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Supply Chain Study Highlights

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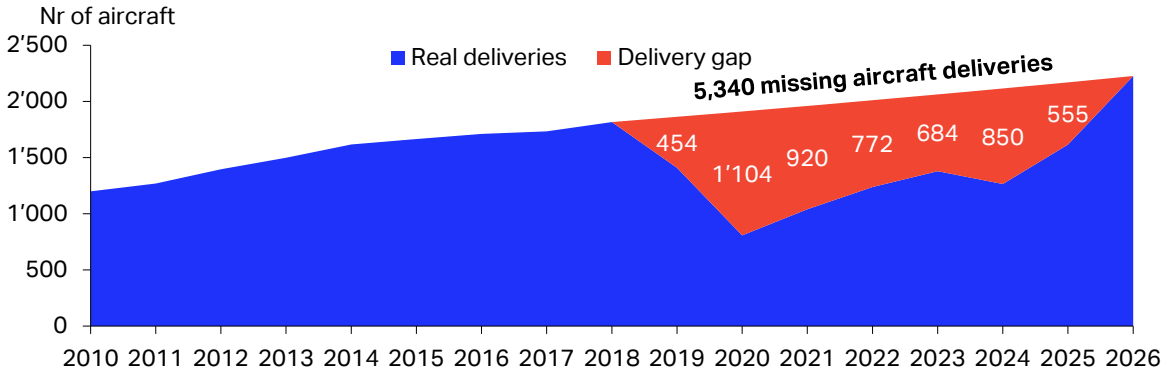
Missing aircraft

Aircraft deliveries, with 2025-2026 forecast, compared with hypothetical pre-pandemic trend



Source: IATA Sustainability and Economics, Cirium Fleet Analyzer.

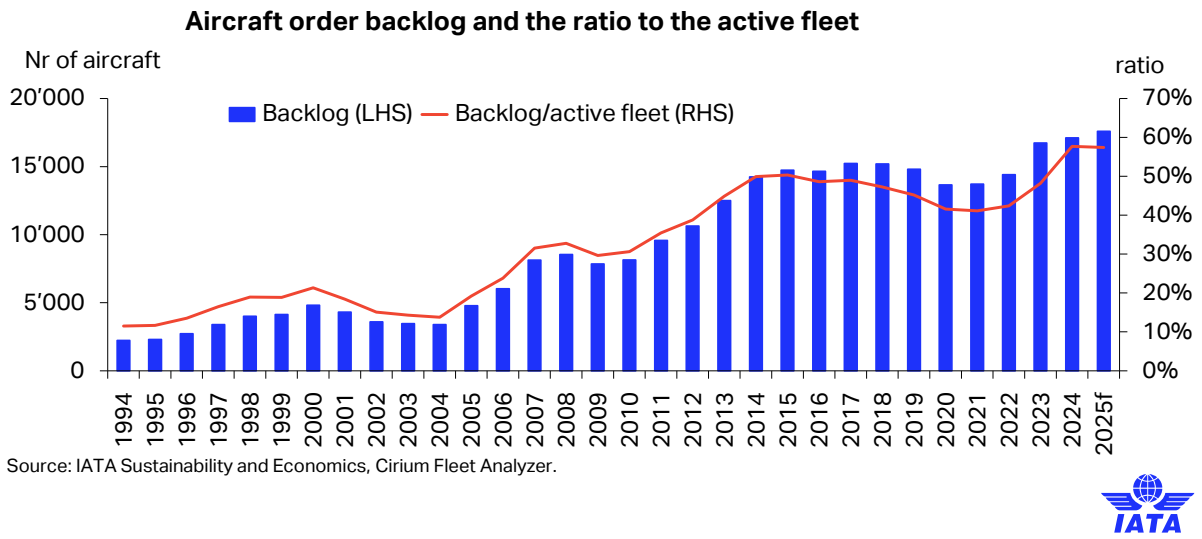
- The roots of the aircraft delivery slowdown that started in 2018 has persisted through multiple waves of supply chain stress and has now become one of the defining structural constraints of the industry. What initially appeared to be a temporary disruption has evolved into a long-lasting capacity shock that is fundamentally reshaping airline operations, fleet planning and financial strategies.

