EXECUTIVE RESEARCH REPORT

Global Aerospace Industry Report

Commercial aviation, defense aerospace, space systems, MRO, supply chains, decarbonization and strategic outlook through 2030

New York General Group

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Executive summary

Aerospace demand is broad-based, but the industry is constrained by certified capacity, quality systems, propulsion availability and skilled labor.

43,420

Airbus 20-year new passenger and freighter aircraft demand, 2025-2044 [1]

$613B

Global space economy in 2024, a record level [4]

$2.887T

World military expenditure in 2025 [11]

Central finding: aerospace is not primarily a demand-constrained sector in 2026. Its limiting variables are propulsion, supplier health, production quality, certification speed, defense industrial surge capacity and decarbonization scale.

The global aerospace industry in 2026 is best understood as a high-demand, capacity-constrained strategic system. Commercial aviation, defense aerospace and space infrastructure are all expanding, but the sector's effective growth rate is governed by engines, certified suppliers, quality systems, labor, regulatory approval and capital discipline rather than by customer demand alone.

Commercial aircraft demand is structurally large. Airbus projects demand for 43,420 new passenger and freighter aircraft between 2025 and 2044 [1]. Boeing projects passenger traffic to grow at 4.2% annually and the global commercial fleet to exceed 49,600 aircraft by 2044 [2]. These forecasts imply a long replacement cycle, especially for less efficient aircraft, and continued growth in Asia, India, the Middle East and other underserved markets.

Airline profitability has recovered but remains thin. IATA forecast 2025 airline net profit of $36.0 billion and a 3.7% net margin [3]. That margin is historically respectable for the airline sector but low relative to global industry averages. Aircraft delays, engine removals and higher maintenance burdens can therefore materially affect airline earnings even when traffic is strong.

The defense aerospace cycle has strengthened. SIPRI reported world military expenditure of $2.887 trillion in 2025, with particularly strong growth in Europe and Asia/Oceania [11]. The demand mix is shifting toward air defense, missiles, counter-drone systems, intelligence/surveillance/reconnaissance, electronic warfare, military space and resilient command-and-control.

Space is becoming both a commercial service layer and a strategic-security layer. The global space economy reached $613 billion in 2024 [4]. Reusable launch, low-earth-orbit constellations, satellite broadband, earth observation and space-based defense capabilities are transforming space from a government-centric domain into a commercial infrastructure market with national-security consequences.

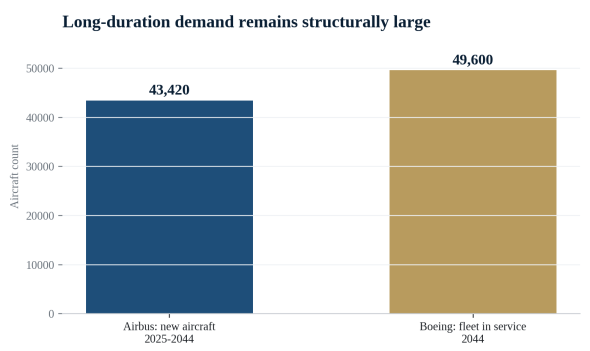

Exhibit 1 - Commercial-aircraft demand remains structurally large. Sources: Airbus and Boeing [1][2].

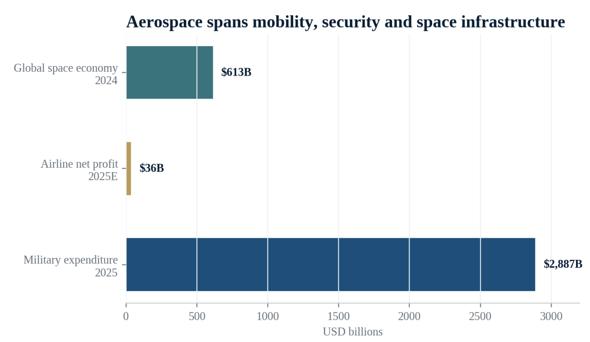

Exhibit 2 - Aerospace links global mobility, space infrastructure and defense demand. Sources: IATA, Space Foundation and SIPRI [3][4][11].

