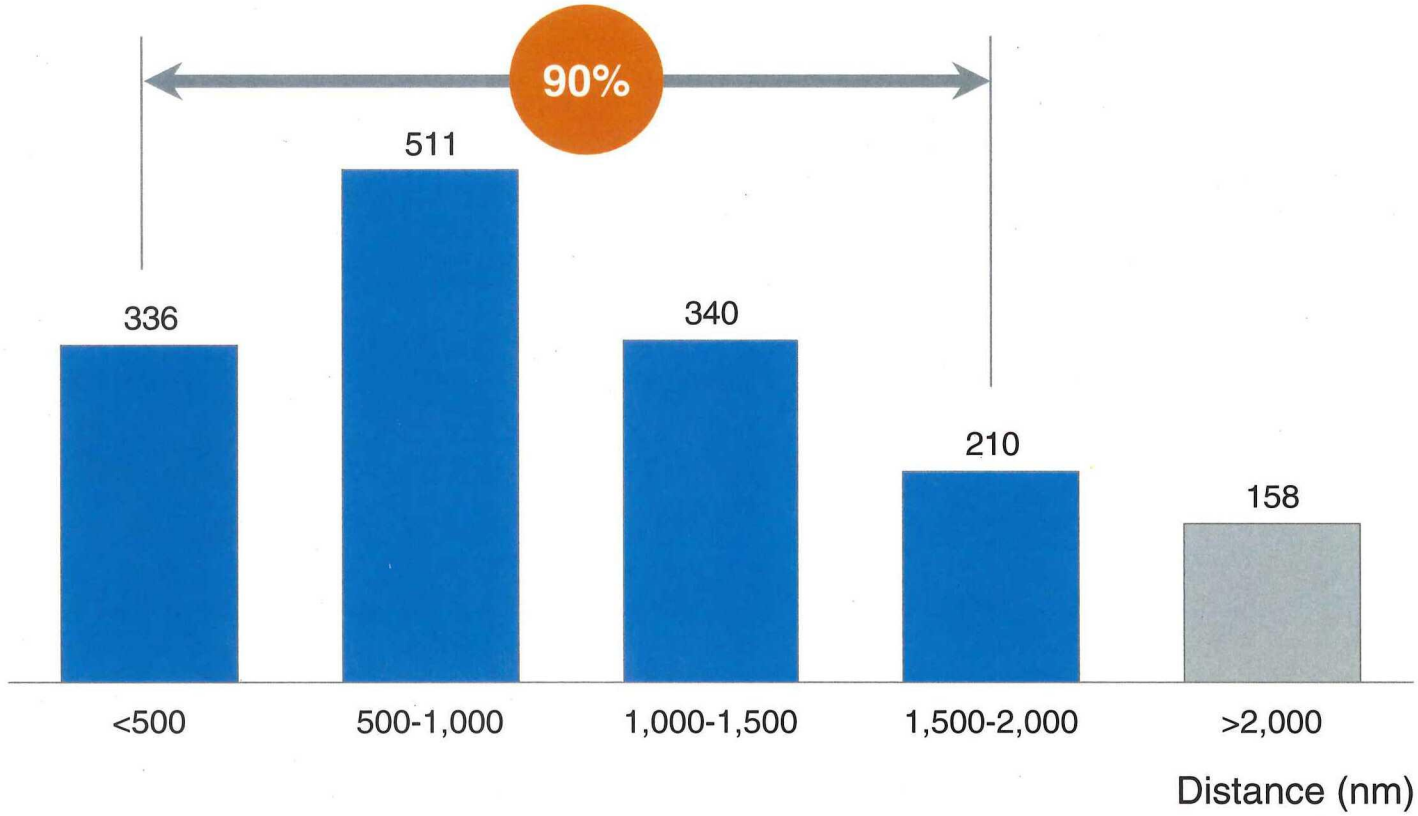
*Planned



Source: consultancy.uk

# 2,900 nautical miles is an irrelevant dividing line

**Number of US city pairs**
May 2017






Source: Embraer Commercial Aviation website; DiiO

# All 737 models operate under same FAA type certificate

**Screenshot from Federal Aviation Administration Boeing 737 Type Certificate Data Sheet, March 2017**

**DEPARTMENT OF TRANSPORTATION**
**FEDERAL AVIATION ADMINISTRATION**

A16WE
Revision 58
BOEING
737-100 Series
737-200 Series
737-200C Series
737-300 Series
737-400 Series
737-500 Series
737-700 Series
737-800 Series
737-600 Series
737-700C Series
737-900 Series
737-900ER Series
737-8
Dat **March 8, 2017**

**TYPE CERTIFICATE DATA SHEET A16WE**

This data sheet, which is part of Type Certificate No. A16WE, prescribes conditions and limitations under which the product for which the type certificate was issued meets the airworthiness requirements of the Federal Aviation Regulations.

