



# STRATOS

Gary Fitzgerald  
CEO, May 2018

**New aircraft production issues &  
rapidly changing maintenance practices:  
impact on investors**



# Stratos: What We Do



Track Record: <sup>1</sup> 28 aircraft purchased; <sup>2</sup> \$500m raised, \$200m syndicated; <sup>3</sup> 23 aircraft leased/sold, 5 SLB; <sup>4</sup> \$1bn portfolio under management

In Strict Confidence



# Stratos: Who We Are



## Commercial & Marketing



Gary Fitzgerald  
CEO



Camille Pousseur  
Marketing Director



Brian Jeffery  
Marketing Director



Mark Shaw  
Marketing Director



Mike Sanders  
Marketing Director



## Finance & Admin



Lourens Geldenhuys  
Corporate Finance Director



Kristian Lindberg  
Lease & Finance Manager



Ana Urien  
Legal & Contracts Manager



Mike O Hurley  
Lease Manager



## Technical Services



Ian Butcher  
Technical Director



Erv Bach  
Technical Advisor  
Structures Specialist



Ben Hogan  
Technical Advisor  
Engine Specialist



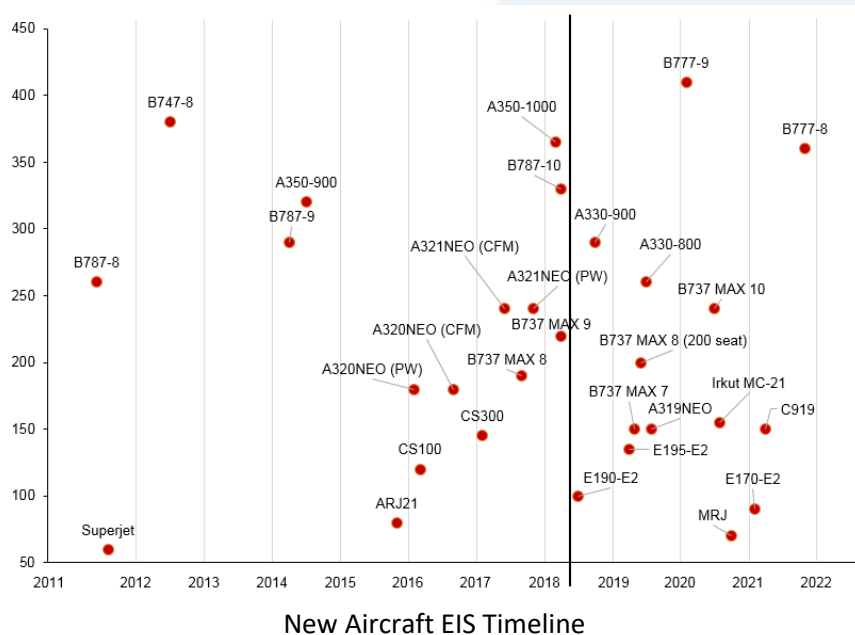
Josh Alexander  
Technical Advisor  
Inspection Specialist

In Strict Confidence



# Context: Production Crossover

- Massive transition phase - all aircraft being upgraded
- Most performance improvement is concentrated in the engines
- Airframe & engine OEMs differing economic models: cash on delivery vs subscription