SECTION 02

Industry architecture and value chain

The industry is a highly certified ecosystem of airframers, engine makers, systems suppliers, MRO providers, defense primes, space companies and specialized tier suppliers.

Materials
Titanium, aluminum, nickel alloys, composites, ceramics.

Precision processes
Forging, casting, machining, coating, heat treatment.

Systems
Engines, avionics, flight controls, landing gear, cabins.

Platforms
Aircraft, missiles, satellites, spacecraft, launch vehicles.

Services
MRO, spares, data, training, sustainment, upgrades.

Layer	Representative activities	Value logic	Critical constraint
OEMs and primes	Aircraft, spacecraft, missiles, defense systems, integration	Program scale, certification, customer access	Quality execution; program delays
Propulsion	Turbofans, turboprops, APUs, rocket engines	Installed base, shop visits, spare parts	Durability, hot-section parts, shop capacity
Systems and avionics	Flight controls, landing gear, sensors, cabins, power	Certified content per platform; retrofit	Electronics, software assurance, supplier depth
Tier suppliers	Structures, castings, forgings, composites, interiors	Precision manufacturing and qualification	Working capital and skilled labor
Aftermarket / MRO	Engine overhaul, component repair, line maintenance	Fleet utilization and fleet age	Technicians, parts availability, turnaround time
Space services	Launch, satellite operations, ground terminals, data	Recurring connectivity and data revenue	Capital intensity, orbital safety, spectrum

Aerospace differs from most industrial sectors because certification and traceability create slow supplier substitution. A qualified component is not simply a part; it is a controlled design, process, material pedigree, inspection record and regulatory approval chain. This gives incumbents defensibility but also turns small bottlenecks into system-level constraints.

The economic center of gravity is shifting toward installed-base monetization. Engines, avionics, mission systems, software and MRO can create recurring revenue after initial delivery. For many companies, the highest-quality revenue is not in the headline equipment sale but in the decades of certified service that follow.

SECTION 03

Market snapshot: four demand engines

The aerospace cycle is supported by commercial fleet growth, aftermarket intensity, defense spending and commercial space activity.

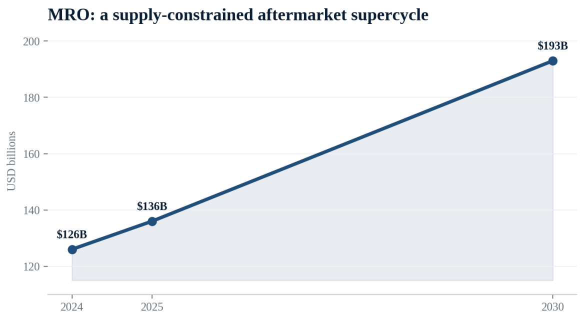

Exhibit 3 - MRO demand rises as aircraft remain in service longer and utilization recovers [10].

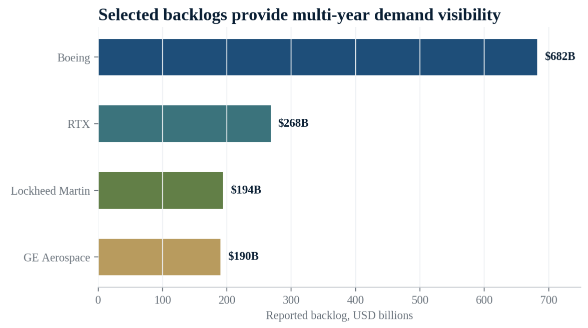

Exhibit 4 - Selected company backlogs show multi-year demand visibility [7][8][12][13].

