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Aircraft Simulation and Training Market Forecasts to 2034 – Global Analysis By Simulation Type (Full Flight Simulators (FFS), Flight Training Devices (FTD), Partial Flight/Sub-System Trainers, and Virtual & Immersive Trainers), Platform (Commercial Aviation, Military Aviation, Business & General Aviation, Unmanned Aerial Vehicles, and Advanced Air Mobility), Component, End User, and By Geography

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Abstracts

According to Stratistics MRC, the Global Aircraft Simulation and Training Market is accounted for $12.7 billion in 2026 and is expected to reach $26.5 billion by 2034 growing at a CAGR of 9.6% during the forecast period. The aircraft simulation and training provides flight simulators, virtual training software, instructor systems, and maintenance training platforms for pilots, cabin crew, and ground personnel. It serves commercial aviation, defense, and training academies. Growth is driven by rising global air traffic, pilot shortage concerns, safety regulations requiring recurrent training, cost advantages over live flight training, and advances in virtual reality and digital twin technologies.

According to the International Civil Aviation Organization (ICAO), the global aviation system will require over 620,000 new pilots by 2042.

Market Dynamics:

Driver:

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Global pilot shortage requiring accelerated and efficient training pathways

The aviation industry is currently navigating a severe global pilot shortage, largely catalyzed by a wave of mandatory retirements and a rapid rebound in passenger traffic. To bridge this gap, airlines are aggressively adopting advanced simulation technologies to compress training timelines without compromising safety. These systems allow for high-frequency, repetitive practice of complex maneuvers that would be too costly or dangerous in actual aircraft. By shifting a greater percentage of curriculum hours to high-fidelity simulators, training centers can process larger cohorts of students more efficiently, ensuring a steady supply of qualified personnel to support global fleet expansions.

Restraint:

Extremely high capital cost of full-flight simulators (FFS) and visual systems

Despite the clear benefits of simulation, the substantial initial investment required for Level D Full-Flight Simulators remains a significant market barrier. These units often cost upwards of $15 million, excluding the specialized infrastructure and ongoing maintenance expenses needed for operation. For smaller flight schools and regional carriers, this capital intensity can be prohibitive, leading to a reliance on older hardware or the outsourcing of training. Furthermore, the rapid pace of technological obsolescence in visual systems and avionics requires frequent, expensive updates, which can strain the financial resources of even well-established training providers globally.

Opportunity:

Expansion into UAV and Advanced Air Mobility (AAM) pilot training

Simulation providers find a fertile new frontier in the meteoric rise of Unmanned Aerial Vehicles (UAVs) and the emerging Advanced Air Mobility (AAM) sector. As regulatory bodies establish certification standards for 'air taxi' pilots and commercial drone operators, there is an urgent demand for specialized simulation platforms tailored to electric vertical takeoff and landing (eVTOL) aircraft. Developers are leveraging existing simulation engines to create low-altitude, urban environment scenarios, offering a scalable solution for training thousands of new operators. This diversification allows traditional simulation firms to capture high-growth revenue streams outside of conventional commercial and military aviation.

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Threat:

Competition from training outsourcing and overseas training centers

Domestic simulation providers face intensifying pressure from the rising trend of training outsourcing to overseas centers, particularly in regions with lower operational costs. Many airlines are now opting to send their crews to centralized global hubs that offer 'Training-as-a-Service' (TaaS) models, which reduce the need for carriers to maintain their simulator fleets. This shift creates a highly competitive pricing environment, often resulting in margin erosion for local equipment manufacturers. Additionally, the proliferation of remote, cloud-based training modules allows pilots to complete ground school requirements anywhere, further challenging the dominance of traditional, fixed-location simulation facilities.

Covid-19 Impact:

The COVID-19 pandemic initially devastated the market as grounded fleets led to the suspension of pilot hiring and a sharp decline in simulator orders. However, the long-term impact served as a catalyst for digital transformation. The industry pivoted toward remote learning and 'extended reality' (XR) solutions to maintain crew currency during lockdowns. Post-pandemic, the massive exit of senior pilots via early retirement packages created the current labor vacuum, ultimately driving a renewed, robust demand for simulation to train a new generation of aviators.

The commercial aviation segment is expected to be the largest during the forecast period

The commercial aviation segment is expected to account for the largest market share during the forecast period due to the massive volume of pilot recruitment needed by global airlines. Carriers are receiving hundreds of next-generation, fuel-efficient aircraft, which has led to an unprecedented demand for type-rating and recurrent training. Stringent safety mandates from civil aviation authorities require pilots to undergo regular simulator evaluations, ensuring a continuous revenue stream for hardware and service providers. The persistent growth in emerging markets, where new airline startups are heavily investing in training infrastructure, further reinforces this segment's dominance.

