Global Aircraft Wheels and Brakes Market Assessment, By Technology [Wheels, Brakes, Braking Systems], By End-user [Original Equipment, Aftermarket, Fit Check], By Aircraft Type [Commercial Aircraft, Military Aircraft, Others], By Region, Opportunities and Forecast, 2018-2032F

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Report description:

Global aircraft wheel and brake market is projected to witness a CAGR of 6.49% during the forecast period 2025-2032, growing from USD 8.06 billion in 2024 to USD 13.33 billion in 2032. The global aircraft wheel and brake market is steadily growing due to increased air traffic, technological innovation, and an increasing focus on sustainability. North America is currently launching markets for integrated aircraft manufacturers and large fleets of civil and defense aircraft. The Asia-Pacific market could be witnessing peak growth, owing to growing aviation infrastructure and higher demand in nations like China and India. These companies concentrate on innovations like carbon composite brakes, recycled braking systems, and green manufacturing processes. There are opportunities from the expansion of cheap airlines and demand for lighter, more powerful parts. However, there are also challenges such as high facilities and equipment costs and ongoing innovation that are still available.
The global aircraft wheels and brakes market is on course for steady expansion, fueled by fleet growth, military modernization, and technology innovation. Cost pressures and supply chain threats may, however, curb growth in the short term. Firms that invest in lightweight materials, predictive maintenance, and electric braking are expected to become the market leaders.
For instance, in May 2023, AllClear Aerospace & Defense signed a multi-year distribution agreement with Aircraft Wheel and Brake, LLC. As part of the agreement, AllClear will serve as an exclusive distributor for aircraft wheels and brakes, and related components to support the KT-1 and KT-100 platforms for selected international regions.
Expanding Role of Aircraft Wheels and Brakes in Professional Workloads
The growing role of aircraft wheels and brakes in professional work reflects the changes in the aviation industry in the direction of advanced technology, automation, and sustainability. Modern braking systems are no longer mechanical components, but intelligent data control systems that improve operational efficiency and security. Integrating IoT sensors and AI-operated

forecasting allows airlines and MRO providers to monitor brake wear and performance in real time, reduce unplanned downtime, and optimize maintenance plans. This reduces manual inspection workloads, increases reliance on data analysis, and requires technicians to develop new digital skills. For pilots, advanced automatic braking and electric braking systems minimize manual intervention, reduce fatigue, and improve landing accuracy. In military aviation, high-performance carbon brakes are extremely important for tactical operations and affect your willingness to miss missions and facility fees.

Furthermore, EVTOLS and increased urban air mobility create demand for regenerative braking systems and open new career opportunities for electric aviation. In the meantime, stricter environmental regulations will result in manufacturers becoming environmentally friendly, using light brake materials, providing compliance, and F&E workloads. Brake technology for aircraft brakes is being developed, but experts from aviation engineers, pilots, maintenance teams, and regulatory experts must adapt to more intelligent and efficient systems. In the future, automation, AI integration, and sustainability innovation will be even greater. This will impact aircraft wheel workloads and put the brakes on industry workloads. This advancement underscores the need for continued expansion and adaptation in an increasingly digital and environmentally friendly aviation environment.

For instance, in July 2024, Avianca Costa Rica SA partnered with RTX Corporation to supply wheels and brakes for its new fleet of 103 A320neo aircraft for the next 15 years. This partnership includes full lifecycle support for the wheels and brakes, enhancing operational efficiencies and reducing maintenance needs.

AI Revolution Fuels the Aircraft Wheels and Brakes Market Growth

The AI revolution will significantly accelerate the growth of the aircraft and brake market by improving efficiency, security and forecasting. AI-powered analytics and machine learning algorithms transform traditional braking systems into intelligent data control solutions that optimize performance and reduce operational costs. Due to continuous monitoring of brake wear, temperature, and voltage levels, AI allows for prediction, improved unexpected errors, and minimizes aircraft downtime. This increases the lifespan of brake components and reduces maintenance workloads for airlines and MRO providers. Additionally, AI control automation in braking systems such as Adaptive Auto Braking and Runway overall prevention improves flight safety while simultaneously reducing pilot workloads. Integrating AI with IoT sensors will further refine your brake health checks and allow for more accurate decisions in fleet management. This technological change will drive market growth, thereby making manufacturers strongly invest in AI improvement braking solutions to meet the developing needs of modern aircraft. The AI revolution is therefore an important catalyst in the future design of the aircraft and brake industries.

For example, in August 2022, RUAG International Holding Ltd. and Honeywell International Inc. became authorized service centers for F-35 wheels and brakes. The agreement between the two companies manages maintenance, repair, and overhaul (MRO) authorized service center for the Asia-Pacific Wheels and Brakes Program for the F-35.

Integration of Advanced Technologies in Aircraft Brake Systems

Integrating advanced technologies will revolutionize the aircraft braking system, increasing performance, security, and efficiency. Modern braking solutions include carbon composites that provide superior thermal strength and weight savings, improve fuel efficiency, and reduce maintenance needs compared to traditional steel brakes. Additionally, automatic braking and runway prevention systems use real-time data to optimize service termination and improve landing security. Estimation technologies such as EVTOL and regenerative braking in urban air-moving vehicles will expand the role of brakes in energy recovery. Aviation will transform into more intelligent and more sustainable operations, but these innovations ensure that aircraft braking systems are at the top of efficiency and reliability, meeting the requirements of next-generation air travel.