Segment	2026 position	Attractive profit pools	What to watch
Commercial aircraft	Orderbooks are deep; deliveries remain constrained.	Narrowbody production, cabin retrofit, freighter conversion, leasing services.	Engine availability, FAA/EASA certification, Boeing production recovery.
Engines	Most strategically important bottleneck and one of the best aftermarket models.	Spare parts, long-term service agreements, shop visits, hot-section repairs.	GTF inspections, LEAP ramp, widebody utilization.
MRO	Demand grows as aircraft age and utilization rises.	Engine MRO, component repair, modification programs.	Technician shortages, part scarcity, shop capacity.
Defense aerospace	Demand strengthened by geopolitical risk and stockpile rebuild.	Air defense, missiles, ISR, unmanned systems, space security.	Budget politics, export controls, surge capacity.
Space	Commercialization and national security are converging.	LEO communications, launch, earth observation, data analytics.	Debris, spectrum, capital discipline, security threats.
Decarbonization	Strategic priority but supply remains far below ambition.	SAF, efficiency retrofits, operational analytics, emissions reporting.	Feedstock constraints, cost premiums, mandates.

SECTION 04

Commercial aircraft market

Large-aircraft demand is concentrated in narrowbody replacement and growth, with widebody demand supported by long-haul networks and cargo.

Why narrowbodies matter.
Narrowbody aircraft drive the largest volume of deliveries and therefore influence engines, landing gear, cabins, avionics, tires, brakes, maintenance labor and airport operations.

The commercial aircraft market is a duopoly at the large-aircraft level, but it is not a simple duopoly in economic terms. Airbus and Boeing integrate platforms, certify aircraft, manage airlines and lessors as customers, and coordinate thousands of suppliers. The largest profit pools extend beyond airframe assembly into propulsion, systems, spares, modifications, digital services and MRO.

The narrowbody segment is the core of the global fleet. A320neo-family and 737 MAX aircraft serve domestic and short-to-medium-haul international routes, the heartland of low-cost carriers and high-frequency network operations. Narrowbody growth is driven by replacement, network densification, airport development and rising middle-class mobility.

The widebody market is smaller and more cyclical, but strategically important. A350, 787 and 777X aircraft enable long-haul hub-to-hub connectivity, premium international traffic and belly cargo. Middle Eastern carriers and Asian network carriers remain key demand centers, while fleet renewal in North America and Europe supports replacement demand.

Boeing's 2025 backlog of $682 billion and Airbus's 2025 delivery performance underscore both demand visibility and execution pressure [6][7]. Airbus has held delivery leadership, while Boeing's recovery remains tied to production quality, supplier reintegration and certification milestones. For airlines, the result is not an abstract OEM issue: delivery delays alter capacity plans, route economics and maintenance costs.

Aircraft category	Demand drivers	Competitive dynamics	Strategic implication
Narrowbody	Replacement, LCC growth, domestic and regional networks, India and Southeast Asia.	Airbus A320neo family and Boeing 737 MAX family dominate; COMAC is emerging in China.	Core production-rate battleground and largest engine aftermarket opportunity.
Widebody	Long-haul recovery, premium travel, Middle East hubs, cargo belly capacity.	A350 and 787 are central; 777X remains strategically important.	Lower volume but high value per aircraft and engine.
Regional / crossover	Connectivity in lower-density markets, pilot scope clauses, regional networks.	Embraer remains central; turboprop and regional jet economics are route-specific.	Selective growth; vulnerable to pilot and cost constraints.
Freighter	E-commerce, express logistics, high-value supply chains.	New-build and conversion markets coexist.	Cyclical but strategically important for cargo networks.

SECTION 05

Engines and propulsion

Propulsion is the decisive bottleneck and one of the most attractive long-cycle profit pools.

Engines are the most strategically important constraint in commercial aerospace. A modern turbofan is a thermodynamic, materials and manufacturing system operating under extreme heat, pressure and rotational load. It is also a long-duration economic asset: the initial sale matters, but lifetime shop visits, spare parts and service agreements often determine the real value pool.

