
IATA
4th MRO SMARTHUB FORUM
OCTOBER 14, 2025
LONDON, UNITED KINGDOM
Opremic
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Why are MRO unit costs soaring?

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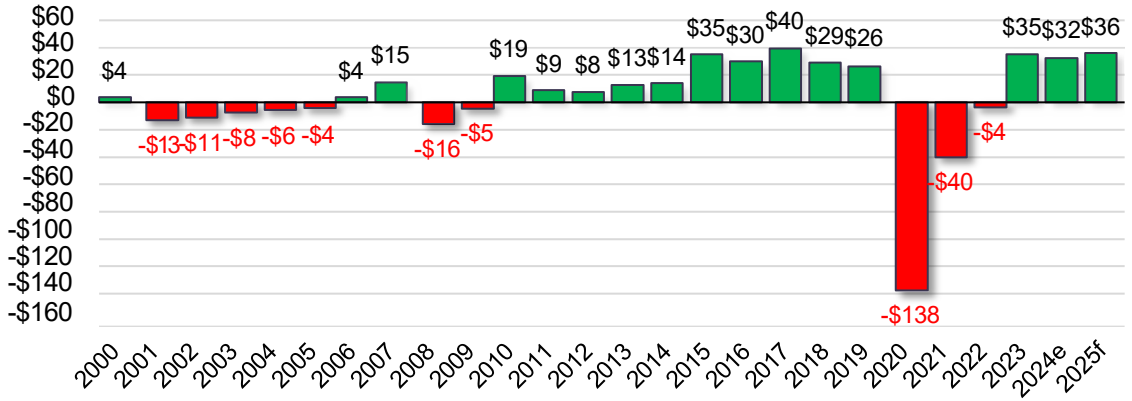
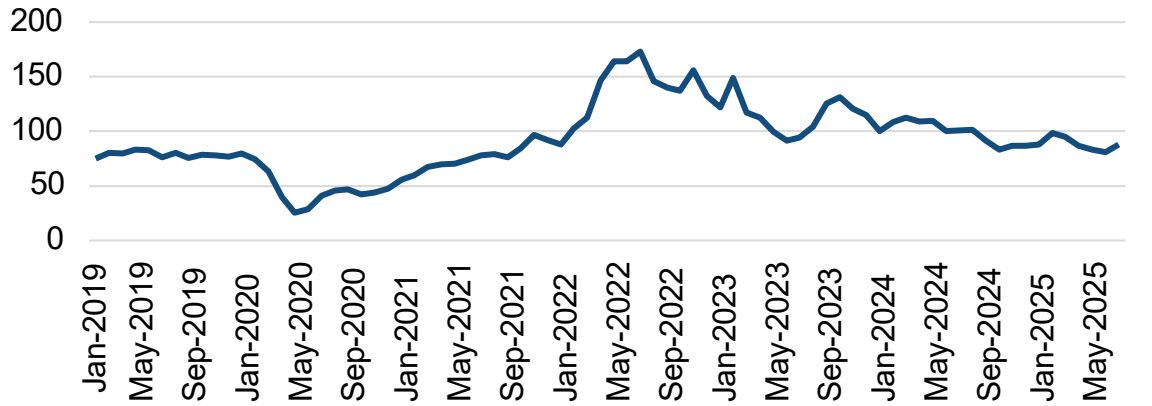
Airline financials stabilize, but capacity constraints persist

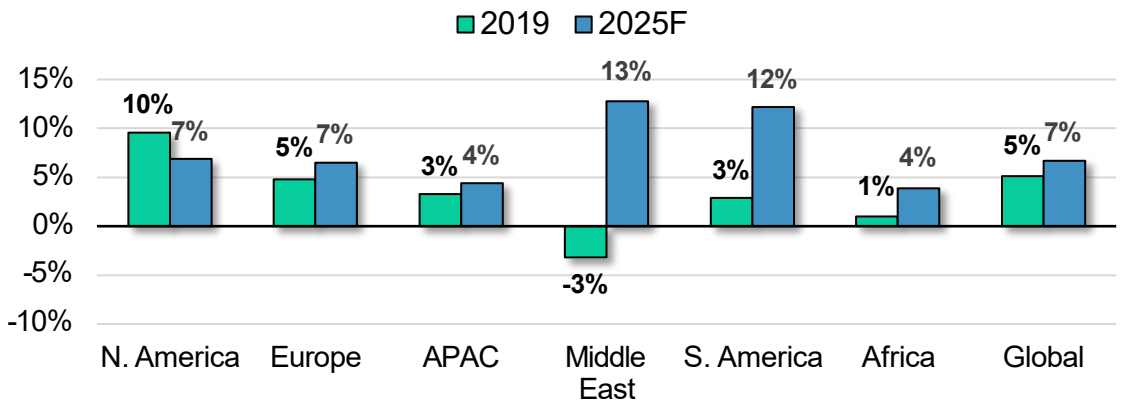
Global Airline Net Profit Results ($B)