For instance, in December 2022, American Airlines, Inc. partnered with Safran Group companies to reduce its environmental footprint with lighter, more efficient brakes. The brakes are lighter than steel, with up to 700 pounds (320 kg) of weight savings per aircraft. This upgrade to the Safran Landing Systems carbon brake configuration will help United States meet its sustainability commitments.

North America Dominates the Aircraft Wheels and Brakes Market

North America is the world's leading aircraft and brake market, driven by its strong aviation industry, high defense spending, and technical skills. Top air and space companies such as Boeing, Collins Aerospace (RTX) and Honeywell operate important businesses in the region and design cutting-edge braking systems for commercial and military aircraft. The continued modernization of U.S. fleets, including fighter jets such as the F-35 and F-22, creates demand for premium brakes. Additionally, the busy commercial transport industry, with large airlines, supports the demand for MRO services. The FAA's strict safety

regulations promote innovation and the implementation of intelligent braking technologies such as predictive maintenance and automated braking systems. With more investments in urban air mobility (UAM) and EVTOL, the region is also leading the development of next-generation electric braking technology.

For instance, in April 2025, Spirit Airlines and Safran Landing Systems renewed long-term contracts for carbon wheels and brakes for the U.S. airline Airbus A320 fleet and maintenance, repair and overhaul. This agreement covers Airbus A320Ceo and A320Neo on duty and other contracts which will be delivered in the future.

Impact of U.S. Tariffs on the Global Aircraft Wheels and Brakes Market

□□Higher Input Costs: U.S. manufacturers relying on foreign suppliers may face increased costs if tariffs are applied on wheels and brakes.

□□Pass through to Airline: Airlines and maintenance providers could see higher prices for landing gear components, raising operating expenses.

□□Advantage for Domestic Producers: U.S.-based manufacturers (like Collins Aerospace, Parker Hannifin) could benefit if tariffs reduce foreign competition.

□□Reshoring vs. Offshoring: Some firms may move production to the U.S. to avoid tariffs, while others might shift sourcing to non-tariffed countries (Mexico, Southeast Asia).

Key Players Landscape and Outlook

The global aircraft wheels and brakes market is dominated by a combination of large, multinational firms and specialist producers, each competing based on the effectiveness of technological innovation, supply chains, and aftermarket support. The industry is highly integrated, enabling the major players to have strong positions in the manufacturing and maintenance, repair, and overhaul (MRO) of the original equipment. These firms supply essential parts for business jets, commercial airlines, and military planes, employing new technologies and material science to achieve high-performance and security standards. These companies' manufacturers making such investments are well-suited to address the needs of future planes. In addition, increased focus on future guidance and smart braking systems is a novelty in the aftermarket market, enabling manufacturers to incorporate sensors and analytics into components to enhance durability and reliability.

For instance, in November 2024, TP Aerospace signed a long-term agreement with ASL Aviation Holdings Designated Activity Company (K-Mile Air) to provide a comprehensive wheels and brakes programme for the airline's fleet, including B737CL and B737NG aircraft. This agreement is an all-inclusive, cost-per-landing arrangement that simplifies maintenance and reduces operational costs.

Table of Contents:

7.2.1.2.3.3.Multiple
7.2.1.3.Braking Systems
7.2.2.By End-user
7.2.2.1.Original Equipment
7.2.2.2.Aftermarket
7.2.2.3.Fit Check
7.2.2.3.1.Line Fit
7.2.2.3.2.Retrofit
7.2.3.By Aircraft Type
7.2.3.1.Commercial Aircraft
7.2.3.1.1.Narrow-Body
7.2.3.1.2.Wide-Body
7.2.3.1.3.Regional Jets
7.2.3.2.Military Aircraft
7.2.3.3.Others
7.2.4.By Country Share
7.2.4.1.United States
7.2.4.2.Canada
7.2.4.3.Mexico
7.3.Country Market Assessment
7.3.1.United States Aircraft Wheel and Brake Market Outlook, 2018-2032F*
7.3.1.1.Market Size Analysis & Forecast
7.3.1.1.1.By Value
7.3.1.2.Market Share Analysis & Forecast
7.3.1.2.1.By Technology
7.3.1.2.1.1.Wheels
7.3.1.2.1.1.1.Nose Wheels
7.3.1.2.1.1.2.Main Landing Gear Wheels
7.3.1.2.1.2.Brakes
7.3.1.2.1.2.1.Carbon Brakes
7.3.1.2.1.2.2.Steel Brakes
7.3.1.2.1.2.3.Disc Brakes
7.3.1.2.1.2.3.1.Single
7.3.1.2.1.2.3.2.Dual
7.3.1.2.1.2.3.3.Multiple
7.3.1.2.1.3.Braking Systems
7.3.1.2.2.By End-user
7.3.1.2.2.1.Original Equipment
7.3.1.2.2.2.Aftermarket
7.3.1.2.2.3.Fit Check
7.3.1.2.2.3.1.Line Fit
7.3.1.2.2.3.2.Retrofit
7.3.1.2.3.By Aircraft Type
7.3.1.2.3.1.Commercial Aircraft
7.3.1.2.3.1.1.Narrow-Body
7.3.1.2.3.1.2.Wide-Body
7.3.1.2.3.1.3.Regional Jets

*Companies mentioned above DO NOT hold any order as per market share and can be changed as per information available during research work.

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