Type Certificate Holder: The Boeing Company
1901 Oakesdale Ave SW
Renton, WA 98057-2623

**I - Model 737-100 (Approved December 15, 1967) Transport Aircraft**



Source: FAA website, March 8 2017 screenshot

# Common manufacturing facilities for 737 family

**Screenshot from Boeing Company website, May 2017**

## Overview

Boeing's 737 factory at the Renton, Wash., site leads the industry as the most efficient airplane factory in the world. More than 11,600 commercial airplanes (707, 727, 737, and 757) or about 30 percent of the worldwide fleet flying today were built in Renton. According the Guinness World Records, the 737 is the "most produced large commercial jet" in aviation history. Covering 1.1 million square feet of factory space, the 737 program rolls out 42 airplanes a month and is expected to increase the rate to 47 a month in 2017 and 52 in 2018. From the time a fuselage enters the factory, it takes 10 days to complete an airplane. The final assembly building has two moving lines producing Next-Generation 737s and a third that will initially produce the 737 MAX beginning in 2015. The P-8, a Navy submarine hunter and maritime patrol aircraft, and a military derivative of the 737-800, is also built at Renton.

"**Renton went on to produce the 737 family (Initial Model, Classic, and Next Generation),** the 757, the 767, and the Navy's P-8A Poseidon patrol aircraft. **The newest family member, the 737 MAX will begin production in 2015**."

*– Boeing Co website*



Source: Boeing company website (May 2017)

# Boeing markets 737s as a family

+ SHARE

## Next-Generation 737 Design Highlights

737-900ER

737-800

737-700, 737-700C, 737-700ER

**ONE AIRPLANE IN THREE SIZES**

**As new market opportunities develop, Next-Generation 737 operators can grow their fleets with a lower investment in parts, equipment, and training:**

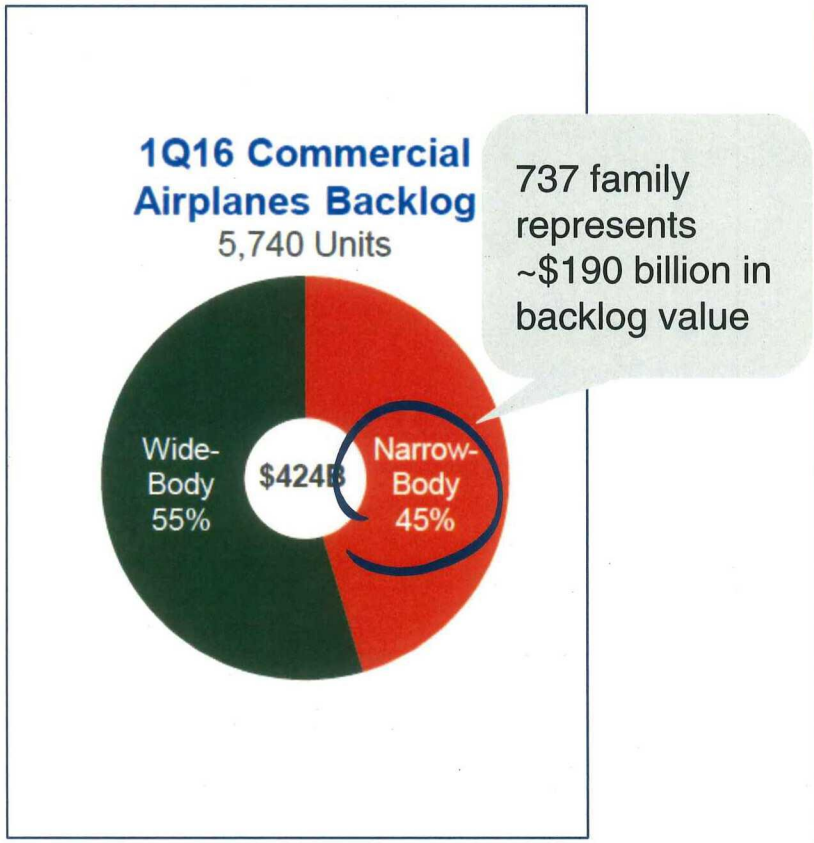
- Common flight deck
- Common engines
- Common airframe spares
- Common ground handling equipment