GE Aerospace, Safran, Pratt & Whitney and Rolls-Royce dominate large commercial propulsion. GE Aerospace reported backlog of roughly $190 billion, supported by robust services and engine demand [8]. Safran's strong 2025 performance similarly reflects exposure to the LEAP engine, equipment, interiors and aftermarket activity [9].

The most important issue is not whether airlines want new engines; they do. It is whether the industry can supply engines, repair them, manage durability findings and provide parts quickly enough. Engine removals can ground aircraft, raise lease demand for spare engines and push airlines toward older aircraft, reinforcing the MRO supercycle.

Engine arena	Current strategic position	Value pool	Watch item
LEAP	Central to A320neo-family and 737 MAX economics through CFM.	Installed base, spares, shop visits, service agreements.	Ramp execution, durability, spare-parts availability.
GTF	Geared architecture with strong efficiency logic but inspection challenges.	Aftermarket recovery and long-term installed base.	Fleet removals, airline compensation, shop capacity.
Large turbofans	Linked to widebody utilization and long-haul recovery.	High-value shop visits and parts.	Widebody demand cycle and engine time-on-wing.
Future propulsion	Open-rotor, hybrid-electric, hydrogen and advanced materials.	Long-term technology options.	Certification, infrastructure and energy density.

SECTION 06

MRO and aftermarket services

Maintenance is becoming a supercycle because aircraft are flying more, aging longer and waiting for parts and engines.

MRO is one of the most attractive sectors in aerospace because it follows utilization and safety requirements. Aircraft that fly must be maintained. Airlines can defer discretionary spending, but they cannot defer required inspections or certified engine work. Oliver Wyman estimates global MRO demand reached $136 billion in 2025, up from $126 billion in 2024, and will approach $193 billion by 2030 [10].

Several forces are reinforcing MRO demand: new aircraft delivery delays, older aircraft staying in service, higher utilization, engine durability challenges, constrained parts supply and cabin-retrofit needs. These dynamics create a maintenance supercycle, especially in engine MRO and component repair.

MRO capacity is constrained by technicians, tooling, spare parts, approvals and shop capacity. Engine shops require specialized fixtures, trained mechanics and access to proprietary parts. Component repair similarly depends on certification and traceability. The companies with labor, parts access and turnaround performance can command premium economics.

ENGINE MRO

Highest-value maintenance

Hot-section work, LLPs, modules and proprietary parts create high technical barriers.

COMPONENT REPAIR

Certified scarcity

Traceability and approvals make repair capacity valuable when supply is tight.

CABIN & RETROFIT

Revenue enhancement

Premium cabins, connectivity and interiors help airlines monetize older fleets.

SECTION 07

Defense aerospace

Security demand is shifting from platforms alone to layered defense, missiles, sensors, unmanned systems and space-enabled command networks.

Defense aerospace has moved from a post-Cold-War efficiency mindset toward readiness, deterrence and industrial-base resilience. The Ukraine war, missile and drone attacks in the Middle East, and Indo-Pacific tensions have demonstrated that munitions, air defense, sensors, communications and logistics depth are strategic assets rather than merely procurement line items.

The highest-demand categories include air and missile defense, long-range precision fires, counter-drone systems, ISR, electronic warfare, secure communications, military satellites, resilient PNT and command-and-control software. Lockheed Martin and RTX reported very large backlogs in 2025, reflecting multi-year demand visibility in defense and aerospace systems [12][13].

The constraint is surge capacity. Missiles require solid rocket motors, energetic materials, guidance systems, sensors, electronics and test infrastructure. Air-defense systems require radars, launchers, command networks and interceptors. These cannot be produced at automotive-style speed. Industrial policy and long-term contracting are therefore central to defense aerospace strategy.

