



# Engine Lease Finance

## Ishka's Engine Briefing – Spare Engine Leasing 101

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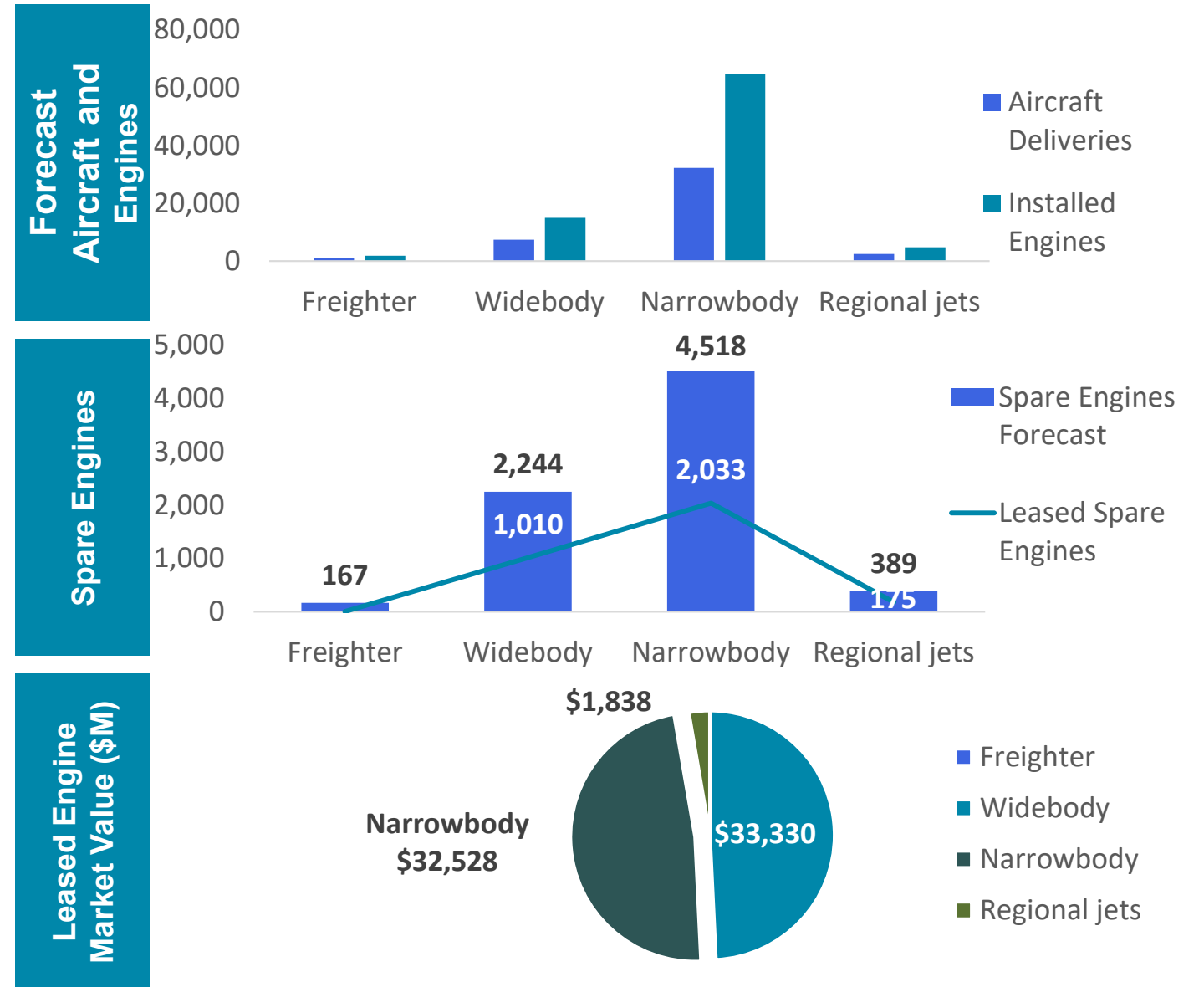
13th January 2021