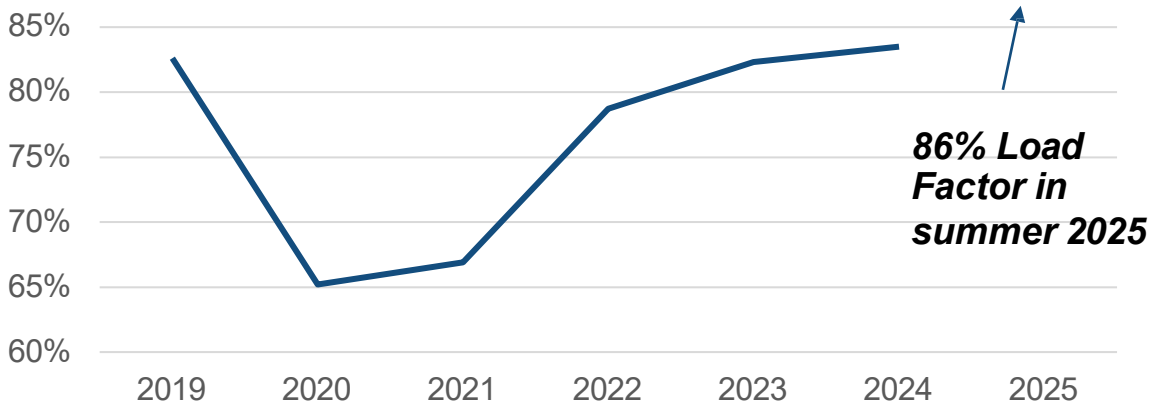
Historical Jet-A Spot Prices ($USD per barrel)



2019 vs. 2025F Airline Operating Margin, by Region



Load Factors



Sources: IATA, EIA, Secondary Research

MRO will grow by 21% over the next decade – half of growth will come from Middle East / Indian Subcontinent / South East Asia

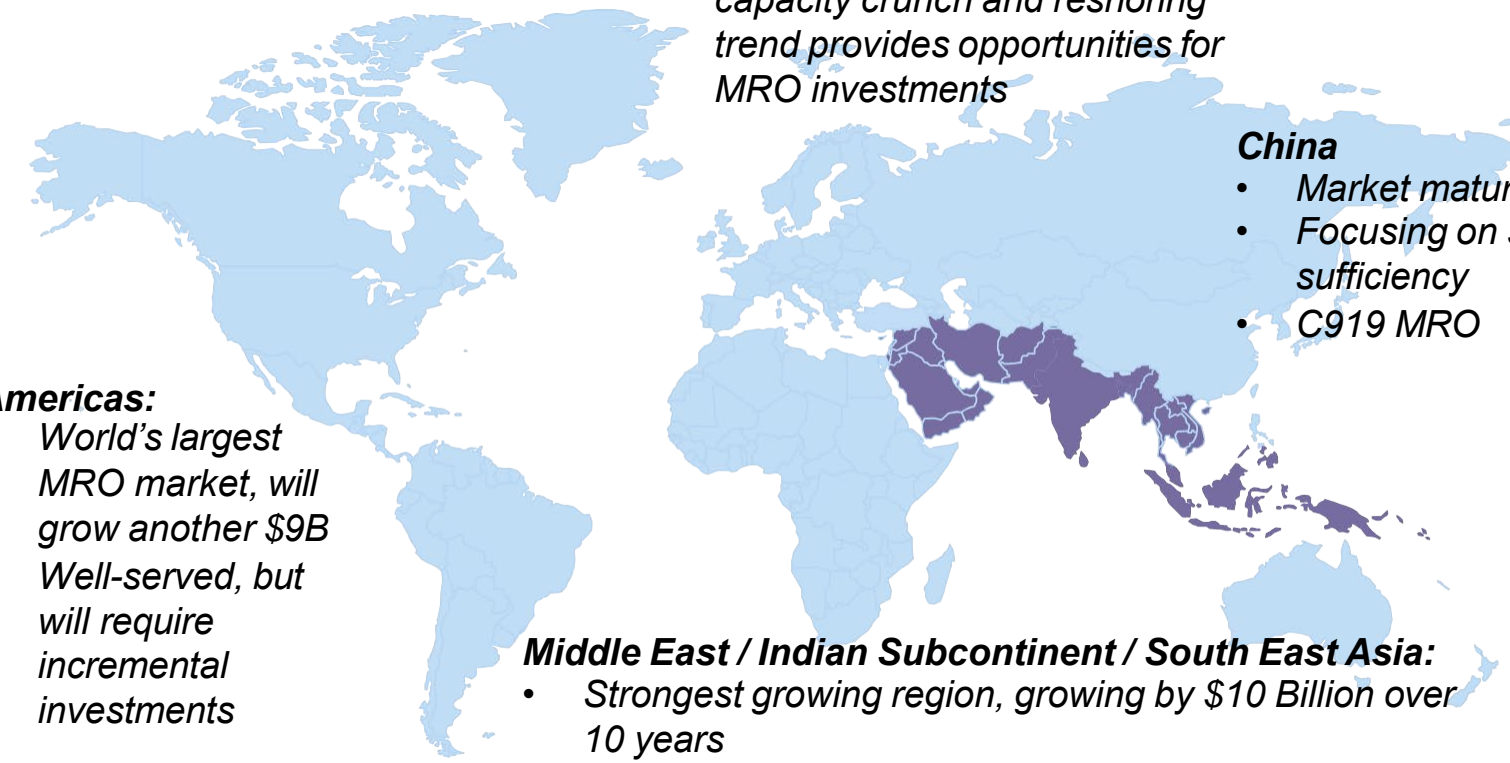
2025-2035 Air Transport MRO Outlook ($B)