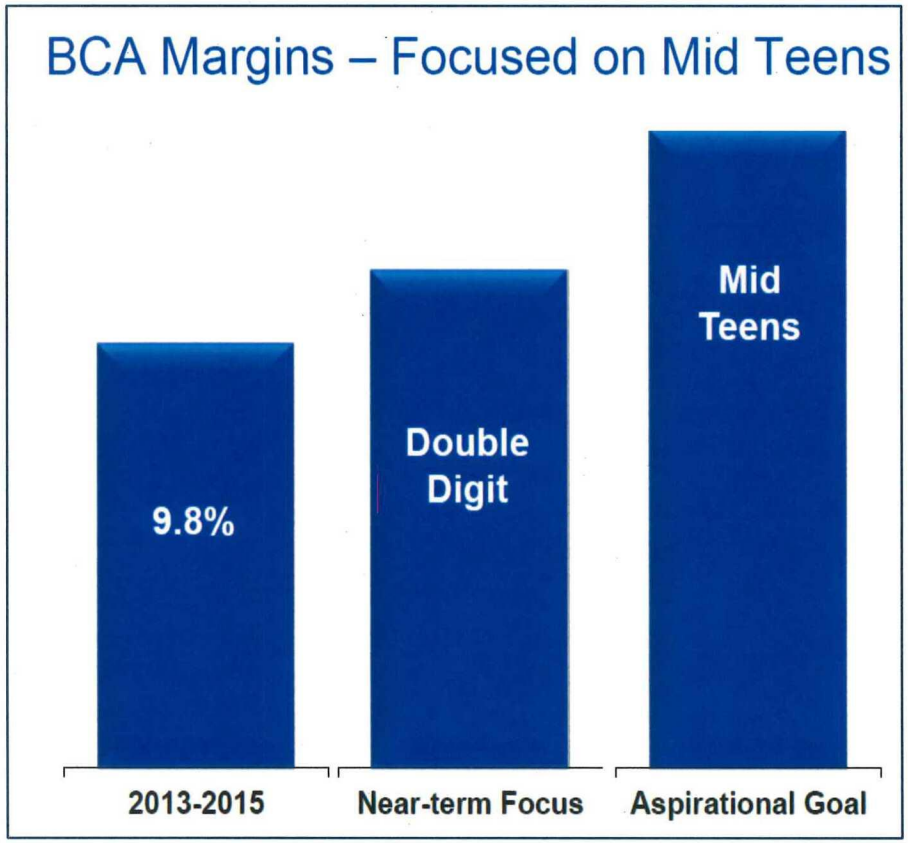


Source: Boeing Company Website, Next-Generation 737, Commonality

# 737 aircraft family enjoys robust financial health

***Screenshots from Boeing Co. May 2016 Commercial Airplanes Investor Conference***



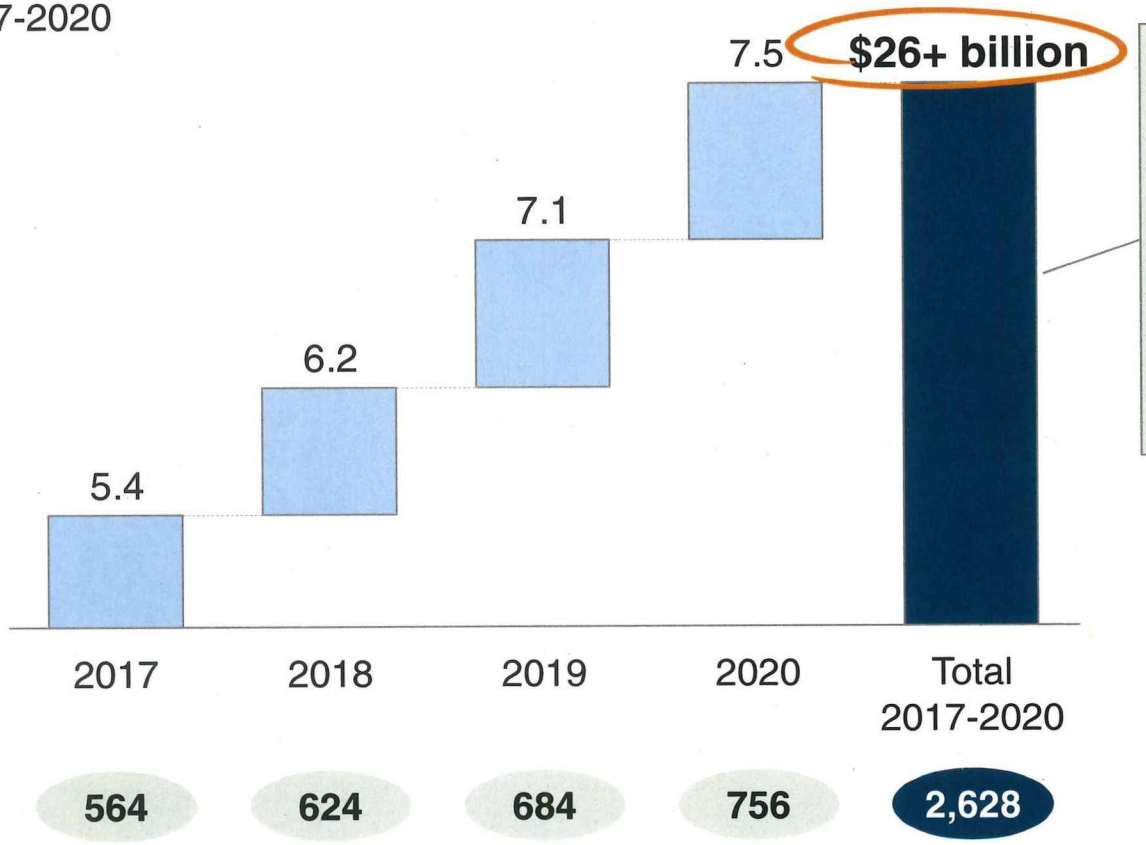






Source: Boeing Co. May 2016 Commercial Airplanes Investor Conference, slide 4 and 11/13

# 737 family is projected to generate $26+ billion in cash flows over 2017-2020

**Forecasted FCF of 737 Max and NG**
$ billions, 2017-2020




If Boeing had won Delta campaign, estimated FCF ($0.7B) would have represented ~3% of FCF over period[2]

| *Forecasted aircraft deliveries*[1] | 564 | 624 | 684 | 756 | 2,628 |
|---|---|---|---|---|---|

1. Based on announced Boeing production capacity of: 47 aircraft/month in 2017, 52/month in 2018, 57/month in 2019 and 63/month in 2020.
2. Based on average Boeing FCF per aircraft calculated as total forecasted FCF over period divided by number of aircraft.
Source: Flight Global, May 2017; UBS: "Boeing Co.: Incorporating Improved Commercial & Defense Outlooks", February 1 2017



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# Boeing sold United larger 737-700s at cut-rate prices to prevent Bombardier from gaining a foothold