# The Spare Engine Lease Market

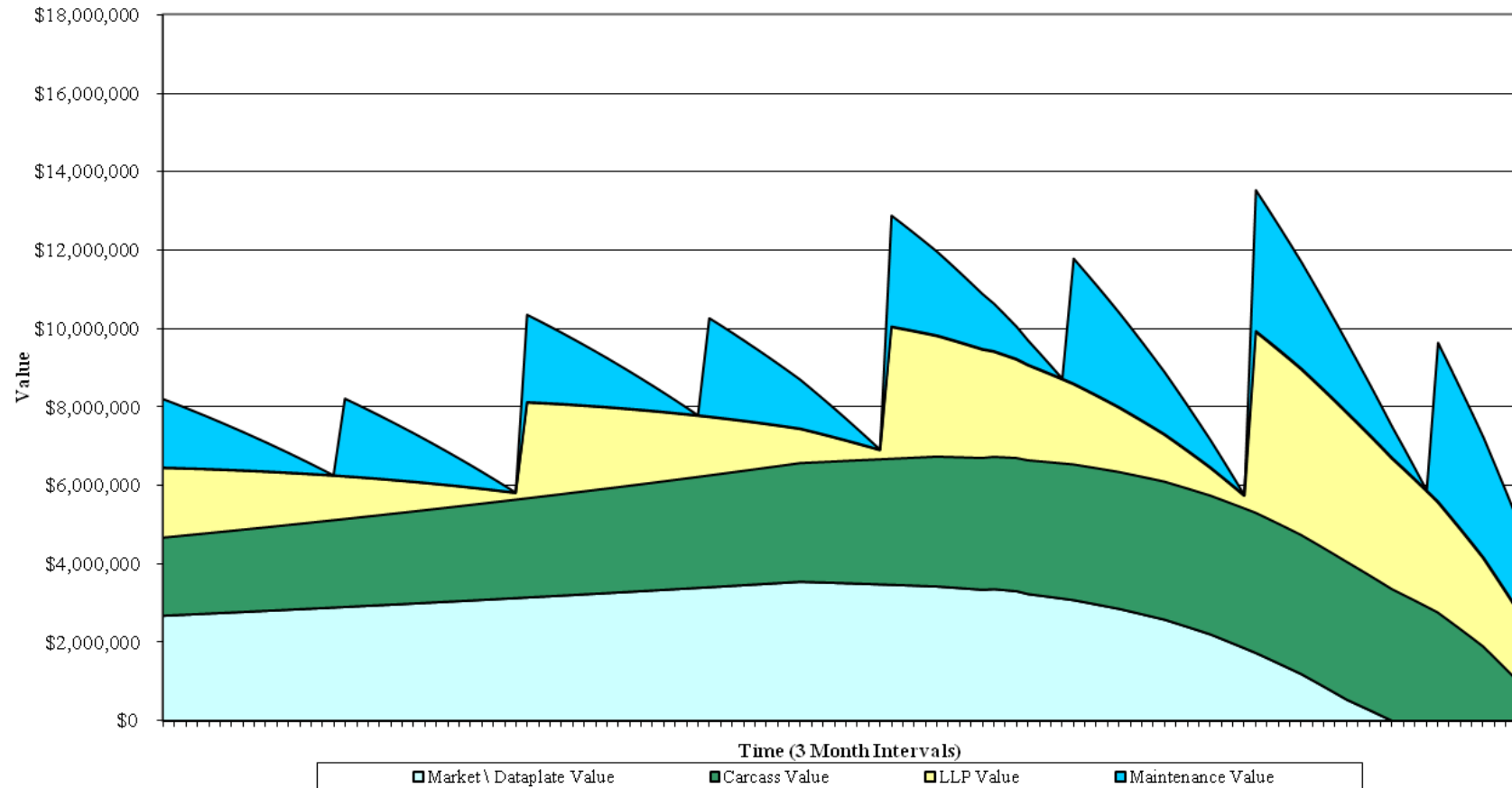


## 20 Year Forecast:

- ✈ OEM aircraft backlog approx. 43,110
- ✈ ~7,300 spare engines required
- ✈ ~3,200 additional leased spare engines
- ✈ Spare engine lessor investment ~\$3.4B per annum
- ✈ ~2,000 narrowbody engines (\$32.5B)