Demand area	Growth logic	Industrial constraint
Air and missile defense	Missile and drone threats require layered protection.	Interceptors, radars, launchers, battle-management software.
Precision fires	Stockpile depletion and deterrence requirements.	Rocket motors, seekers, energetics, test ranges.
Unmanned systems	Lower-cost mass and operational persistence.	Autonomy, payloads, electronic warfare resilience.
ISR and electronic warfare	Contested environments require sensing and denial.	Semiconductors, software, spectrum management.
Military space	Communications, surveillance, PNT and missile warning.	Launch access, hardened satellites, ground resilience.

SECTION 08

Space economy and commercial space

Space is becoming a commercial infrastructure layer and a contested strategic domain.

The space economy is moving from bespoke government programs toward industrialized commercial infrastructure. Reusable launch and standardized small satellites have changed the cost curve. Low-earth-orbit constellations have made satellite broadband, earth observation and tactical communications central to both commercial and defense users.

Space Foundation reported a record $613 billion global space economy in 2024 [4]. The commercial sector drove much of this expansion, but government and defense demand remain essential. The boundary between civil, commercial and military space is increasingly blurred: the same communications, imaging and navigation layers support markets, governments and armed forces.

The risks are also rising. LEO congestion, space debris, spectrum coordination, cyberattacks, jamming and anti-satellite threats complicate the economics of space. The winners will combine launch economics, satellite manufacturing scale, ground-network integration, regulatory competence and data/service monetization.

Commercial sector share of 2024 space-economy growth

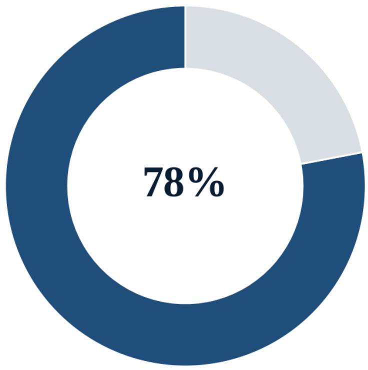

Exhibit 5 - Commercial activity is central to space-economy growth [4].

Space market	Commercial use case	Defense / public use case	Key risk
Launch	Satellite deployment, rideshare, constellation replenishment.	National security launch, responsive launch.	Reliability, cadence, range and regulatory limits.
LEO broadband	Rural connectivity, maritime, aviation, enterprise.	Tactical communications, redundancy.	Capital intensity, spectrum, terminal economics.
Earth observation	Agriculture, insurance, climate, commodities, infrastructure.	ISR, maritime domain awareness, disaster response.	Data monetization and privacy/security.
Space situational awareness	Collision avoidance, fleet operations.	Tracking, attribution, counterspace awareness.	Data sharing and governance.

SECTION 09

Regional dynamics

Regional growth differs by traffic potential, industrial base, security posture and policy environment.