The virtual & immersive trainers segment is expected to have the highest CAGR during the forecast period

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Over the forecast period, the virtual & immersive trainers segment is predicted to witness the highest growth rate as VR, AR, and MR technologies become mainstream in flight schools. These 'low-footprint' devices offer a cost-effective bridge between traditional ground school and expensive full-motion simulators, allowing students to master cockpit layouts and procedural checklists in a portable environment. The rapid advancement in headset resolution and haptic feedback has made these trainers highly effective for muscle memory development. Consequently, defense and commercial sectors are rapidly integrating these immersive tools to enhance training density and reduce the overall cost per pilot.

Region with largest share:

During the forecast period, the North America region is expected to hold the largest market share owing to its deeply established aviation ecosystem and the presence of industry titans like Boeing and CAE. A highly sophisticated network of flight academies and a massive military aviation budget that prioritizes synthetic training environments benefit the region. Furthermore, strict FAA regulations regarding simulator-based training hours ensure a high replacement rate for aging hardware. North America’s leadership is sustained by continuous R&D investments in AI-driven simulation and a proactive approach to certifying new pilot training technologies for emerging air mobility.

Region with highest CAGR:

During the forecast period, the Asia Pacific region is anticipated to exhibit the highest CAGR as a result of explosive growth in passenger air traffic across China, India, and Southeast Asia. To support the hundreds of aircraft currently on order by regional low-cost carriers, there is an urgent need to build domestic training capacity from the ground up. Governments in the region are incentivizing the establishment of new flight training hubs to reduce dependency on Western centers. This massive infrastructure build-out, combined with a rising middle class and increasing defense spending, positions Asia Pacific as the primary engine for future market expansion.

Key players in the market

Some of the key players in Aircraft Simulation and Training Market include CAE Inc., L3Harris Technologies, Inc., FlightSafety International Inc., Thales Group, The Boeing Company, Airbus SE, Lockheed Martin Corporation, RTX Corporation, Textron Inc., Leonardo S.p.A., Saab AB, Northrop Grumman Corporation, Elbit Systems Ltd., BAE

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Systems plc, and Rheinmetall AG.

Key Developments:

In October 2025, CAE Inc. announced deployment of AI-enabled flight simulators for major airlines, enhancing pilot training efficiency.

In September 2025, Thales Group introduced mixed reality training systems, combining VR and AR for advanced pilot instruction.

In July 2025, L3Harris Technologies expanded its military flight simulation programs, integrating next-gen cockpit systems.

In May 2025, Boeing Training Systems launched cloud-based pilot training modules, enabling remote access for global aviation schools.

Simulation Types Covered:

- Full Flight Simulators (FFS)
- Flight Training Devices (FTD)
- Partial Flight/Sub-System Trainers
- Virtual & Immersive Trainers

Platforms Covered:

- Commercial Aviation
- Military Aviation
- Business & General Aviation
- Unmanned Aerial Vehicles
- Advanced Air Mobility

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Components Covered:

- Hardware
- Software
- Services

End Users Covered:

- Commercial Airlines & Cargo Operators
- Defense & Government Agencies
- Civil Flight Schools & Ab-Initio Academies
- Aircraft OEMs

Regions Covered:

- North America
  - US
  - Canada
  - Mexico
- Europe
  - Germany
  - UK
  - Italy
  - France

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- Spain
- Rest of Europe

Asia Pacific

- Japan
- China
- India
- Australia
- New Zealand
- South Korea
- Rest of Asia Pacific

South America

- Argentina
- Brazil
- Chile
- Rest of South America

Middle East & Africa

- Saudi Arabia
- UAE
- Qatar

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South Africa

Rest of Middle East & Africa

What our report offers:
- Market share assessments for the regional and country-level segments
- Strategic recommendations for the new entrants
- Covers Market data for the years 2024, 2025, 2026, 2028, and 2032
- Market Trends (Drivers, Constraints, Opportunities, Threats, Challenges, Investment Opportunities, and recommendations)
- Strategic recommendations in key business segments based on the market estimations
- Competitive landscaping mapping the key common trends
- Company profiling with detailed strategies, financials, and recent developments
- Supply chain trends mapping the latest technological advancements

Free Customization Offerings:

All the customers of this report will be entitled to receive one of the following free customization options:

Company Profiling

Comprehensive profiling of additional market players (up to 3)

SWOT Analysis of key players (up to 3)

Regional Segmentation

Market estimations, Forecasts and CAGR of any prominent country as per the client's interest (Note: Depends on feasibility check)

Competitive Benchmarking

Benchmarking of key players based on product portfolio, geographical presence, and strategic alliances

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Note: Tables for North America, Europe, APAC, South America, and Middle East & Africa Regions are also represented in the same manner as above.

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