# Engine Value Characteristics



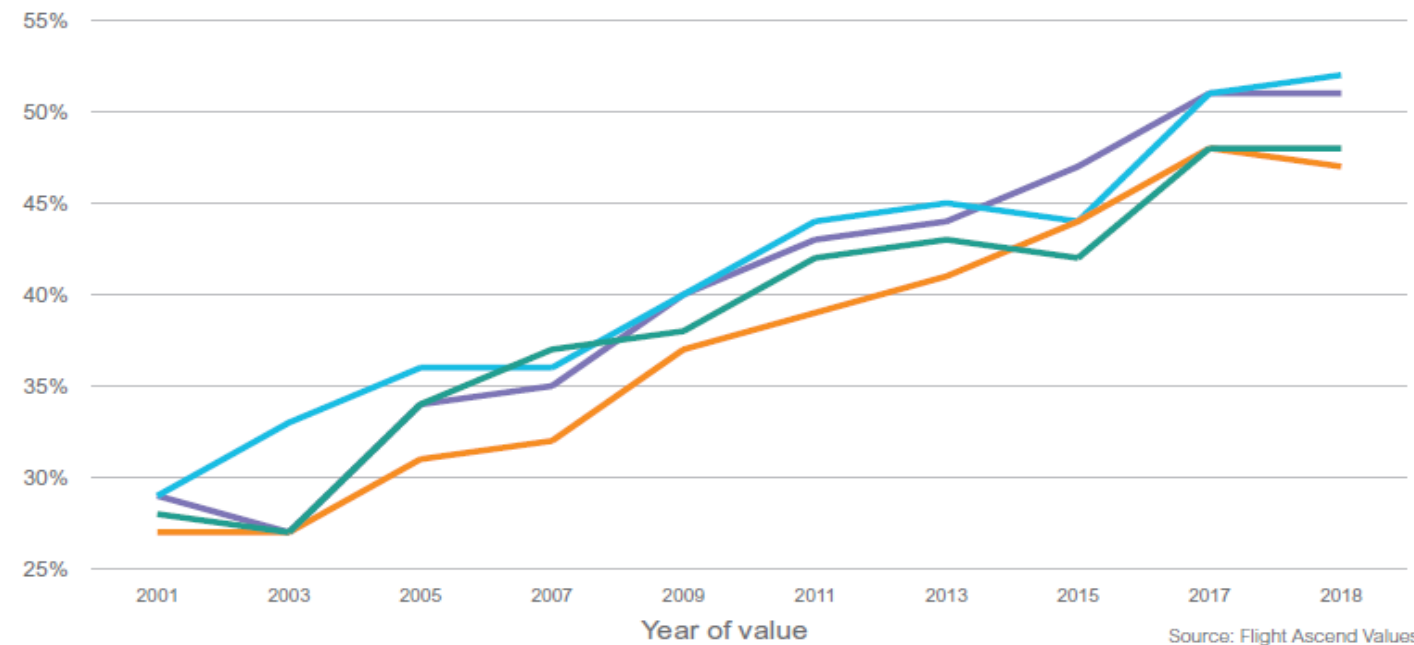
- ✈ Engine maintenance value accounts for the value of LLPs and the value associated with on-wing time to next performance restoration.
- ✈ Core value is the value of non-LLPs and the engine dataplate.

