

Aircraft Tire Market Report by Product Type (Radial, Bias), Platform (Fixed Wing, Rotary Wing), Sector (OEM, Replacement), Application (Commercial Aircraft, Non-Commercial Aircraft), and Region 2024-2032

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Abstracts

The global aircraft tire market size reached US\$ 2.8 Billion in 2023. Looking forward, IMARC Group expects the market to reach US\$ 4.3 Billion by 2032, exhibiting a growth rate (CAGR) of 4.9% during 2024-2032. The globalization of trade and the growth of international tourism, the escalating demand for environmentally friendly aircraft, and the increased investments by governments in aviation infrastructure development are some of the major factors propelling the market.

An aircraft tire is a specialized rubber tire designed to support the weight of an aircraft during landing, take-off, and while parked on the ground. These tires are a critical component of an aircraft's landing gear system, and they play a vital role in ensuring the safety and performance of aviation operations. They are engineered to withstand extreme conditions, including high speeds during take-off and landing, heavy loads, and the intense heat generated by braking systems. They are typically constructed with multiple layers of specialized rubber compounds and reinforced with various materials, such as steel belts, to provide strength and durability. The design and composition of aircraft tires are carefully tailored to specific aircraft models, considering factors including weight, speed, and landing gear configuration.

The globalization of trade and the growth of international tourism is driving the global market. Businesses rely on air travel to transport goods and personnel across borders, while tourists seek to explore new destinations. This has led to a sustained requirement for reliable and efficient aircraft tires to ensure the safety and punctuality of commercial

flights. Moreover, Environmental concerns are driving a shift towards more fuel-efficient and environmentally friendly aircraft. Modern aircraft often require advanced tires that can handle higher loads, reduce rolling resistance, and contribute to overall fuel efficiency. This push for sustainability encourages the development of innovative tire solutions that align with the aviation industry's environmental goals. Stringent safety regulations and industry standards play a critical role in driving the aircraft tire market. Aircraft tires must adhere to strict safety and performance requirements to ensure the safety of passengers and crew during take-offs, landings, and in-flight operations. Additionally, the market is being propelled by factors such as the rising demand for aircraft for a variety of defense operations, both combat and non-combat, and the increased investments by governments in aviation infrastructure development. These combined factors are expected to continue driving market expansion.

Aircraft Tire Market Trends/Drivers:

Growing Commercial Aviation Sector

The global population continues to grow, leading to an increase in the number of people who can afford air travel. Rising disposable incomes and the growth of the middle-class demographic in emerging economies have led to a rise in demand for both domestic and international air travel. As airlines respond to this growing demand, they expand their fleets and replace older, less fuel-efficient aircraft with newer, more advanced models. This expansion and modernization drive the need for high-quality aircraft tires. These tires must endure the rigorous demands of frequent take-offs, landings, and long-haul flights, ensuring passenger safety and the efficient operation of airlines. Moreover, the globalization of trade and tourism further augments the commercial aviation sector. Businesses increasingly rely on air travel to transport goods and personnel across international borders, while tourism continues to flourish as individuals seek to explore new destinations.

Military Modernization Programs

Numerous countries around the world are actively engaged in modernizing their military fleets to enhance defense capabilities. This modernization involves the acquisition of new fighter jets, cargo planes, helicopters, and other military aircraft. As these aircraft are integrated into military operations, they require specialized, high-performance tires that can withstand the demanding nature of military missions. The diversity of military aircraft applications further drives the need for a variety of tire types, from rugged off-road tires for tactical operations to high-speed, high-load tires for fighter jets. Military aircraft tires must meet stringent performance and safety standards due to the intense

conditions they face, including rapid take offs, landings on challenging terrain, and exposure to extreme weather.

Technological Advancements in Tire Design

Aircraft tire manufacturers invest heavily in research and development to create tires that offer enhanced performance, safety, and efficiency. Additionally, tire manufacturers are working on intelligent tire monitoring systems that provide real-time data on tire condition, pressure, and temperature. These systems enable airlines and military operators to optimize tire maintenance schedules, prevent failures, and extend tire lifespan, ultimately reducing operational costs. The quest for sustainability also drives technological advancements in the aircraft tire market. Manufacturers are exploring eco-friendly materials and manufacturing processes to align with the aviation industry's growing emphasis on environmental responsibility. Also, the development of composite materials and innovative tire structures that enhance tire strength, reduce weight, and improve overall performance. These materials and designs help aircraft tires handle higher loads, provide better fuel efficiency, and withstand the extreme forces experienced during take offs and landings.

