



Cents

**Circular Economy Network+
in Transportation Systems**

Identifying the Potential for Zero Waste
Decommissioning of Commercial Aircraft

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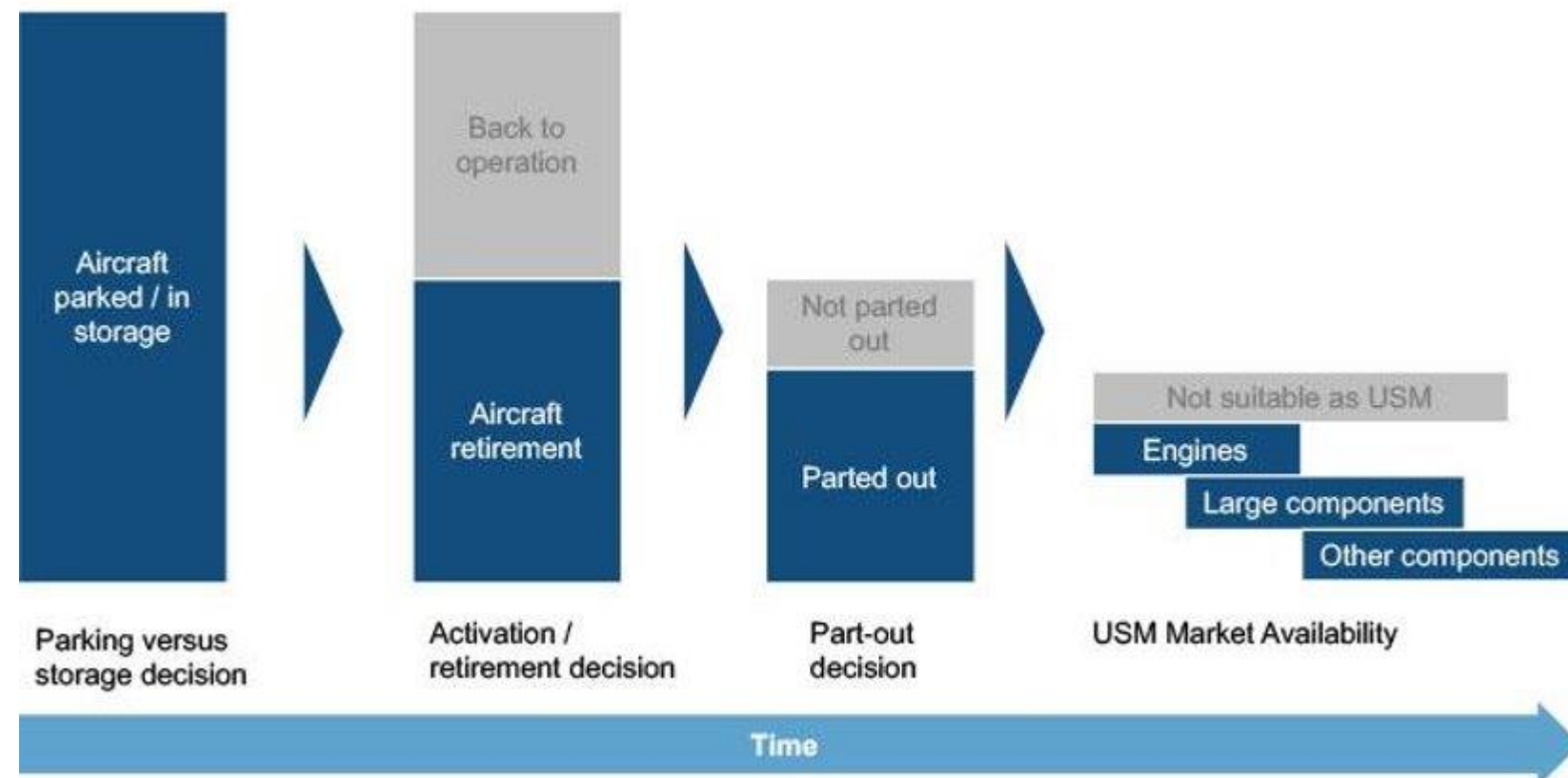
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Rationale

- In a 'normal' year between 800 to 1000 commercial aircraft are retired.
- Between 70 to 85% of the aircraft is 'recycled'
- In 2020, between 5000 & 7000 were expected to be removed from service
- Leasing companies & airlines are keen to see more reuse