Global MRO Spend*

Europe:
- *Aviation growth slowing, but capacity crunch and reshoring trend provides opportunities for MRO investments*

China
- *Market maturing*
- *Focusing on self-sufficiency*
- *C919 MRO*

Americas:
- *World's largest MRO market, will grow another $9B*
- *Well-served, but will require incremental investments*



Middle East / Indian Subcontinent / South East Asia:
- *Strongest growing region, growing by $10 Billion over 10 years*
- *Significant investments into manufacturing and MRO*

Region	2025*	2035*
Africa	$3.8	$5.1
Asia Pacific**	$22.4	$28.2
China	$20.1	$20.4
India	$3.5	$7.3
Europe	$26.8	$28.1
Latin America	$ 6.8	$8.8
Middle East	$13.7	$16.8
North America	$30.5	$39.7
Total	**$127.4**	**$154.4**

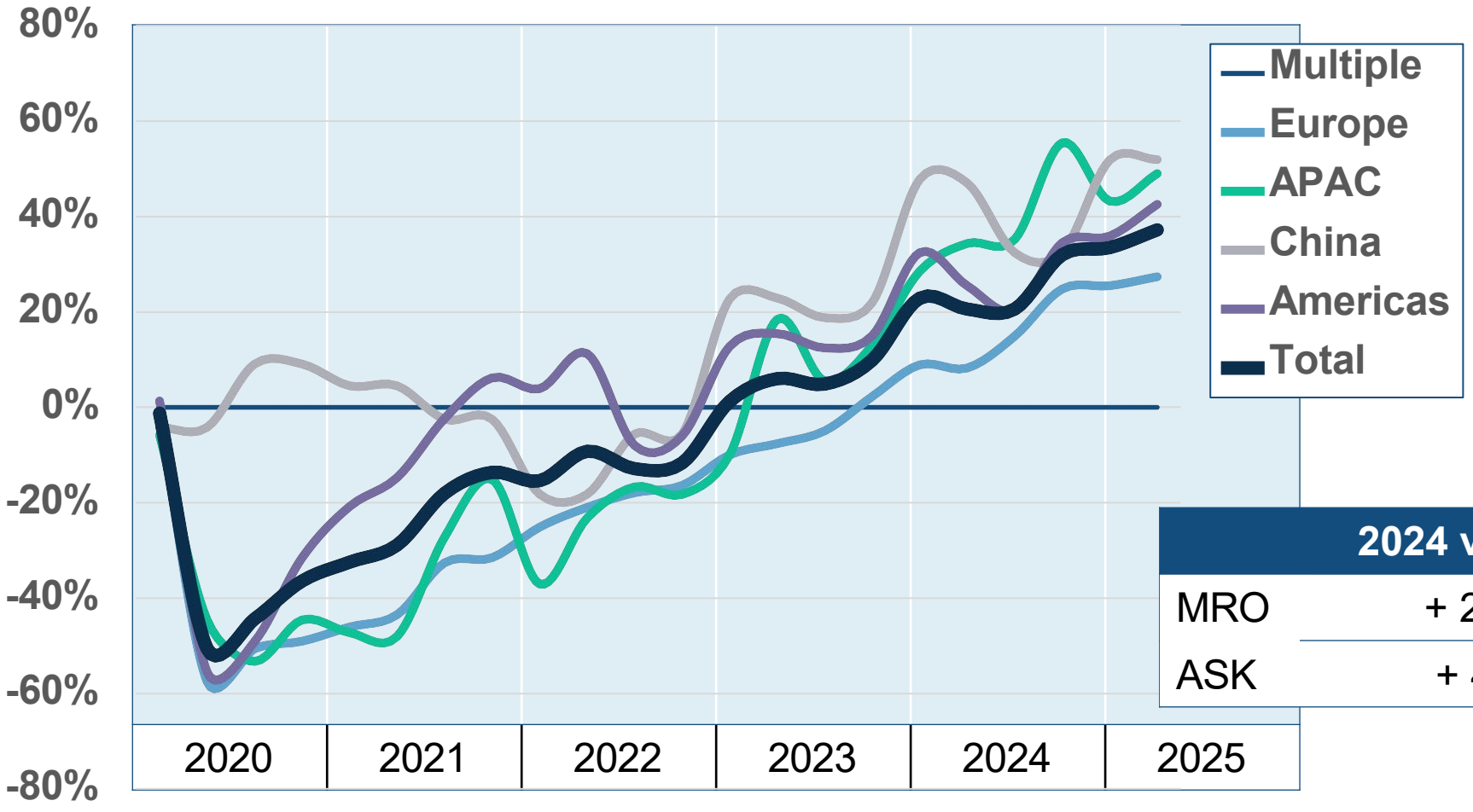
Key Issues determining future MRO Landscape
- › *Infrastructure investments*
- › *Supply chain challenges*
- › *Labor pipelines*
- › *Process efficiencies / Digitalization*
- › *Strong Price/Cost increase*