Aircraft Tire Industry Segmentation:

IMARC Group provides an analysis of the key trends in each segment of the global aircraft tire market report, along with forecasts at the global, regional, and country levels for 2024-2032. Our report has categorized the market based on product type, platform, sector, and application.

Breakup by Product Type:

Radial

Bias

Radial dominates the market

The report has provided a detailed breakup and analysis of the market based on the product type. This includes radial and bias. According to the report, radial represented the largest segment.

Radial aircraft tires offer enhanced fuel efficiency. Their construction minimizes rolling resistance, which is crucial for reducing the energy required during take-off and landing. Lower rolling resistance translates to less friction between the tire and the runway,

resulting in decreased fuel consumption. Moreover, radial tires boast a longer lifespan and increased durability compared to bias-ply tires. The radial construction allows for even distribution of load and heat across the tire's surface, reducing wear and tear. This not only extends the tire's life but also ensures consistent performance throughout its operational lifespan. In an industry where safety is paramount, the reliability and longevity of radial aircraft tires make them an indispensable choice. Additionally, radial tires provide superior handling characteristics, especially during high-speed take-offs and landings.

Breakup by Platform:

Fixed Wing

Rotary Wing

Fixed wing dominate the market

The report has provided a detailed breakup and analysis of the market based on the platform. This includes fixed wing and rotary wing. According to the report, fixed wing represented the largest segment.

Commercial aviation alone relies heavily on fixed wing platforms to transport passengers and goods across the globe. This includes a wide range of aircraft sizes and capacities, from small regional jets to wide-body airliners. These aircraft, characterized by their fixed wing configuration, consistently require a steady supply of high-quality tires to ensure safe and efficient operations. Furthermore, the complexity and diversity of fixed wing aircraft contribute significantly to the demand for specialized tires. Different types of fixed wing aircraft have distinct tire requirements based on factors such as size, weight, speed, and landing gear configuration. Large commercial airliners necessitate robust, high-capacity tires designed to handle the immense weight and high-speed landings associated with long-haul flights, while military fighter jets require tires capable of withstanding the extreme demands of high-performance combat operations.

Breakup by Sector:

OEM

Replacement

OEM dominate the market

The report has provided a detailed breakup and analysis of the market based on the sector. This includes OEM and replacement. According to the report, OEM represented the largest segment.

OEMs are responsible for manufacturing and assembling new aircraft, including the installation of tires as part of the initial aircraft build. OEMs are under continuous pressure to deliver new aircraft to meet this demand. Each new aircraft requires a set of high-quality tires that meet specific design and performance criteria, such as load capacity, speed rating, and durability. This unceasing demand for aircraft production results in a substantial requirement for tires in the OEM sector. Furthermore, the OEM sector is characterized by its exacting standards and rigorous testing processes. Aircraft manufacturers must adhere to stringent safety regulations and industry standards, leaving no room for compromise when it comes to the quality and performance of the components they use. Aircraft tires are no exception, and OEMs rely on tire suppliers to deliver products that not only meet these strict requirements but also contribute to the overall safety and efficiency of the aircraft.

Breakup by Application:

- Commercial Aircraft
- Narrow Body Aircraft
- Wide Body Aircraft
- Very Large Aircraft
- Regional Transport Aircraft
- Non-Commercial Aircraft

Commercial aircraft dominates the market

The report has provided a detailed breakup and analysis of the market based on the application. This includes commercial aircraft (narrow body aircraft, wide body aircraft, very large aircraft, regional transport aircraft), and non-commercial aircraft. According to the report, commercial aircraft represented the largest segment.

The expanding global population, rising middle-class incomes, and increased urbanization have led to a rise in air travel demand. Passengers are now seeking more affordable and convenient means of transportation, and airlines are expanding their fleets to meet this growing need. As a result, the commercial aviation sector has witnessed substantial fleet expansion and modernization efforts, resulting in a

continuous requirement for the product. Moreover, commercial aircraft typically operate under high-frequency schedules, conducting numerous take-offs and landings daily. This operational intensity places significant stress on aircraft tires, necessitating robust and reliable products that can withstand the rigorous demands of frequent use. The safety and efficiency of commercial flights depend heavily on the quality and performance of these tires, making them a vital component in ensuring passenger safety and on-time arrivals.