"If Bombardier, which has had trouble securing customers for the CSeries, had won the United order, 'that would've been **a validation of this CSeries in the marketplace**, I think. So very important for us to win that.'"

*- quoting Ray Conner, Boeing Vice Chairman & President and CEO, Commercial Airplanes*
*February 2016 Employee Address*



Source: Price war, plane transitions put Boeing in financial crunch, *Seattle Times*, April 1, 2016

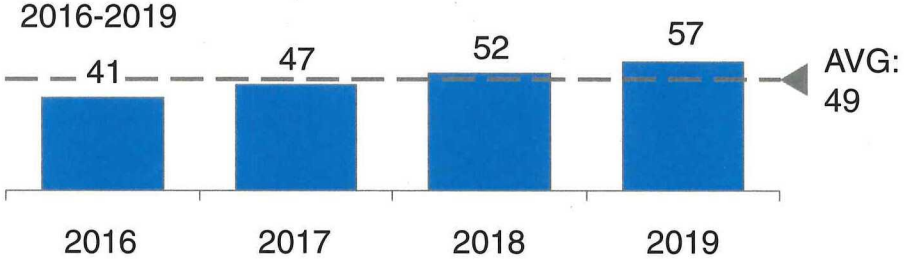
# Boeing has a comfortable 7-8 year backlog

**With 4,500 Boeing 737s in backlog…**

**Worldwide 737 backlog**
Number of aircraft, May 2017


**… and average production capacity of 49 aircraft per month**

**Boeing 737 monthly production forecast**
2016-2019

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**~7-8 year backlog**

"Our high confidence in increasing 737 production to 57 per month by 2019 is based on our existing **backlog of more than 4,500 aircraft and a production skyline that is oversold through the end of the decade**."

*- Dennis Muilenburg, Boeing CEO , April 2017*



Source: Ascend; Bombardier analysis