# Engine Value Retention is Strong



## Value of spare engines versus host aircraft

Value share of two spare engines versus host aircraft



Airbus A320-200 (CFM) CMV    Airbus A320-200 (CFM) CBV    Boeing 737-800 (CFM) CMV    Boeing 737-800 (CFM) CBV

- The value of an aircraft depends increasingly on its engines over its life
- The value of the installed engines can grow from 25% to ~55% of the total aircraft value
- Engines can retain 100+% of historical cost after a 5+ year hold

# Engine values suffer less than aircraft values in Downturn

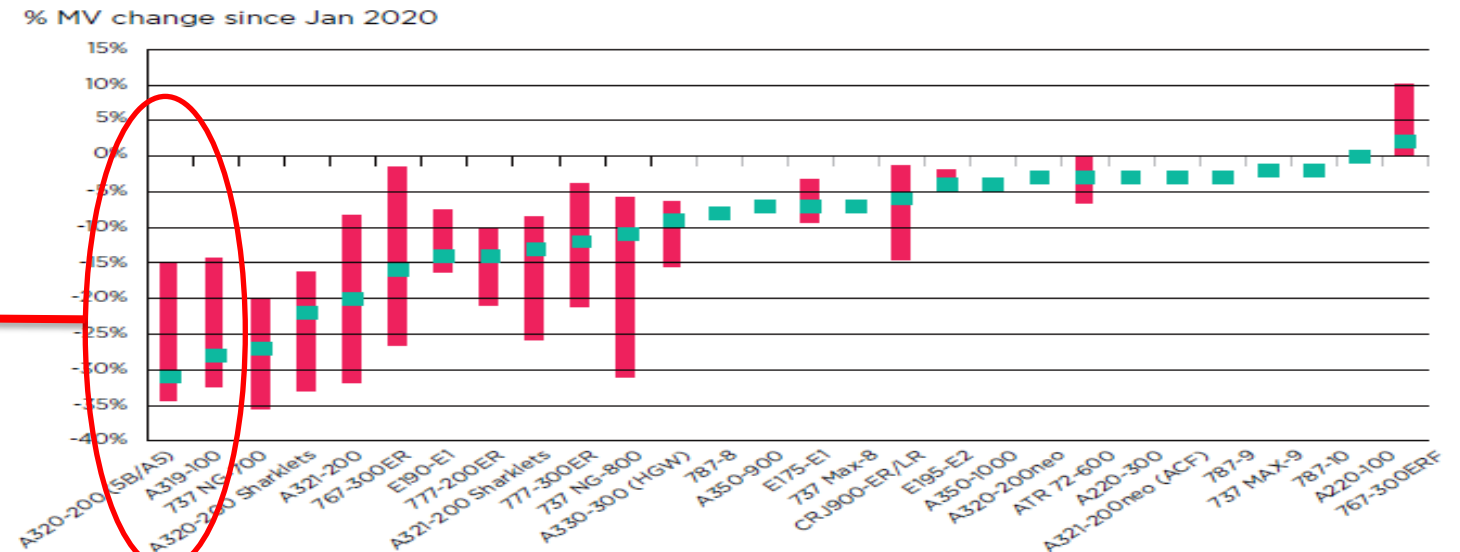
Host Aircraft	Engine	Pre-Covid	Post-Covid	Value Change
Boeing 737NG	CFM56-7B26	\$ 4,940,000	\$ 4,335,000	12%
	CFM56-7B26/3	\$ 6,330,000	\$ 5,685,000	10%
	CFM56-7B26E	\$ 7,880,000	\$ 7,190,000	9%
Airbus A320ceo	CFM56-5B4/P	\$ 4,850,000	\$4,260,000	12%
	CFM56-5B4/3	\$ 6,150,000	\$ 5,555,000	10%
	CFM56-5B4/3 PIP	\$ 6,950,000	\$ 6,420,000	8%
	CFM56-5B4/3B1 PIP	\$ 7,140,000	\$ 6,720,000	6%
	V2527-A5	\$ 4,810,000	\$ 4,445,000	8%
	V2527-A5 Select	\$ 5,950,000	\$ 5,570,000	6%