Fuel Price Evolution

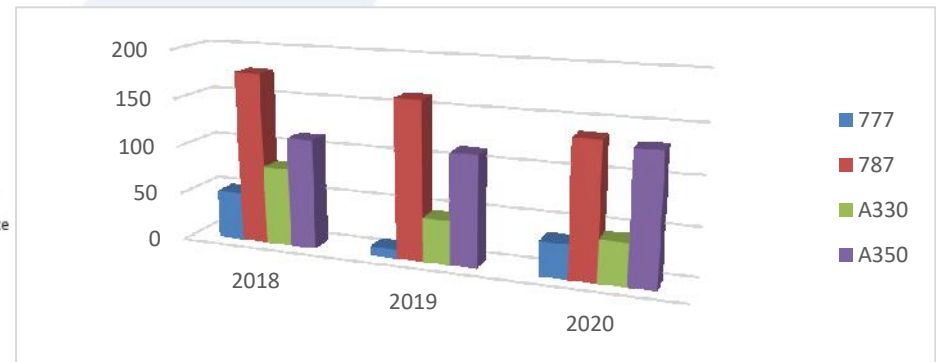
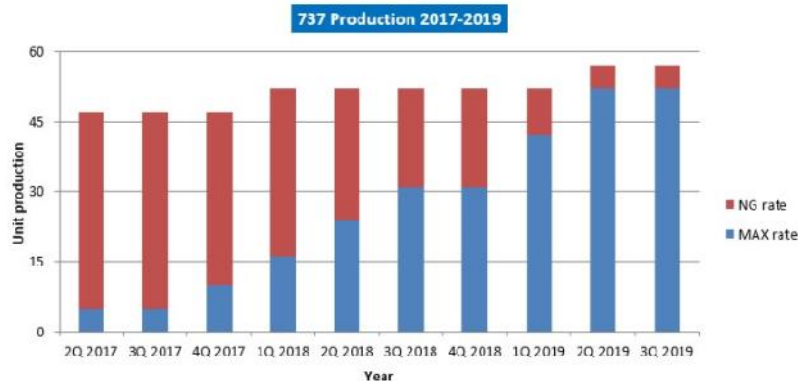
Sources: BOCA, Bloomberg

In Strict Confidence



# Context: Production Acceleration

- 2017 Narrowbody Deliveries: CEO/NEO: 377/181 & NG/MAX: 455/74
- Production planned ramp up: 737 @ 47, soon 57, A320 @ 50 soon 63..
- Will the supply chain support this?
- Can airlines continue to fill all new deliveries?
- What happens to older kit if/when fuel rises again?



