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Aircraft Engine Market- Global Industry Size, Share, Trends, Competition, Opportunity and Forecast, Segmented By Engine Type (Turbofan, Piston, Turboprop, Turboshaft), By Aircraft Type (Narrow Body, Rotocrafts, Business Aircrafts, Fighter Aircrafts, Wide Body Aircrafts, Regional Aircrafts), By Platform (Fixed Wing and Rotary Wing), By Application (Commercial, Military), By Region & Competition, 2021-2031F

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Abstracts

The Global Aircraft Engine Market is projected to expand from USD 84.21 Billion in 2025 to USD 132.01 Billion by 2031, achieving a CAGR of 7.78%. This sector encompasses the engineering and manufacturing of various propulsion systems, such as turbofan, turboshaft, and piston engines, which serve commercial, military, and general aviation needs. Key growth drivers include the continued resurgence of global air travel demand and the strategic imperative for operators to upgrade aging fleets with fuel-efficient technology to reduce operating costs. Data from the General Aviation Manufacturers Association highlights this trend, noting that the value of airplane deliveries rose by 14.3 percent to 26.7 billion dollars in 2024, directly fueling demand for both original equipment engines and aftermarket maintenance services.

Despite these favorable market conditions, the industry grapples with significant supply chain instability that severely restricts production capabilities. Persistent shortages of essential raw materials, including titanium and high-temperature superalloys, combined with delays in sourcing components, create bottlenecks that impede manufacturing schedules. Consequently, engine manufacturers are forced to manage these logistical

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obstacles while simultaneously attempting to clear a growing backlog of orders from airframe manufacturers and defense contractors.

Market Driver

The ongoing recovery in global commercial air passenger traffic establishes a critical need for fleet expansion and increased engine utilization rates. As airlines restore routes and boost flight frequencies to accommodate traveler numbers, the operational pressure on current propulsion assets escalates, triggering an immediate demand for new engine procurement and aftermarket support. The International Air Transport Association's '2024 Full-Year Passenger Market Performance' report from January 2025 indicates that global revenue passenger kilometers (RPKs) increased by 10.4 percent year-over-year. This growth compels major propulsion manufacturers to accelerate production to meet aggressive delivery timelines, a trend reflected in GE Aerospace's financial results, where third-quarter orders in 2024 surged by 28 percent to 12.6 billion dollars.

Simultaneously, the market is significantly shaped by the growing requirement for fuel-efficient and low-emission propulsion architectures as operators aim to meet sustainability goals and curtail volatile fuel costs. Carriers are aggressively retiring older, less efficient aircraft, replacing them with next-generation platforms featuring advanced high-bypass turbofans that deliver substantial improvements in specific fuel consumption and carbon emissions. This strategic fleet renewal represents a financial necessity for long-term viability rather than just regulatory compliance. According to Boeing's '2024 Commercial Market Outlook' released in July 2024, approximately half of the projected 44,000 new commercial airplane deliveries through 2043 will serve to replace older jets with more efficient models, thereby ensuring sustained demand for advanced engine programs.

Market Challenge

Supply chain instability remains a critical obstacle to the growth of the Global Aircraft Engine Market, limiting production capacity and causing delays in delivery schedules. The continued scarcity of vital raw materials, specifically titanium and high-temperature superalloys, creates immediate bottlenecks in the manufacturing of complex propulsion systems. These material shortages compel original equipment manufacturers to decelerate their assembly lines, impeding their ability to convert record-high order backlogs into realized revenue.

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In addition, these logistical difficulties adversely affect the aftermarket sector, where a shortage of spare parts extends maintenance turnaround times and diminishes overall fleet availability. Operators are frequently forced to ground aircraft or incur substantial costs to lease temporary powerplants. According to the International Air Transport Association, supply chain disruptions and the resulting shortage of available engines are expected to impose 2.6 billion dollars in excess engine leasing costs on the airline industry in 2025. This financial burden diverts capital that would otherwise be used for new fleet acquisitions, ultimately suppressing broader market expansion.

Market Trends

The development of hydrogen-combustion and fuel cell powertrains marks a significant technological shift toward achieving absolute zero emissions, moving beyond the incremental efficiency gains of traditional gas turbines. Industry leaders are validating new architectures that employ cryogenic liquid hydrogen and fuel cell stacks to eliminate in-flight carbon output. This transition requires significant capital investment to address complex engineering hurdles involving fuel storage, thermal management, and power-to-weight ratios for future commercial aircraft. As reported by Flying Magazine in April 2025, Airbus has invested over 1.7 billion dollars in its hydrogen initiative to date, highlighting the substantial financial commitment needed to advance these propulsion technologies despite adjustments to the roadmap.

Concurrently, the implementation of AI-driven digital twins for predictive maintenance is reshaping the aftermarket landscape by creating virtual models that replicate physical engine performance in real time. By synthesizing sensor data with advanced analytics, operators can accurately forecast component degradation and arrange servicing before failures happen, moving maintenance strategies from reactive to proactive. This digitization of the maintenance, repair, and overhaul (MRO) sector enhances fleet availability and optimizes lifecycle costs through data verification across extensive historical sets. According to the '2024 Annual Report' from GE Aerospace in February 2025, the company successfully digitized 18 million past MRO records, allowing artificial intelligence models to systematically validate data and identify discrepancies to improve service reliability.

Key Market Players

General Electric Company

Safran SA

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Rolls-Royce Holdings plc

RTX Corporation

CFM International

MTU Aero Engines AG

Honeywell International Inc

IAE International Aero Engines

Textron Inc

Aero Engine Corporation of China

Report Scope

In this report, the Global Aircraft Engine Market has been segmented into the following categories, in addition to the industry trends which have also been detailed below:

Aircraft Engine Market, By Engine Type

Turbofan

Piston

Turboprop

Turboshaft

Aircraft Engine Market, By Aircraft Type

Narrow Body

Rotocrafts

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Spain

Asia Pacific

China

India

Japan

Australia

South Korea

South America

Brazil

Argentina

Colombia

Middle East & Africa

South Africa

Saudi Arabia

UAE

Competitive Landscape

Company Profiles: Detailed analysis of the major companies present in the Global Aircraft Engine Market.

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Global Aircraft Engine Market report with the given market data, TechSci Research offers customizations according to a company's specific needs. The following customization options are available for the report:

Company Information

Detailed analysis and profiling of additional market players (up to five).

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