**737NG Spare Engine down 9-12%**  
**A320ceo Spare Engine down 6-12%**

Source: IBA

**737NG Aircraft down 12-27%**  
**A320ceo family Aircraft down 20-32%**

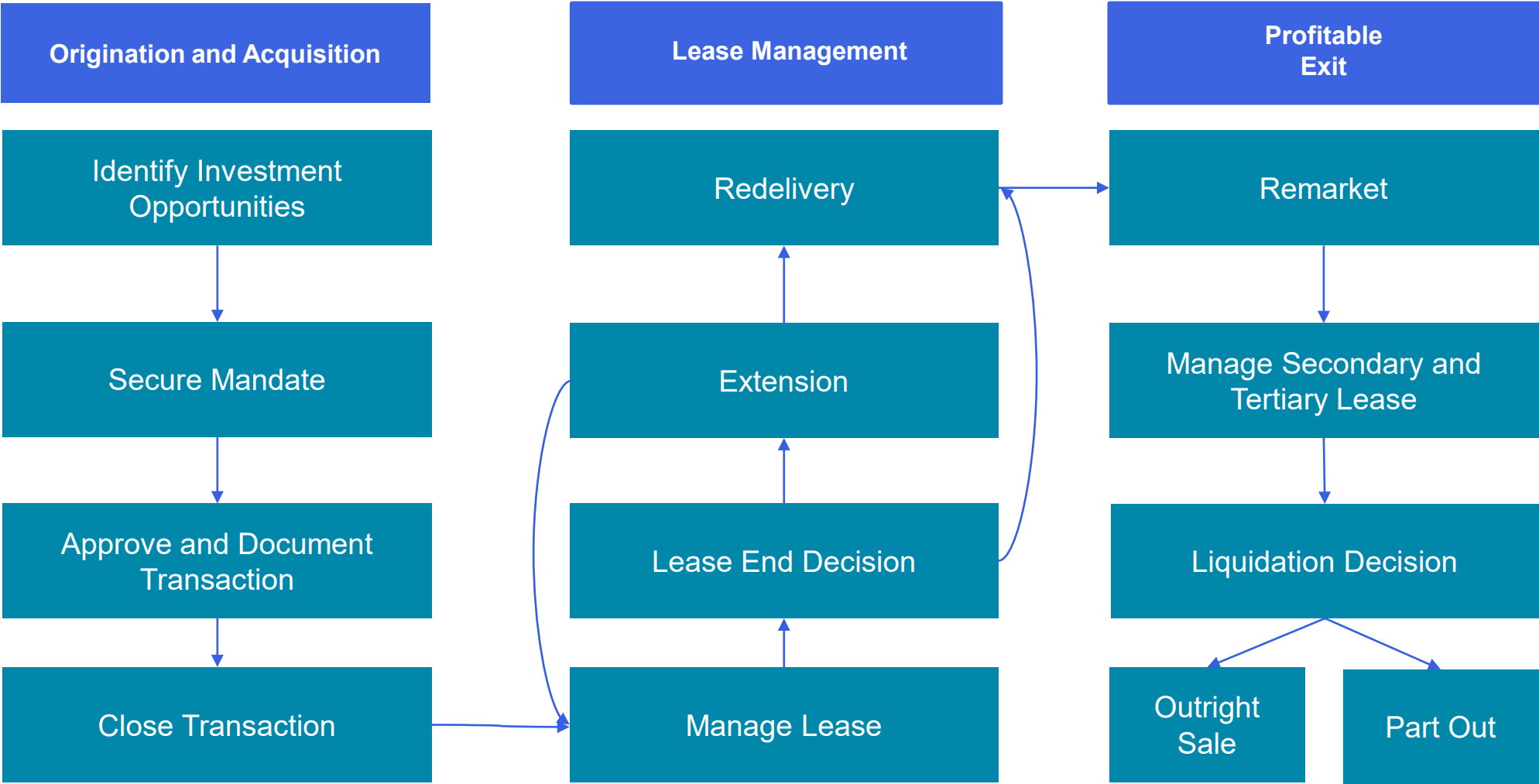
Market Value changes – most relevant to financiers, sorted by magnitude