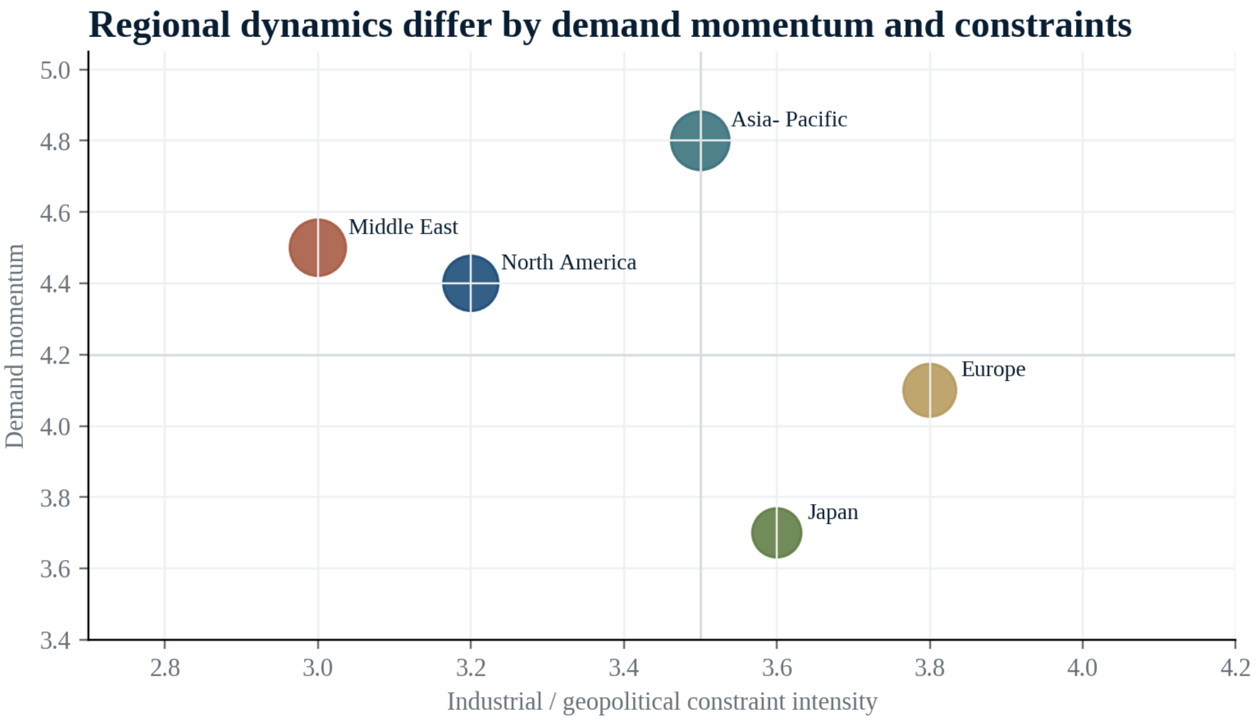

Exhibit 6 - Illustrative demand and constraint positioning by region.

Region	Demand thesis	Strategic opportunities	Principal risks
North America	Largest integrated base across civil aerospace, defense and commercial space.	Aftermarket, propulsion, defense electronics, reusable launch, software-defined systems.	Quality recovery, supplier fragility, labor cost, regulatory scrutiny.
Europe	Airbus-centered civil aerospace and rising defense budgets after Ukraine.	Air defense, munitions, engines, SAF policy, satellite autonomy.	Fragmented procurement, energy cost, defense industrial capacity.
Asia-Pacific	Fastest long-term passenger growth, especially India and Southeast Asia; China pursues domestic OEM capability.	Narrowbody demand, airport infrastructure, MRO localization, regional connectivity.	Geopolitics, certification barriers, supply-chain dependencies.
Middle East	Long-haul hub economics and high defense/ security demand.	Widebody fleets, MRO hubs, sovereign space programs, air defense.	Regional conflict, oil-cycle exposure, airspace disruption.
Japan	High-quality supplier base, space capability and rising defense agenda.	GCAP, H3 ecosystem, propulsion and components, defense space.	Scale limits, workforce aging, commercial aircraft OEM gap.

SECTION 10

Technology and digital transformation

The next technology cycle is less about a single revolutionary aircraft and more about systems integration, data, autonomy and resilient architectures.

Aerospace technology development is shaped by efficiency, autonomy, digitalization, resilience and decarbonization. In commercial aviation, the dominant near-term value levers are fuel burn reduction, reliability, predictive maintenance, digital flight operations and cabin productivity. In defense, the value levers are sensor fusion, autonomy, electronic warfare, survivability and distributed operations. In space, they are launch cadence, satellite manufacturing scale, onboard processing and resilient networks.

Digital twins and predictive maintenance are increasingly important because aerospace assets are expensive, safety-critical and data-rich. Engine health monitoring, flight-data analytics and parts forecasting can reduce unscheduled removals and improve asset availability. These tools are valuable precisely because physical capacity is constrained.

Autonomy is advancing fastest where regulatory and mission conditions allow it: defense unmanned systems, satellites, inspection drones and selected logistics applications. Full autonomy in passenger transport remains more constrained because certification, public acceptance and liability requirements are higher.

DIGITAL TWIN

Availability as value

Data reduces unscheduled maintenance and improves lifecycle economics.