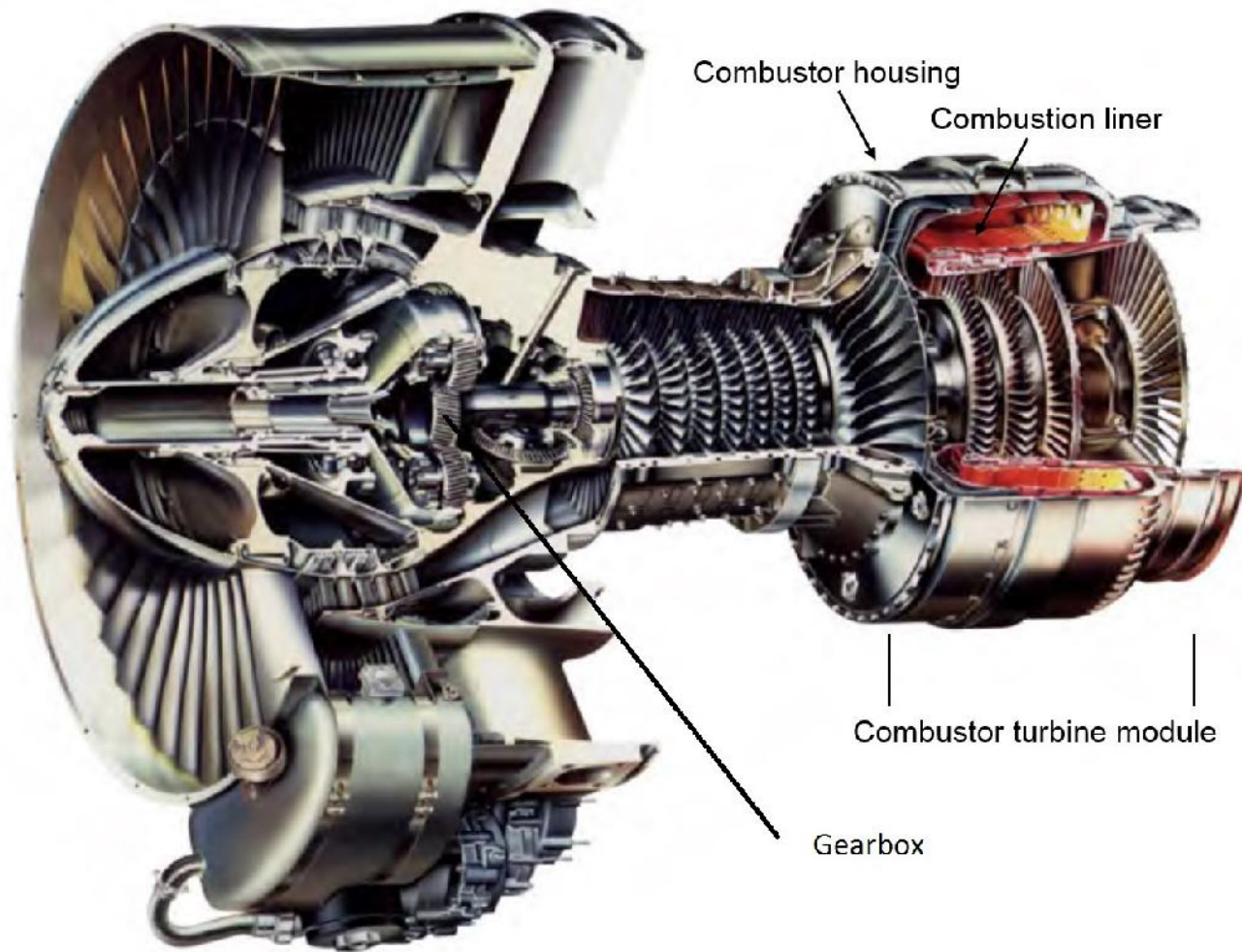
Sources: Airbus, Boeing

In Strict Confidence





# Engine Mechanics





# Context: Engine Issues

- All engine OEMs pushing limits of technology: early reliability & performance issues
- Snags will eventually be fixed, but unprecedented number of issues across all OEMs:
  - GE: GEnx icing & fan blade problems
  - RR: T1000 (787) issues will be fully fixed by 2022 & ~\$800m cost to RR\*
  - PW: GTF: min 12 mths to fix combustor, final resolution for all issues 2021.
  - CFM: LEAP HPT Stage 2 cracking AD, fuel performance issues
- Affecting MROs: TATs for T700 & GE90 badly affected, few V2500/CFM56-5/7 spares
- All engine OEMs have aggressively pursued aftermarket contracts: warranties issues become a double whammy
- Airframers starting to hoard data / IP to secure future modifications/services revenues

---

\*RR Results March 2018



# Rapidly Changing Maintenance Practices

- 🔌 Aircraft are now live-streaming maintenance data, “intelligent airframes” etc
- 🔌 Access to and ownership of data getting restricted by most OEMs
- 🔌 Boeing 787, Embraer EJets modifications (inc cabin) very restricted
- 🔌 So much live data coming off aircraft today, OEMs are looking at ways to cash in..
- 🔌 Increasing OEM aftermarket control may start to impact competition
  - Boeing to triple services revenues to \$50B in next 5-10 years \*
  - Airbus to triple services revenues to \$10B by 2025\*

\*Sources: Reuters, Mar18

In Strict Confidence





# Impact on Investors

- 🔗 Temporary shortage of older A340/777-200ERs, several reactivated from storage
- 🔗 Non-interchangeable engine variants fragmenting fleets
- 🔗 Production delays cause:
  - Slower lessor trades: concentration of buyers lifting value of leases
  - Lease extensions of older kit: seems good for primary investors BUT wave of used aircraft may hit the market from 2019 on, coinciding with rising new supply
- 🔗 New aftermarket contract practices causing liquidity / liquidation concerns for RVs
- 🔗 Glut of speculative orders: some orderbooks have turned from an asset to a liability
- 🔗 Aircraft security package: lessors accruing considerable 'invisible risk' against OEMs