

Global Supersonic and Hypersonic Aircraft Market 2023

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Abstracts

The global market for supersonic and hypersonic aircraft is projected to reach a value of \$4.86 billion by 2029, with a compound annual growth rate (CAGR) of 2.1% during the period from 2023 to 2029. Manufacturers are actively planning to enter the commercial market by 2025, driven by the high demand primarily originating from the defense industry.

The increased flight speed offered by supersonic and hypersonic aircraft presents several advantages for airlines. These include shorter turn-around times, higher flight volumes, and lower costs. As a result, there is a growing demand for commercial supersonic and hypersonic passenger aircraft. Although supersonic flights tend to consume more fuel, the time-saving benefits they provide can ultimately reduce overall fuel consumption and emissions, particularly for long-haul flights.

Manufacturers in this industry are placing a strong emphasis on sustainable operations and integrating their platforms with defense systems. This focus on sustainability aligns with the global trend towards reducing carbon emissions and adopting environmentally friendly practices. Additionally, the market is witnessing the entry of startups and emerging players, who are receiving support from government agencies and established defense manufacturers.

However, there are several challenges that need to be addressed in the supersonic and hypersonic aircraft market. Regulatory laws and restrictions pose significant hurdles, as they need to be updated and adapted to accommodate these advanced aircraft technologies. Maintenance costs for supersonic and hypersonic aircraft can also be higher compared to traditional aircraft, requiring specialized expertise and infrastructure. Sustainability and environmental concerns are additional factors that need to be

carefully addressed to ensure the long-term viability of these high-speed aircraft.

Despite these challenges, there are numerous opportunities in the market. The demand for high-speed platforms remains strong, driven by the need for faster and more efficient transportation. This creates opportunities for manufacturers to develop innovative propulsion systems and explore new propellants that are more sustainable and environmentally friendly.

Market Segmentation

The market is segmented based on various factors, including speed regime, application, subsystem, and region.

By subsystem - airframe, avionics, control systems, electrical systems, propulsion, undercarriage, weapon system, others

By speed regime - hypersonic aircraft, supersonic aircraft

By application - commercial, military

By region - Asia-Pacific, Europe, North America

During the forecast period, the global supersonic and hypersonic aircraft market is expected to be dominated by the demand for supersonic aircraft, primarily due to the challenges associated with developing hypersonic aircraft. Supersonic aircraft have a longer operational history, which contributes to their higher growth potential in the market. In 2022, supersonic aircraft had the highest market penetration, exhibiting a compound annual growth rate (CAGR) of 1.4% from 2023 to 2029. These aircraft operate at speeds ranging from Mach 1 to Mach 5 and are characterized by higher fuel consumption and shorter lifespans for critical subsystems.

The demand for supersonic and hypersonic aircraft is primarily driven by defense agencies, particularly for military applications. Modernization programs and the development of new hypersonic capabilities are the key drivers for the military segment, which is expected to exhibit a CAGR of 0.9% from 2023 to 2029. High-speed platforms are utilized for various purposes in military operations, including surveillance, reconnaissance, cargo transport, and combat missions. Unmanned vehicles and hypersonic aircraft play crucial roles in enhancing military capabilities.

Within the market, the airframe and propulsion subsystems experience the highest demand, with a CAGR of 2.1% from 2023 to 2029. Aircraft manufacturers are focused on innovating production methods and improving performance in these areas. The airframe subsystem remains the largest cost component for manufacturers throughout

the forecast period. Prominent companies such as Lockheed Martin, Northrop Grumman, and BAE Systems are responsible for integrating and producing the airframe component, ensuring its reliability and efficiency.

In terms of regional contributions, Europe played a significant role in the market, contributing \$1.7 billion in 2022. The region's contribution is driven by the need to modernize combat aircraft and maintain dominance against rival nations. Key market players in Europe, including United Aircraft Corporation, Saab, BAE Systems, and Dassault Aviation, are actively involved in the development and production of supersonic and hypersonic aircraft, contributing to the region's market growth.

Competitive Landscape

In the highly competitive supersonic and hypersonic aircraft market, key players employ a range of strategies to enhance their market share and stay ahead of the competition. These strategies include product innovations, contract agreements, partnerships, acquisitions, and business expansions.

Currently, established players hold a significant portion of the market, accounting for approximately 62% of the total market share. These established players have a strong presence and extensive experience in the industry. On the other hand, emerging players and startups make up about 38% of the market, bringing fresh ideas and innovative technologies to the table.

Prominent players in the supersonic and hypersonic aircraft market include Aviation Industry Corporation of China, BAE Systems plc, Baykar Makina Sanayi ve Ticaret A.S., Boom Technology, Inc., Dassault Aviation S.A., Destinus SA, Exosonic, Inc., General Electric Company (GE), Hermeus Corporation, Hindustan Aeronautics Limited, Hypersonix Launch Systems, Lockheed Martin Corporation, Northrop Grumman Corporation, Reaction Engines Limited, Rolls-Royce Holdings plc, RTX Corporation, The Boeing Company, among others. These companies are at the forefront of technological advancements and are actively involved in the development and production of supersonic and hypersonic aircraft.

Recent Industry Developments

American Airlines and Boom Supersonics signed a multi-billion-dollar prebook order agreement in August 2022 for the Overture Aircraft, a supersonic jet capable of accommodating 70 passengers. The aircraft is expected to enter the commercial aviation market by 2029.

Hypersonix Launch Systems Limited completed the development of the DART AE hypersonic drone in November 2021. The drone utilizes the SPARTAN hydrogen fuel-based scramjet engine, achieving air-breathing thrust up to Mach 12.

Reaction Engines Ltd. concluded testing for the SABRE engine in June 2021. This innovative engine generates thrust up to Mach 5.4 without the need for supplementary propulsion. The successful demonstration of the engine has led to partnership agreements and contracts for the development of a hypersonic flight-capable aircraft based on the SABRE technology.

Scope of the Report

To analyze and forecast the market size of the global supersonic and hypersonic aircraft market.

To classify and forecast the global supersonic and hypersonic aircraft market based on subsystem, speed regime, application, region.

To identify drivers and challenges for the global supersonic and hypersonic aircraft market.

To examine competitive developments such as mergers & acquisitions, agreements, collaborations and partnerships, etc., in the global supersonic and hypersonic aircraft market.

To identify and analyze the profile of leading players operating in the global supersonic and hypersonic aircraft market.

Why Choose This Report

Gain a reliable outlook of the global supersonic and hypersonic aircraft market forecasts from 2023 to 2029 across scenarios.

Identify growth segments for investment.

Stay ahead of competitors through company profiles and market data.

The market estimate for ease of analysis across scenarios in Excel format.

Strategy consulting and research support for three months.

Print authentication provided for the single-user license.

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