AUTONOMY

Mission extension

Unmanned systems expand sensing, strike, inspection and logistics options.

ADVANCED MATERIALS

Thermal frontier

Composites, CMCs and additive manufacturing enable lighter, hotter, more efficient systems.

SECTION 11

Decarbonization and SAF

Sustainable aviation fuel is the central near-term path, but supply remains far below the scale implied by net-zero commitments.

Aviation decarbonization is difficult because aircraft require high-energy-density propulsion. Battery-electric aircraft may serve limited short-range niches, but large long-haul aircraft will depend on liquid fuels for the foreseeable future. Sustainable aviation fuel is therefore the principal near- and medium-term decarbonization pathway.

ICAO's cleaner-energy vision targets a 5% reduction in international aviation CO2 emissions through cleaner aviation energy by 2030 [14]. Yet SAF supply remains small. IATA reported that SAF production was expected at roughly 1.9 million tonnes in 2025, equal to around 0.6% of jet-fuel consumption, with 2.4 million tonnes expected in 2026, or around 0.8% [15].

The SAF challenge is industrial, not rhetorical. Feedstocks are limited, e-fuels require low-cost green hydrogen and carbon sources, refinery investment is capital intensive, and airlines operate on thin margins. Mandates can create demand, but without scale and cost reduction they can also raise airline costs and ticket prices.

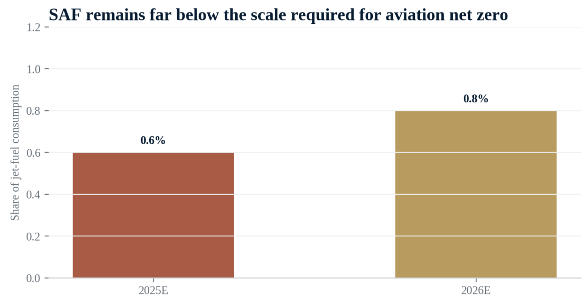

Exhibit 7 - SAF production remains a small share of total jet-fuel demand [15].

SECTION 12

Supply chain and workforce

The most important operational advantage through 2030 will be the ability to industrialize reliably.

Aerospace capacity is hard to ramp because production is not just manufacturing - it is certified manufacturing with traceability, inspection, documentation and regulatory accountability.

Constraint	Why it is hard	Strategic response
Engines	Extreme materials and durability requirements; limited shop and parts capacity.	Invest in hot-section parts, shop throughput and engine health analytics.
Castings and forgings	Qualified capacity is specialized and capital intensive.	Long-term supplier agreements and capacity pre-funding.
Electronics	Aerospace-grade semiconductors and secure systems have long qualification cycles.	Dual sourcing, design modularity and export-control management.
Cabin interiors	Customization and certification can delay final delivery.	Standardization, supplier quality support and earlier configuration freeze.
Labor	Technicians and inspectors require years of experience.	Apprenticeships, technical academies, retention and automation.

SECTION 13

Risk assessment

The industry's upside is large, but execution risk is unusually consequential because quality and certification failures can freeze revenue.

Risk	Severity	Mechanism	Management response
Supply-chain fragility	Very high	Certified parts, engines and precision processes cannot be substituted quickly.	Lower-tier mapping, strategic inventory, supplier finance, realistic rate plans.
Quality / safety events	Very high	A single issue can halt deliveries and trigger regulatory action.	Quality culture, digital traceability, independent oversight, slower but stable ramps.
Geopolitical shock	High	Sanctions, export controls, airspace closures and defense demand surges.	Dual sourcing, allied production, export-control governance.
Labor shortage	High	Retirements and lost apprenticeship pipelines constrain production and MRO.	Apprenticeships, technical schools, automation, retention.
Decarbonization cost	Medium-high	SAF premiums and mandates affect airline economics.	Long-term SAF offtake, policy coordination, efficiency upgrades.
Space congestion	Medium-high	LEO growth increases collision, debris and spectrum risk.	Space traffic management, deorbit rules, resilient architectures.