- Compared with the pre-pandemic trend, the market has received roughly 5,340 fewer aircraft, essentially a "missing fleet" representing several years of production.

- Engine availability has emerged as the most critical bottleneck, with a record number of engines undergoing maintenance, which sharply increases the demand for spares and stretching maintenance networks to their limits. At the same time, disruptions in component manufacturing, labour availability and logistics continue to cap production rates, constraining engine output just when the industry needs it most.

- The result is a growing disconnect between airframes and engines. OEMs are increasingly completing aircraft without engines and parking them until powerplants become available. This **inventory of "gliders"** not only delays deliveries but also reinforces the overall fleet shortage. As long as engines remain the critial item, the industry will struggle to restore balance between supply and demand.

Record backlog



Source: IATA Sustainability and Economics, Cirium Fleet Analyzer.

- Although production is gradually recovering, output remains far below historical norms at a time when global demand for aircraft continues to rise. The order backlog has now surpassed 17,000 units, equivalent to almost 60% of the active fleet. Before 2019, this ratio rarely exceeded 40%. In practical terms, the industry is awaiting the replacement of more than half of its existing fleet, a scale of renewal unprecedented in modern aviation.

- Looking ahead, 2026 is expected to bring some relief as supply chain pressures ease and coordination improves across OEMs and their suppliers. Production should accelerate, but even the more optimistic forecasts fall short of matching demand. The backlog is therefore likely to continue expanding, reflecting a structural mismatch between manufacturers' output and airlines' fleet requirements. As he result a genuine rebalancing of supply and demand is unlikely before the early 2030s.

- The shortage is already reshaping fleet strategies. Airlines are holding onto older aircraft well beyond their intended retirement horizons, slowing renewal cycles and affecting fuel burn, maintenance intensity, and progress towards decarbonisation goals. The average fleet age has risen to around 15 years. Meanwhile, the share of aircraft in long-term storage is unusually high, not because carriers wish to park them, but because forced groundings linked to engine availability and reliability issues leave operators uncertain about future supply.

- The scarcity of new aircraft has also transformed secondary markets. Mid-life aircraft values and **lease rates** have surged, reflecting their newfound strategic importance as **stop-gap** capacity. Rather than retiring aircraft into long-term storage or part-out, airlines increasingly treat these assets as critical buffers in a world where fresh deliveries cannot be guaranteed.

5,300+

Delivery shortfalls aircraft

17,000+

The order backlog aircraft
(nearly 12 years of production capacity)

15.1

The average fleet age years
(13.4 years pre-COVID)

5,000+

Aircraft in storage aircraft (highest ever)