Market Size

- UK : #3 (120 aircraft/year)
- Dominated by two major operators

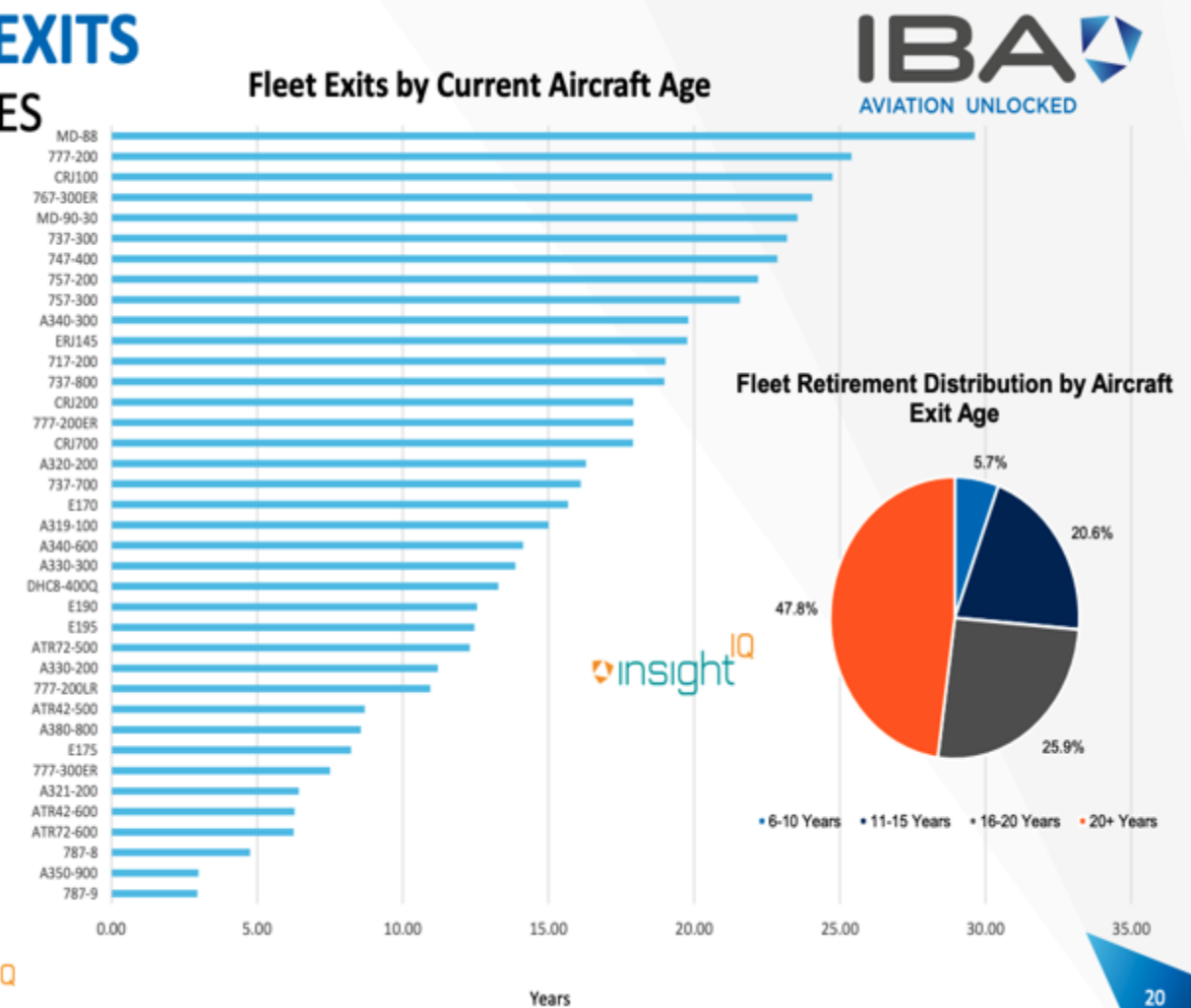
Highest reuse

- Tarmac Aerosave (85%)

AIRCRAFT FLEET EXITS

AIRCRAFT AGE PROFILES

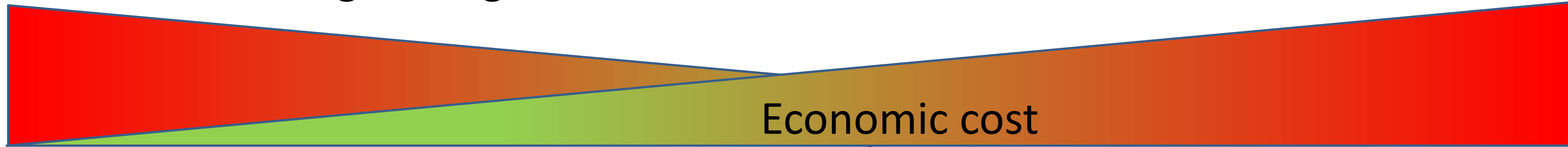
- > Some types represented easier targets – MD80/90, 747-400 and 767-300ER fleets ageing
- > Average age of aircraft assumed to be retiring – 20 years old
- > Of the circa 1,500 fleet exits, IBA has estimated around 712 of these will face retirement upon exit
- > Around half of expected retirements are over 20+ years old
- > Younger retirements expect to feature A380, A340-600 and 777-200LR



Under half (48%) of fleet exits are of aircraft over 20 years old while 26% are aged between 16 and 20 years. Thus, just under two thirds of all fleet exits are over 15 years old.



Decommissioning strategies



Shredding



Systematic disassembly



Current Progress

Decommissioning

- Cycle time: 30 to 40 days
- Around 1000 parts are currently removed and re-enter the market (approx. 80 to 90% of the aircraft value)
- Remaining
 - Fuselage, seats, wings, interior panels, floorboards



Current Progress

- Creative usage but low volume



Next Steps

Project to end in March 2021

- Waste stream analysis
- Supply chain gaps
- Trends in aircraft material usage
- Current inefficiencies in disassembly

Exam question

What alternative uses do you see for the material which is removed?