Source: Alton, AeroDynamic Advisory

* -2024 Constant US$B; ** ex China/India

MRO cost increases have outpaced ASK since 2019

2020-2025 Airline MRO Costs Versus 2019



- Materials
- Labor
- Increasing buffer cost
- Ageing fleet
- Lack of alternatives
- Supply chain bullwhip effect
- Supplier concentration

	2024 vs 2019	2025E vs 2019
MRO	+ 24%	+40%
ASK	+ 4%	+10%

Source: Airline financial reports, IATA, AeroDynamic Advisory analysis

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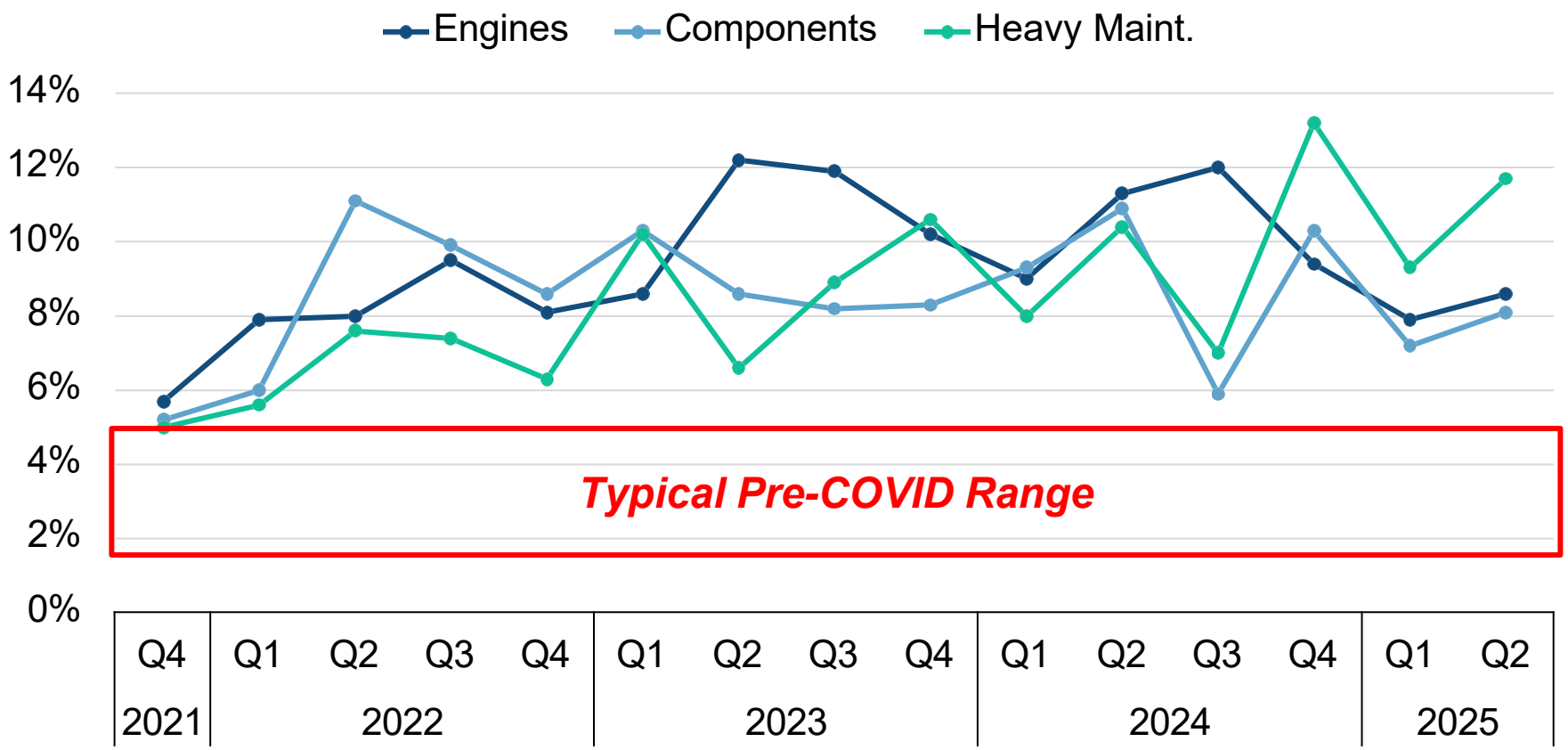
OEM part price escalations remain higher than pre-COVID levels

