



The Power of Flight

2018 Farnborough Air Show

CFM International Media Briefing

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Today's speakers



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Industry is strong

Consumers will spend 1% of GDP on air travel ... \$870 billion

RPKs grew 6% in April vs. 2017

Average load factor is above 80%

1,000 net new aircraft to be added to worldwide fleet in 2018

On watch ...

- Fuel costs ... now ~24% of average op cost
- Labor costs
- Cargo demand
- Interest rates



~\$34* billion net profit projected for 2018

For CFM, it is reflected in a solid order book



1,371 total orders through June

- 63 CFM56 (military, spares)
- 1,306 LEAP (installed, spares) ... total A320neo win rate is 58%
- \$19.7 billion U.S. value at list price

~15,450+ total LEAP orders/commitments (with spares)

Total backlog: **15,550+** engines (CFM56 & LEAP)

- Represents ~7 years of production at current levels
- ... uninterrupted LEAP engine deliveries since April 2016
- ... LEAP powering 75% of new single-aisle deliveries

LEAP: delivering what we promised

Performance

- 15+% better fuel efficiency
- Thrust, noise and emissions



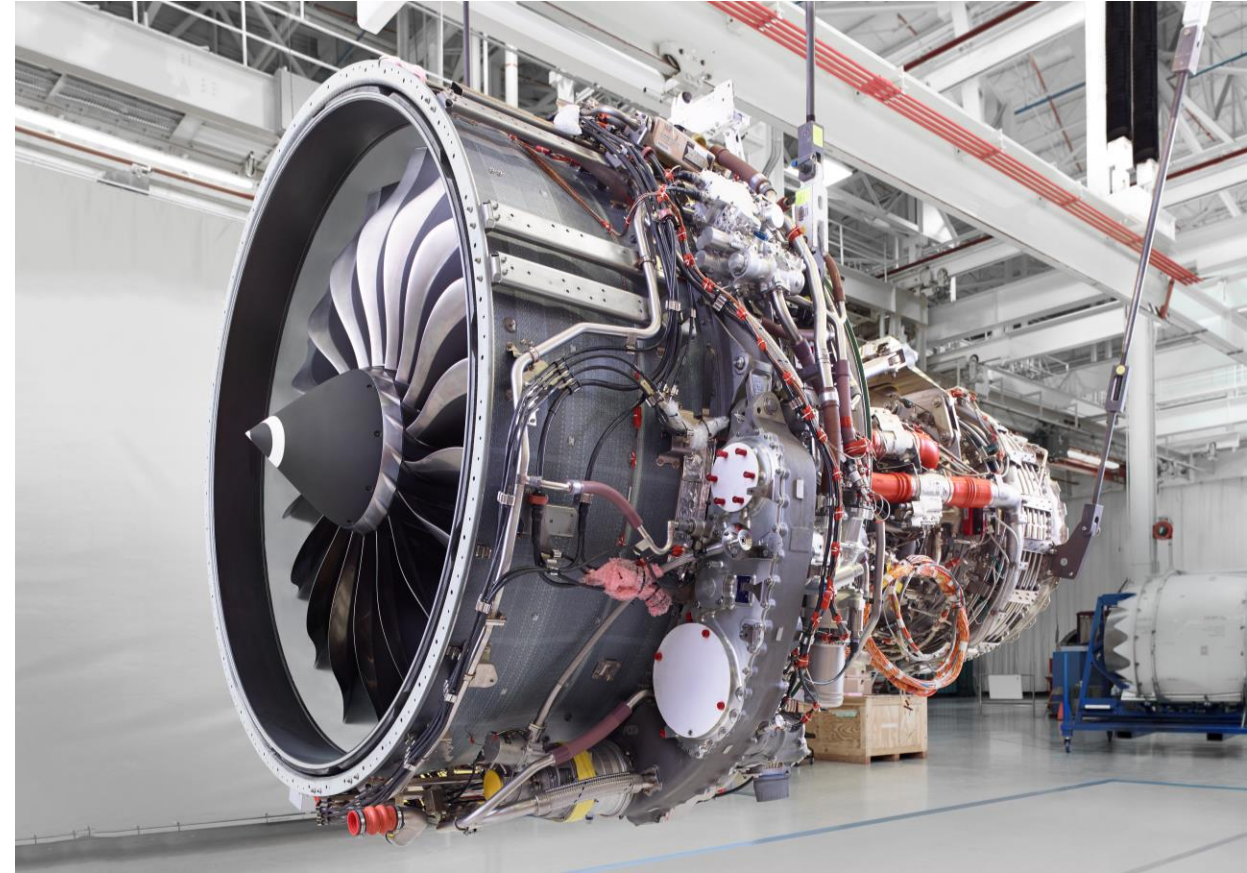
Best-in-class asset utilization

- Product reliability
- Predictive maintenance
- World-class support



Industry-leading support

- Global team of support engineers
- Broad offerings through CFM Services



Just shipped the 1,000th LEAP engine ...