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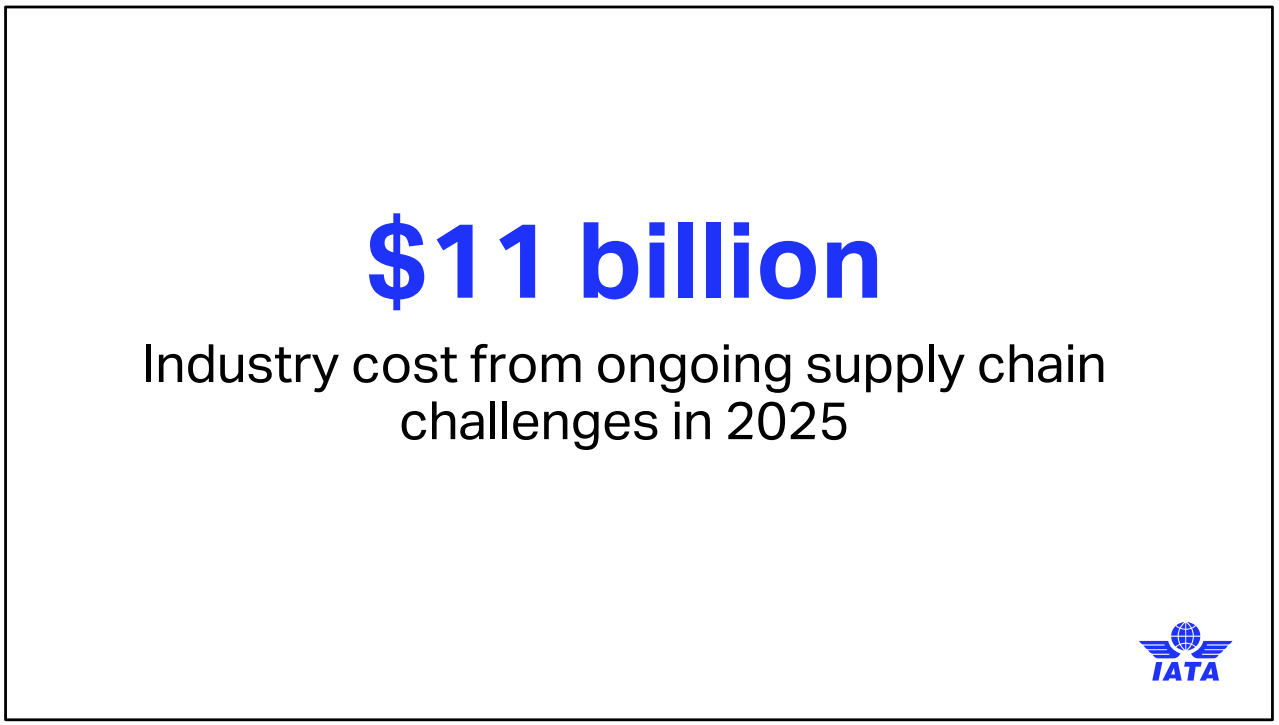
Challenges within the aerospace industry's supply chain are delaying production of new aircraft and parts, resulting in airlines reevaluating their fleet plans and, in many cases, keeping older aircraft flying for extended amounts of time.

The worldwide commercial backlog reached a historic high of more than 17,000 aircraft, a number equal to almost 60% of the active fleet. Historically, this ratio was steady at around 30-40%. This backlog is equivalent to nearly 12 years of production capacity.

Delivery shortfalls now total at least 5,300 aircraft.

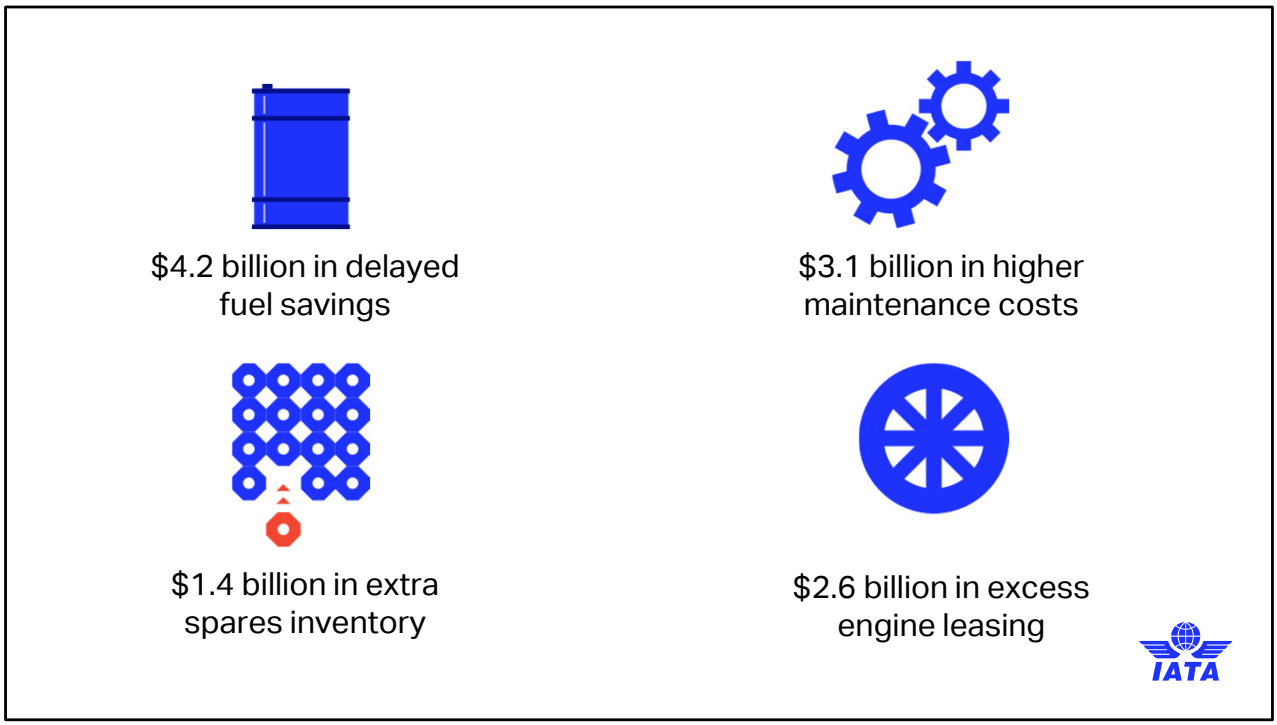
The average fleet age has risen to 15.1 years (12.8 years for aircraft in the passenger fleet, 19.6 years for cargo aircraft, and 14.5 year for the wide-body fleet).