YoY Commercial Aftermarket Material Escalations

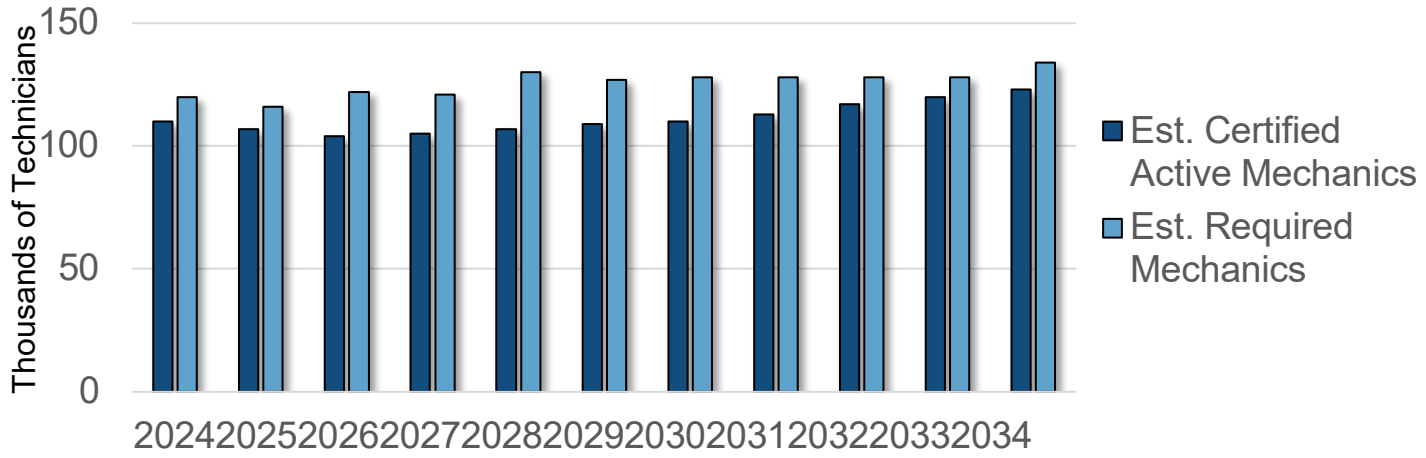


- Rising cost structure
- OEM aftermarket reliance
- Escalation clauses & indexing
- Post-COVID supply chain rebalancing
- Strategic- and investor pressure
- Limited customer bargaining power