Source: Cirium Values Analyzer analysis

Source: Cirium

# The Business Model



**Portfolio Management: Medium to Long Term View**

- Establish investment targets - engines and returns
- Consider asset, customer and geographic exposures

**Portfolio Management: Medium Term View**

- Continuously review portfolio composition
- Identify appropriate outright sale and syndication candidate engines

**Portfolio Management: Short to Medium Term View**

- Ensure maximum value is extracted from each individual engine



# THE ENGINE LESSOR TEMPLATE



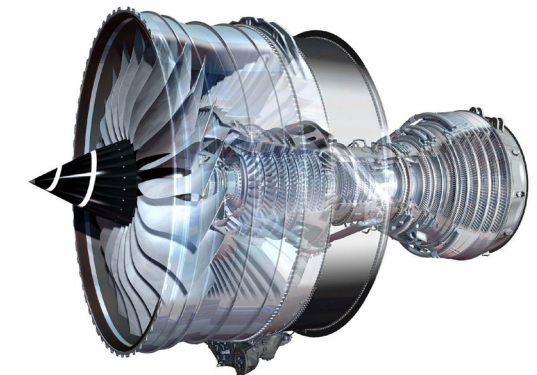
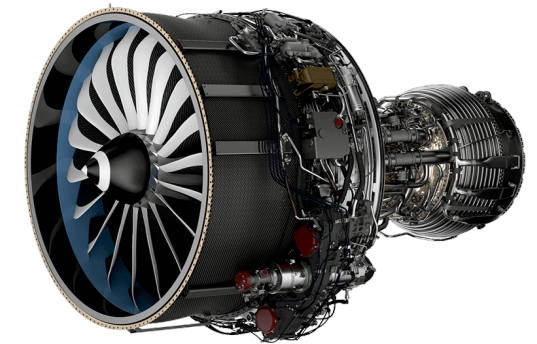
- Strength and Depth: ELF portfolio currently around 300 engines – long-term portfolio growth ongoing
- Access to Funding: strong and supportive parent company, Mitsubishi UFJ Lease & Finance
- Sophisticated Risk/Marketing Management: disciplined approach to acquisitions and rating of engine types / vintages
- Clear Portfolio Plan: Focus on vintage, 80:20 ratio of narrowbody vs widebody engine types
- Dynamic Portfolio management: continual replenishment of the platform – old engines out, new engines in
- Control of the life cycle: in-house vertical integration – maximize value through the life cycle including part-out
- Long-term Strategy: concentrate investment into engine types which offer strong residual values
- Global diverse presence: 81 staff, 11 nationalities, 9 countries.

- Shareholding in engine lease companies and Joint Ventures.
- Participation in funds / ABS.
- Syndication Platforms:
  - ELF prefers single partner strategy:
    - Investors selected on best fit basis (160 engines to date)
    - Shared risk/reward
    - ELF offers global positioning without the need for investor to build infrastructure
    - Expertise in product selection, risk management and global marketing / technical / legal teams
    - Market reputation and strength of ELF customer relationships built on repeat business over 3 decades.