Aircraft in storage still exceed 5,000 aircraft, one of the highest levels in history despite severe shortage of new aircraft.



A recent study by IATA and Oliver Wymann estimated that the cost to the airline industry of supply chain bottlenecks will be more than $11 billion in 2025.

The $11 billion is not a single category it's a combination of multiple pressures caused by supply chain disruption.



Let's now break down the $11 billion to see where these industry-wide costs is coming from.

These aren't abstract numbers they represent real, recurring financial pressures airlines are forced to absorb because of supply chain constraints.

1. **$4.2 billion in delayed fuel savings**

Airlines cannot retire or replace older aircraft as planned.

Newer aircraft are significantly more fuel-efficient, so every year of delay means lost savings.

This is now one of the largest financial penalties of the supply chain crisis.

2. **$3.1 billion in higher maintenance costs**

Older aircraft require more checks, more repairs, and more shop visits.

Parts shortages and longer turnaround times also drive MRO costs up.

Airlines are spending more just to keep aircraft airworthy and in service.

3. **$1.4 billion in extra spares inventory**

Because parts ordering lead times have increased, airlines must hold more inventory to avoid grounding aircraft.

This ties up capital, adds storage requirements, handling, and logistics costs.

4. **$2.6 billion in excess engine leasing**

Engine turnaround times have lengthened dramatically.

Airlines are forced to lease engines as stopgaps — often at premium rates.
This is one of the most visible operational symptoms of supply chain fragility.

Together, these categories demonstrate that the cost is systemic across the entire operation — from fuel and maintenance to inventory and engine management. It reinforces the message that delays in aircraft and spare parts don't just cause inconvenience; they have material financial consequences.

- **Open up** aftermarket best practices
- **Enhance** supply chain visibility
- **Unlock** value from data
- **Expand** repair and parts capacity

There are actions for the aerospace industry to consider:

Open up aftermarket best practices by supporting Maintenance, Repair and Overhaul (MRO) to be less dependent on OEM-driven commercial licensing models, as well as facilitating access to alternative sourcing of materials and services.

Enhance supply chain visibility by creating clearer visibility across all supplier levels to spot risks early, reduce bottlenecks and inefficiencies, and use better data and tools to make the whole chain more resilient and reliable.

Unlock value from data by leveraging predictive maintenance insights, pooling spare parts, and creating shared maintenance data platforms to optimize inventory and reduce downtime.

Expand repair and parts capacity to accelerate repair approvals, support alternative parts and Used Serviceable Material (USM) solutions, and adopt advanced manufacturing to ease bottlenecks.

To enact any of these initiatives, the first and most critical step for commercial aerospace industry participants to take is to develop a strategic approach among all stakeholders in

the supply chain. The multifacited challenges facing the industry call for collaboration to progress in the goal of better meeting aircraft production and maintenance demand.

Thank you