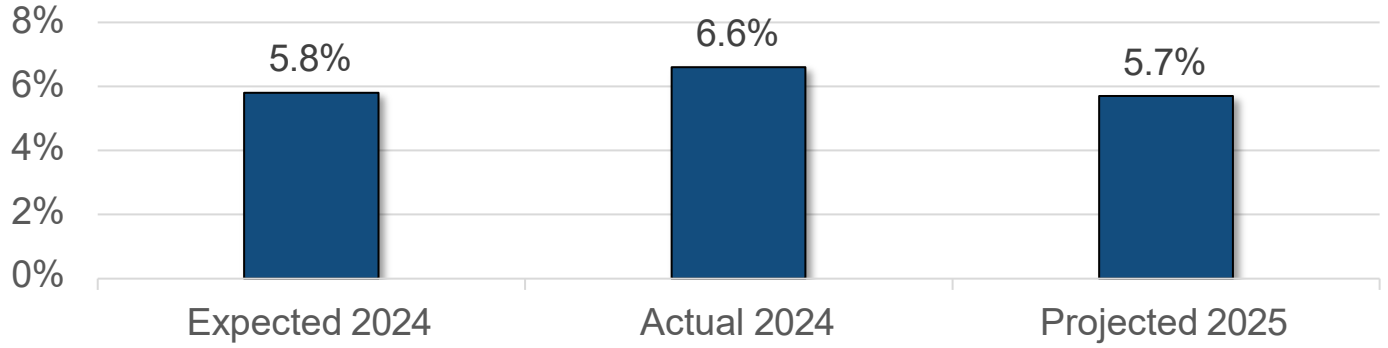
Source: RBC, Secondary Research

Tech talent shortage drives labor-rate inflation – attraction & retention critical

Supply vs. Demand for Certified Commercial Aviation Mechanics in North America



Surveyed Worldwide MRO Labor Rate Increases



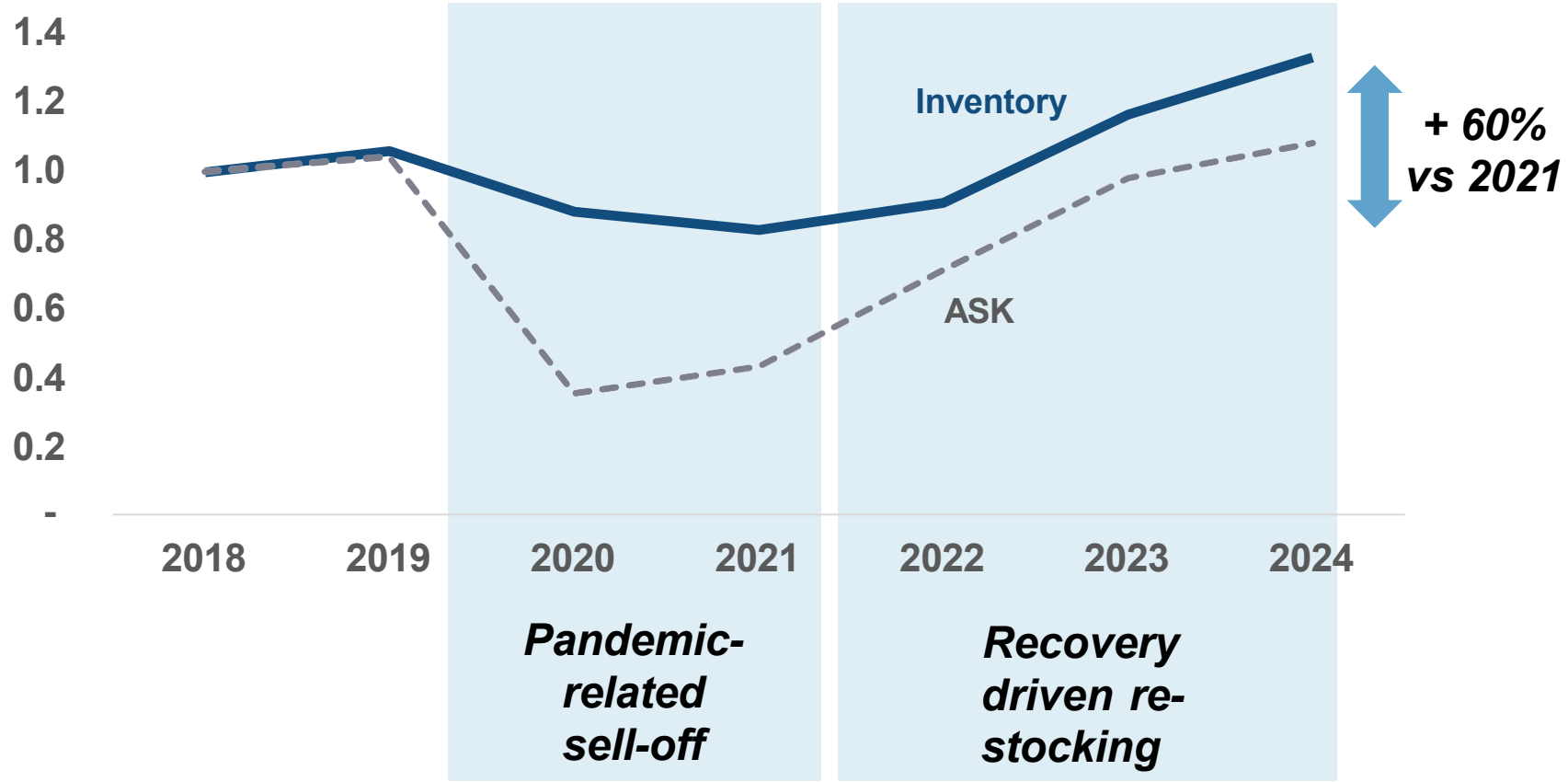
- MRO labor attrition has stabilized versus 2021-2023
- Talent pipelines expanding to aviation maintenance technical schools, other repair stations, and contractor agencies.
- North America: retirements expected to outpace newly certified mechanics until 2026/2027 but not expected to be fully closed in the next decade. Similar sentiment reflected globally as well.
- India has growing training capacity via OEMs & MROs in the country, but this needs to serve growing MRO demand plus serving global needs.