Building more LEAP engines than CFM56 in 2018 ...

... in the midst of another record production year

2,100+ total engines planned by year end

- **1,100+ LEAP engines**
- **1,050 CFM56 engines**

2,000+ LEAP engines per year by 2020

... unprecedented ramp-up

Delivering at a higher rate than originally committed



Weekly rate **tripled** from 2Q2017 to 2Q2018

100% dual-source capability now on line

We will meet our 2018 commitments

Ramp up has been challenging

- Engine deliveries still late to initial request
- Paced by first time yields/variation in forgings and castings
- No technology issues
- Challenge bringing suppliers up to speed



... recovery rate closing the gap

Compared to first two years of the CFM56* ...



LEAP aircraft **hours/cycles** are growing at **2x+** the rate ... LEAP is logging 200,000+ hours per month

- CFM56: 4 years to one million hours
- LEAP: 22 months to one million hours

LEAP engine **delivery** is **3x** the rate

- CFM56: 320 engines
- LEAP: 1,000 engines

LEAP has **~3x** the in-service **customers**

- CFM56: 20 operators
- LEAP: 61 operators



*CFM56-5B & CFM56-7B

LEAP fleet in service ... 1.5+ million engine flight hours



96% flown days

LEAP-1A

EIS August 2016

540,760+ cycles

1.1+ million hours

26 operators

10+ hours average per day

~217 aircraft in service



LEAP-1B

EIS May 2017

156,460+ cycles

428,615+ hours

35 operators

10+ hours average per day

~166 aircraft in service

**The
Utilization
Advantage**



96% flown days

Quickly addressing field issues ...



LEAP-1A Starter Air Valve

- New part is improving delays and cancellations by 2X
- Additional improvements planned

LEAP-1B LPT disk

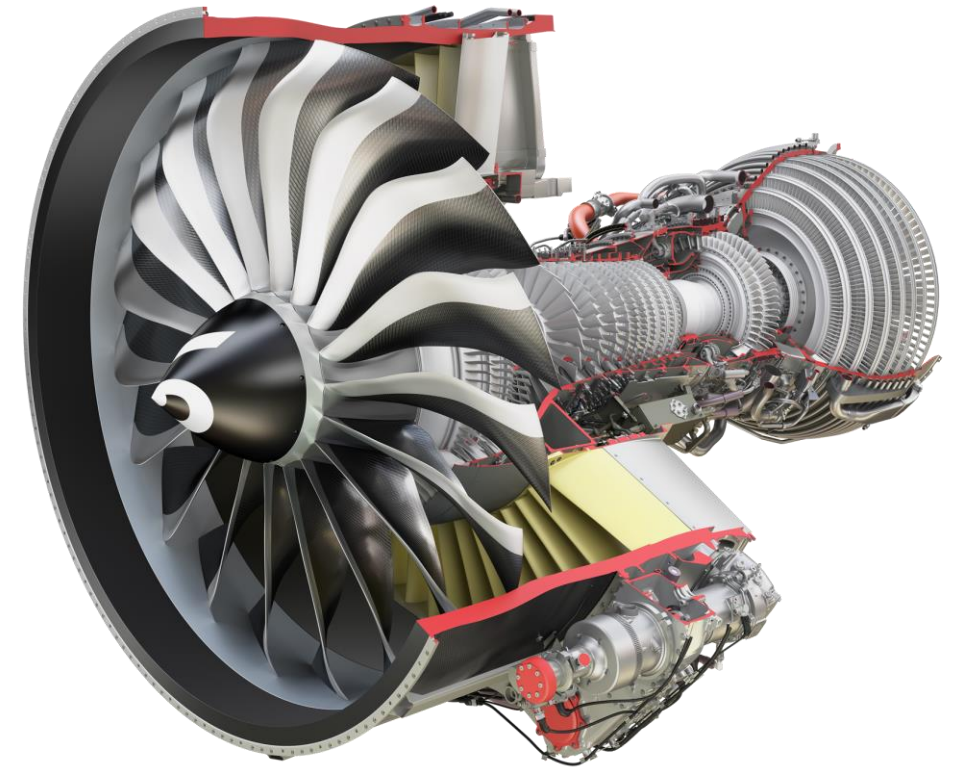
- 30 disks ... all have been removed ... no AOGs/no findings