SECTION 14

Strategic outlook through 2030

Aerospace should remain attractive, but value creation will accrue disproportionately to companies that can execute reliably under constraint.

Through 2030, the sector's base-case outlook is positive but uneven. Commercial aircraft demand remains strong; MRO and engines are likely to remain advantaged; defense aerospace should benefit from security requirements; and space will keep expanding, though not all space business models will prove profitable.

The most important strategic theme is resilience. In the 2010s, aerospace supply chains were optimized for lean cost and global sourcing. In the 2020s, resilience, transparency, allied capacity and industrial surge capability matter more. OEMs and primes that can support lower-tier suppliers, protect quality and avoid unrealistic rate promises will outperform.

For executives, the playbook is clear: prioritize quality over headline rates; own the aftermarket; invest in labor and supplier health; treat software and data as core products; build resilience into space and defense architectures; and approach decarbonization with a realistic industrial roadmap rather than aspirational messaging alone.

Strategic recommendations

1. **Make rate plans executable**
   Align delivery targets with engine, supplier and labor reality; avoid brittle production ramps that create rework and quality escapes.

2. **Treat suppliers as strategic assets**
   Provide visibility, financing, technical help and demand stability to critical lower-tier suppliers.

3. **Own more aftermarket economics**
   Capture spares, data, predictive maintenance, modifications and long-term support instead of relying only on new equipment sales.

4. **Build defense surge capacity deliberately**
   Use multi-year procurement, allied co-production and targeted industrial-base investment for missiles, air defense and space systems.

5. **Scale SAF pragmatically**
   Focus on feedstock access, refinery conversion, offtake contracts and cost curves, not just headline commitments.

6. **Harden space infrastructure**
   Design for redundancy, cybersecurity, deorbit compliance, spectrum resilience and contested-domain operations.

SECTION 15

References

Numbered sources correspond to bracketed citations throughout the report.

1. **[1] Airbus.** Global Market Forecast 2025-2044; global demand for 43,420 new passenger and freighter aircraft.
2. **[2] Boeing.** Commercial Market Outlook 2025-2044; passenger traffic at 4.2% annual growth and global fleet above 49,600 aircraft by 2044.
3. **[3] IATA.** Global Outlook for Air Transport, June 2025; 2025 airline net profit forecast of $36.0 billion and net margin of 3.7%.
4. **[4] Space Foundation.** The Space Report 2025 Q2; global space economy reached $613 billion in 2024.
5. **[5] IATA.** Airline profitability press release, June 2025; passenger revenue projected at $693 billion and RPK growth at 5.8%.
6. **[6] Airbus.** Full-Year FY 2025 results; 793 commercial aircraft delivered, revenue of EUR 73.4 billion and adjusted EBIT of EUR 7.1 billion.
7. **[7] Boeing.** Fourth Quarter 2025 results; commercial delivery recovery and total company backlog of $682 billion.
8. **[8] GE Aerospace.** Annual Report 2025 and fourth-quarter 2025 results; backlog roughly $190 billion and strong services momentum.
9. **[9] Safran.** Full-year 2025 results; revenue of EUR 31.329 billion and aerospace/service momentum.
10. **[10] Oliver Wyman.** Global Fleet and MRO Market Forecast 2026-2036; global MRO demand $136 billion in 2025 and approaching $193 billion by 2030.
11. **[11] SIPRI.** Trends in World Military Expenditure 2025; global military expenditure of $2.887 trillion and continued growth.
12. **[12] Lockheed Martin.** Full-year 2025 financial results; reported backlog of $194 billion.
13. **[13] RTX.** 2025 results and 2026 outlook; backlog of $268 billion, including $161 billion commercial and $107 billion defense.
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15. **[15] IATA.** SAF production update, December 2025; SAF production around 1.9 million tonnes in 2025 and 2.4 million tonnes expected in 2026.