Talent pipelines broadly improving, but structurally short in the medium/long-term

Source: Oliver Wyman 2025 MRO Survey, Aviation Technician Education Council 2024 Pipeline Report, Market Interviews

Airline inventory levels are up 60 percent versus 2021

2018-2024 Air Transport Aftermarket Inventory Levels Versus ASK (Indexed)



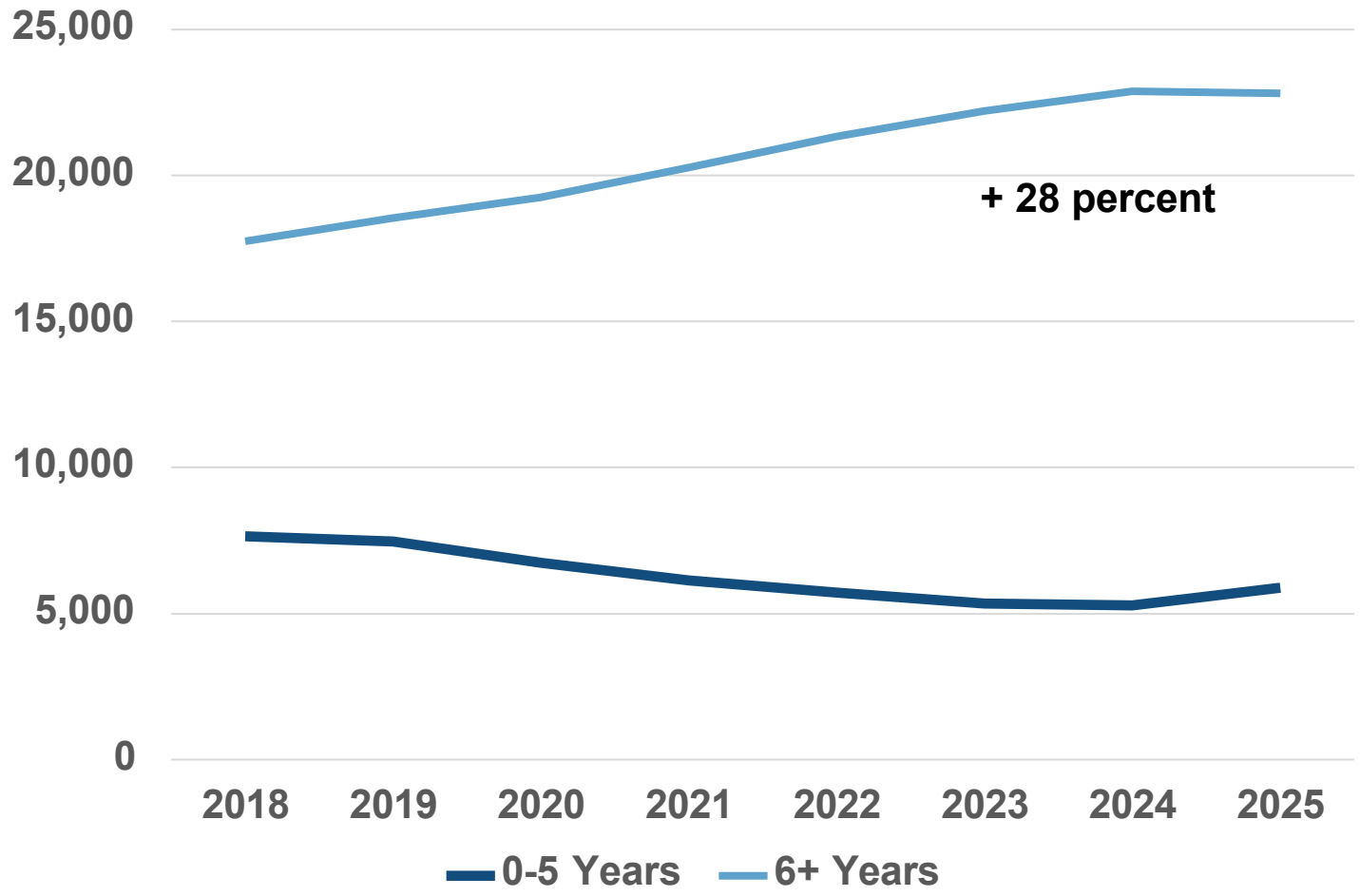
- Industry adapting to new situation with longer TAT, longer lead times, greater MRO demand
- Inventory accumulation: $19 Billion, or $6 Billion per year
- Supply chain's bull-whip effect for suppliers upstream:
  - Greater drops in down times
  - Huge spike in demand when market recovers

