Aerospace: A Secular Growth Story

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Agenda

- Aerospace Market Trends
- What is the “Engine Super Cycle”? 
- Bodycote Civil Aviation Impact 
- Market Expansion
Passenger revenue kilometres
Traffic has proven to be resilient to external shocks and doubles every 15 years

Source: ICAO, Airbus GMF 2018
What is the “Engine Super Cycle”? 

The super cycle is used to describe a unique, simultaneous launch and production ramp up of five jet engines:

- GE9X
- LEAP
- RR-Trent XWB
- PW1000
- Trent 1000
Commercial aircraft

- Embraer E190
- A320neo
- CFM LEAP & PW1000
- B737 MAX
- CFM LEAP
- RR Trent XWB
- A350
- GE 9X
- B777X
- RR Trent 1000
- Mitsubishi RJ
- PW1000
- Airbus A220
- PW1000
- C919
- PW1000
Commercial aircraft continued expansion

- Airbus and Boeing dominate the commercial market
- Projected total > 37,000 new deliveries

The world fleet will more than double over the next 20 years

Around 37,400 aircraft will be required over the next 20 years (2018 – 2037 new deliveries)
A variety of applications
Services provided by Bodycote

HIP Services

Surface Technology

Vacuum Heat Treatment

Powdermet®

Brazing

Electron Beam Welding
Some examples of our long-term agreements in place are:

- Rolls-Royce: Trent & XWB
- Precision Castparts Corp: LEAP, GE9X, RR Trent, & XWB
- GE Aviation: LEAP
- Paradigm Precision: LEAP
- MB Aerospace: GE9X
- Safran Landing Gear (SLS): A350 & B787
- Figeac Aerospace: A350

Incremental sales from LTAs over the next 15 years worth well over £750m
LEAP engines projected to have the highest market share in the narrow bodied market, replacing CFM56 as the mainstay option

- Bodycote’s OEM content per engine on LEAP is 3 times that on CFM56
- As production on new LEAP engines ramps up, Bodycote will benefit
Bodycote content on LEAP is three times that on CFM 56

Additionally, as the aftermarket for LEAP develops over time it leads to an increasing rate of revenue growth for Bodycote
Summary

Improving share in a growing market

- Passenger kilometres growing consistently at c6% per annum
- Massive demand for new aeroplanes over next 20 years
- Bodycote has an enhanced position on key new platforms
- This will boost revenues initially from new aeroplane sales
- Over time, this will be further boosted by growing aftermarket sales on these new platforms
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