LEAP-1A HPT Stage 2 Disk

- 74 disks .. 67 have been removed ... no AOGs/no findings

HPT premature shroud coating loss

- Software upgrade introduced that gives up to 40°C additional EGT
- Improved shroud ... introduction began with June aircraft deliveries



... LEAP design is stable and robust

... with a well-trained, global support team



30 specifically-trained LEAP experts that can be deployed where they are needed

250+ fields service engineers + **3** call centers

2,200 inquiries / month

< **Four-hour** turn around on critical cases

96% response to customer commitment

8 quick-turn facilities

< **30-day** average turnaround time, wing-to-wing

... to maintain best-in-class utilization

LEAP by the numbers ...

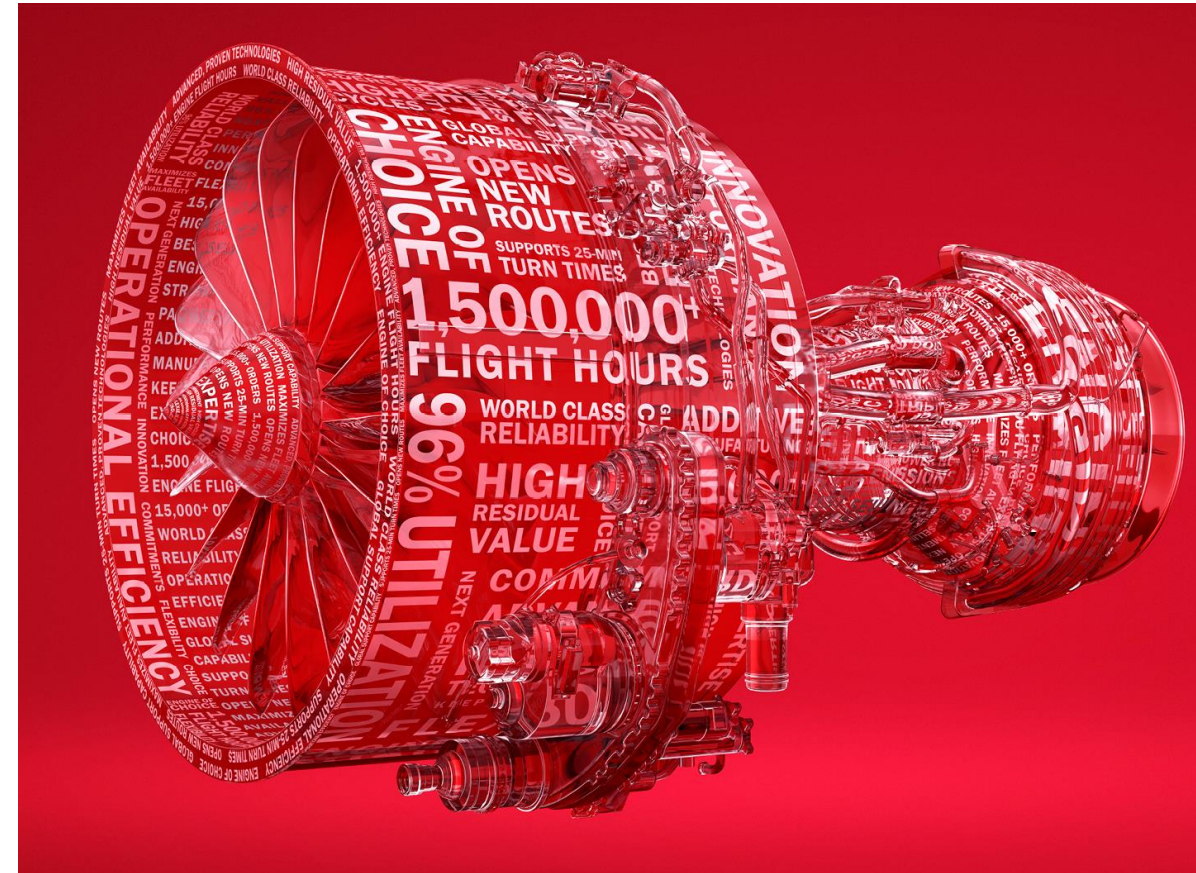
1,000 engines delivered

Powering **75%** of new single-
aisle deliveries

~7-year backlog

1.5+ million engine flight hours

96% utilization ... highest in
this thrust class



LEAP. The clear advantage



Access to photos, releases and this presentation



<https://www.cfmaeroengines.com/farnborough-2018-downloads/>