Recent surveys indicate inventory will continue to build, but at slower rate

Source: Alton, Airline financial reports, AeroDynamic Advisory analysis

The out of warranty fleet is 28 percent larger today compared to 2018

2018-2025 Aircraft Fleet, by Age



- Warranties are typically 5 years for aircraft components and systems
- OEMs earn aftermarket profits when the warranty expires
- Continued constraints on deliveries likely to add further upward pressure on fleet age

Source: Jefferies, AeroDynamic Advisoryy

Capacity, fleet age and USM availability tied to delivery rates, but fundamental bottlenecks remain

Status of Key Supply Chains – Q2 2025

Category	Current Status	Comments
Engine OEM Assembly		• CFM claims to support rates 65 / 57 for Airbus/Boeing • Forging is a critical bottleneck and leading indicator • RR continues having raw material & operational issues • **Wild cards:** rare earth export controls for magnets / hot applications; tariffs (especially on EU); availability of Russian titanium
Module Assembly		
Machining / Fabrication		
Forging		
Investment Casting		
Raw Materials		
Aerostructures		• Aircraft OEMs insourcing Spirit; will ultimately come under control • China/Japan/Taiwan input on 787 – scalable with current tariffs? • Fragmented subcomponent supply especially for Airbus; sensitive to disruptions • Forging capacity needs to be added to reach significantly higher single aisle rates • **Wild card**: tariffs & geopolitics can further disrupt aluminum, steel, titanium / forgings
Tier 1 / complex assembly		
Subcomponent manufacture		
Raw materials		
Aircraft Systems		• Tier 1 and Tier 2 doing mostly fine, with sporadic issues • Main challenge is to keep up with aftermarket demand • Some sub-tier suppliers may have difficulties scaling production • **Wild card**: export controls on rare earth minerals can disrupt supply chain of avionics and certain systems
Assembly		
Machining / Fabrication		
Raw materials		
Cabin Interiors		• Cabin interiors bottlenecks are primarily driven by increasing customization from airlines and low profit margins for assembly of cabin interiors. • Within seating, first/business class seat certification is a key constraint • Seating capacity may not exist to support higher rates later this decade • Key interiors suppliers are fully booked and unwilling to invest in greater plant capacity due to fears of market peaking
Seats		
IFE/ Connectivity		
Other systems		
Raw materials		

Source: AeroDynamic Advisory

Able to support rates | Sporadic issues expected | Significant issues with achieving rates | Unclear path to achieving rate

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USM remains supply constrained but there are signs of rising uptake of PMA and DER

USM

- Supply constrained from low feedstock – currently ~6% of material demand, compared to 10-15% pre-COVID
- Global airline interest increasing

Supply Constrained

PMA

- Rising uptake (and considerations of uptake):
  - Cabin interiors (all regions)
  - Component piece parts
  - Mature engines
- Despite rising uptake, PMA share hasn't yet had any huge departure from the typical 2% of mtrl spend

Slightly Rising

DER Repairs

- Adoption likely around 5-10% of material spend
- Simpler approval process than PMA
- Anecdotal evidence of greater use

Slightly Rising

Source. AeroDynamic Advisory

Airline MRO costs are likely to continue to rise in the short-to-medium term

Airline Technical Costs

Typical costs associated with technical expenses

Operational (Activity-Based) Costs

- Line / base maintenance labor
- Consumables & rotables
- Engine/APU MRO
- 3rd party MRO contracts
- Outstation tech support

Buffer (Inventory, Spare Capacity, Redundancy)

- Spare parts inventory
- Spare aircraft
- Redundant infrastructure
- Pooling agreements

Risk (Contingent/Disruption Costs)

- Delays/cancellations
- AOG recovery
- Opportunity cost of downtime
- Residual value risk

Compliance (Mandated or Societal)

- AD
- SMS & quality assurance
- Environmental mandates (emissions reporting, SAF, offsets)
- Health & safety standards
- Digital records
- Cybersecurity
- Supply Chain & materials compliance

Likely continued rise for a while

Increasing burden?

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Thank you!

Any questions?

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