Breakup by Region:

North America

United States

Canada

Asia Pacific

China

Japan

India

South Korea

Australia

Indonesia

Others

Europe

Germany

France

United Kingdom

Italy

Spain

Russia

Others

Latin America

Brazil

Mexico

Others

Middle East and Africa

Asia Pacific exhibits a clear dominance, accounting for the largest aircraft tire market share

The market research report has also provided a comprehensive analysis of all the major

regional markets, which include North America (the United States and Canada); Asia Pacific (China, Japan, India, South Korea, Australia, Indonesia, and others); Europe (Germany, France, the United Kingdom, Italy, Spain, Russia, and others); Latin America (Brazil, Mexico, and others); and the Middle East and Africa. According to the report, Asia Pacific accounted for the largest market share.

Asia Pacific has experienced an unprecedented increase in air travel demand over the past few decades. This growth is driven by a combination of factors, including the region's increasing middle-class population, rising disposable incomes, and increased urbanization. As more individuals in the Asia Pacific seek air travel for business and leisure, airlines in the region have been expanding their fleets, thus generating a substantial and consistent demand. Consequently, this high-frequency air travel schedule has led to an increased requirement for tire replacements and maintenance, further solidifying the region's dominance. Furthermore, Asia Pacific's status as a manufacturing and industrial hub has a significant impact on the aircraft tire market. With numerous aircraft manufacturing facilities and a growing aviation maintenance, repair, and overhaul (MRO) sector, the region plays a pivotal role in the global aviation industry's supply chain.

Competitive Landscape:

Major companies are investing in R&D to develop advanced tire technologies, materials, and manufacturing processes. Leading players are also innovating to create tires that offer improved fuel efficiency, longer lifespan, and enhanced performance characteristics and developing intelligent tire monitoring systems to provide real-time data on tire condition, pressure, and temperature, which helps airlines optimize maintenance. Furthermore, companies are maintaining stringent quality control and safety standards to ensure that tires meet or exceed aviation industry regulations and certifications and conducting rigorous testing, including load testing and high-speed testing, to ensure tire reliability and safety. Key players are collaborating closely with aircraft manufacturers and operators to provide customized tire solutions that meet specific aircraft requirements and are offering a wide range of tire sizes and types to cater to different aircraft platforms, including commercial, military, and regional aircraft.

The report has provided a comprehensive analysis of the competitive landscape in the market. Detailed profiles of all major companies have also been provided. Some of the key players in the market include:

Aviation Tires

Bridgestone Corporation

Desser Tire & Rubber Co.
Dunlop Aircraft Tyres Ltd.
Goodyear Tire & Rubber Co.
Michelin
Petlas Tire Corporation
Qingdao Sentury Tire Co. Ltd.
Specialty Tires of America
Wilkerson Company Inc. (Wco) Ltd.

Recent Developments:

In July 2023, Michelin launched Air X SKY LIGHT MICHELIN tire. It is a new generation aircraft tire that is lighter and longer lasting, offering better performances while guaranteeing the same level of safety.

In May 2023, Goodyear Tire & Rubber Co announced a new tread formulation for its ultra-high performance, all-season ElectricDrive™ GT tire. The specialized tread compound that provides enhanced all-season traction includes Monolith carbon black produced by methane pyrolysis.

In June 2022, Bridgestone launched WeatherPeak touring tyre in 56 sizes. The new Bridgestone WeatherPeak tyre is available in 56 sizes to fit 87% of the of the sedans, mini vans, and crossovers on the road today, said the tyre maker.

Key Questions Answered in This Report

1. What is the market size for the global aircraft tire market?
2. What is the global aircraft tire market growth?
3. What are the global aircraft tire market drivers?
4. What are the key industry trends in the global aircraft tire market?
5. What is the impact of COVID-19 on the global aircraft tire market?
6. What is the global aircraft tire market breakup by product type?
7. What is the global aircraft tire market breakup by sector?
8. What is the global aircraft tire market breakup by application?
9. What are the major regions in the global aircraft tire market?
10. Who are the key companies/players in the global aircraft tire market?

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