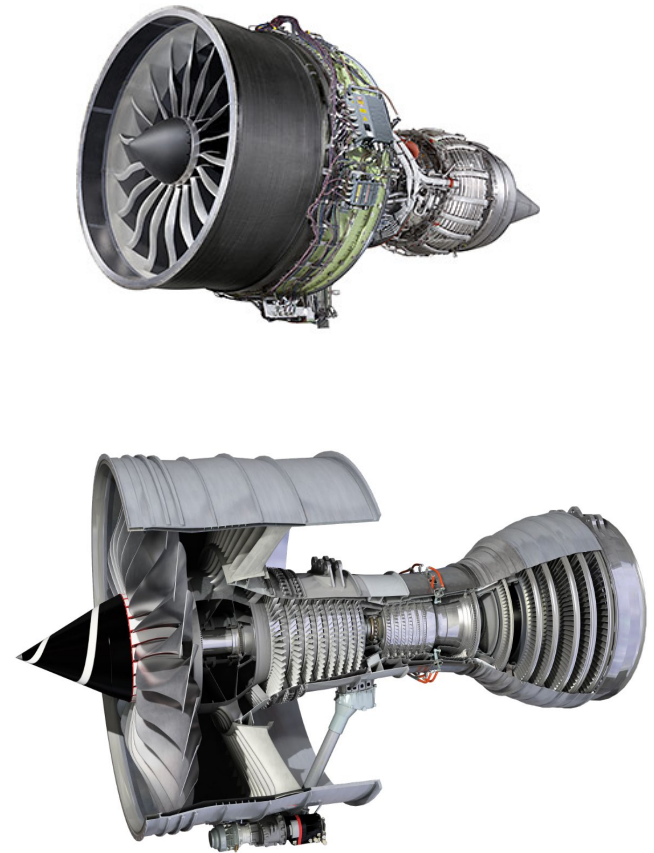
## It's all about the Vintage

- Covid-19 has accelerated the lifecycle of older vintage aircraft and engines
- Prudent long-term investors are trimming assets with early vintage tech standards
- Early aircraft retirements are likely to pre-date latest tech engine types (pre-Evolution/Select)
- Newer vintages of current technology narrowbody engines have a good long-term future
- But temporary oversupply and reduced shop visits will cause short-term carrying pain
- Investors with long-term plans should not panic – we are currently in a buyer's market
- New technology engine values have scarcely been affected (2-3%) but trading has been limited
- Pre-Covid new tech leases were booked at thin returns – disposal in the short-term not easy



## Greater Risk = Greater Reward?

- Fundamentals: x2 or x3 investment level per engine compared to narrow body
- Operator pool is much smaller
- Long-term stable primary lessee required – scarce during the pandemic
- Market size is much smaller (CFM56-7B: 737NG ~6,833 versus GE90-115B: 777 ~1,062)
- Re-leasing an engine is challenging at short notice and carrying cost is relatively high
- Recovery from global pandemic will be slower and longer
- Less long-term residual value certainty – more limited sales avenues, USM opportunities



## **New leases have been scarce – Why?**

- Lessors are keen to grow portfolios. Divestment of weak assets / weak leases is difficult (limited inter-lessor trading low)
- Airlines are focused on bigger financing solutions
- Cautious approach by lessors to new transactions (which airlines will survive?....)
- Reduced quantity of new engine deliveries as a result of deferred delivery schedules

## **What can we learn from deals / bids since the Outbreak?**

- The engine SLB market was cut-throat before the pandemic!
- Airlines are generally accepting higher lease rates, adjusted to new funding costs and with better appreciation of transactional risk
- Lessors are paying greater attention to security packages (reserves, deposits etc.)

## Fundamentals:

- Engines offer reliable operating parameters that lend themselves well to predictable cash flows.
- Long stable lifecycle matched to host aircraft type and intermixability through successive vintages.
- Value retention is assured through periodic maintenance, parts/labour inflation and high proportion of value derived from maintenance condition.
- No reconfiguration costs between leases. Assets are highly moveable and inexpensive to store.
- Cape Town Convention recognizes engines as separate assets from airframe.
- Leasing benefits airlines: long-term financing solution covering 100% of asset value at competitive cost with residual risk removed.
- Barriers to entry are high but there are various ways for investors to participate in the space.

### Engine Lessors should expect:

- Short-term pain (Current Tech Narrowbody) with surplus engines in the market + MRO activity stalled
- Medium-term pain (Widebody) with the host aircraft recovery likely to take the longest
- Lessors / servicers to work hard to capture short term engine leasing revenues to support existing portfolios
- **BUT Spare Engine market fundamentals for the long term remain attractive.**
  
- **New business opportunities will come soon:**
  - Short term lease demand will recover in 2021 as airlines either shop visit engines or defer maintenance
  - New OEM production rates will increase from 2021
  - SLB offers airlines a much-needed liquidity source and fleet management tool
- **BUT Lessors should remember the dangers of accepting weak security packages in future leases.**



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