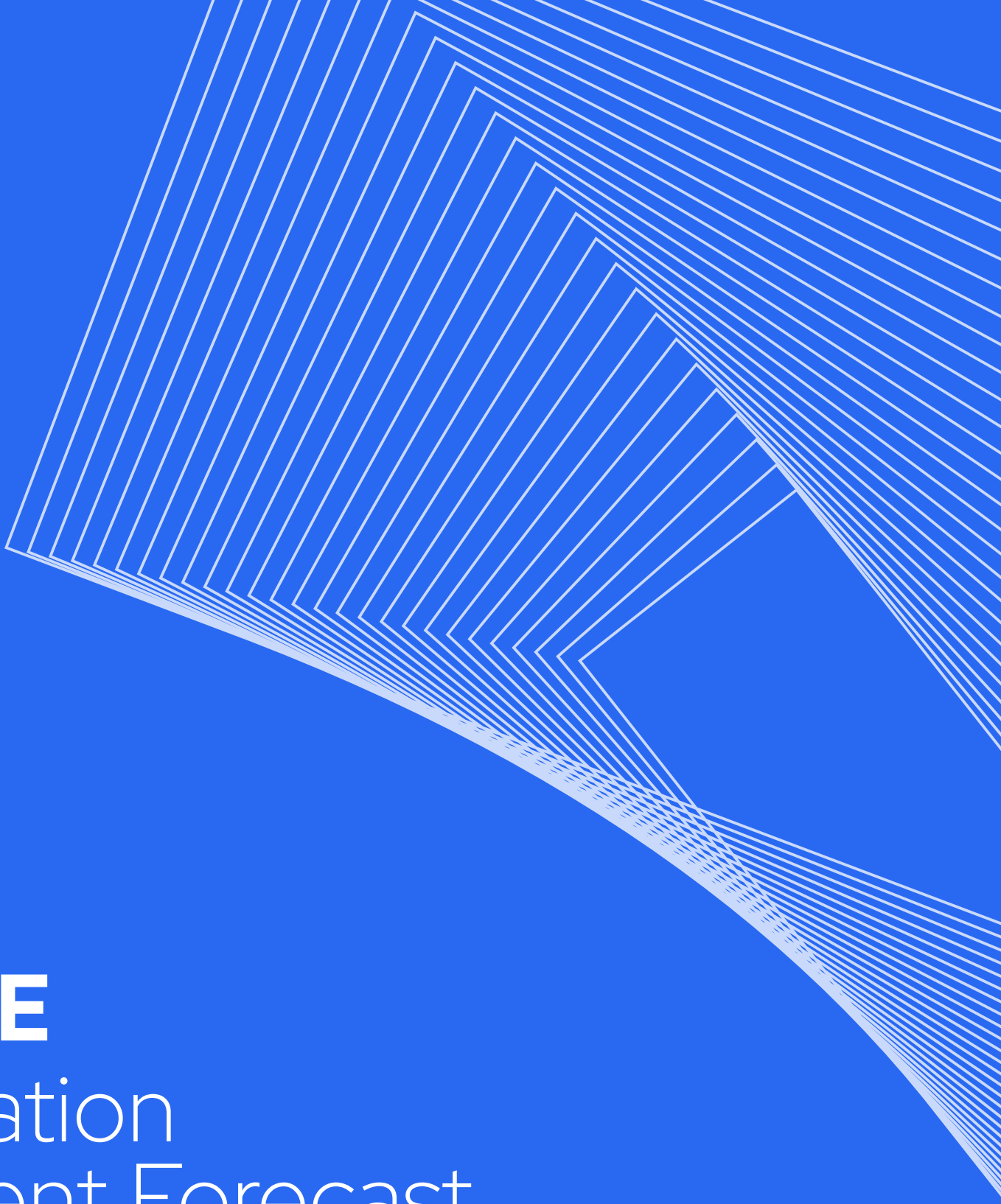

CAE

Aviation Talent Forecast

10-year outlook of demand for pilots, aircraft maintenance technicians, cabin crew and air traffic controllers in civil aviation.
All for shaping the future of aviation.

2025

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Introduction

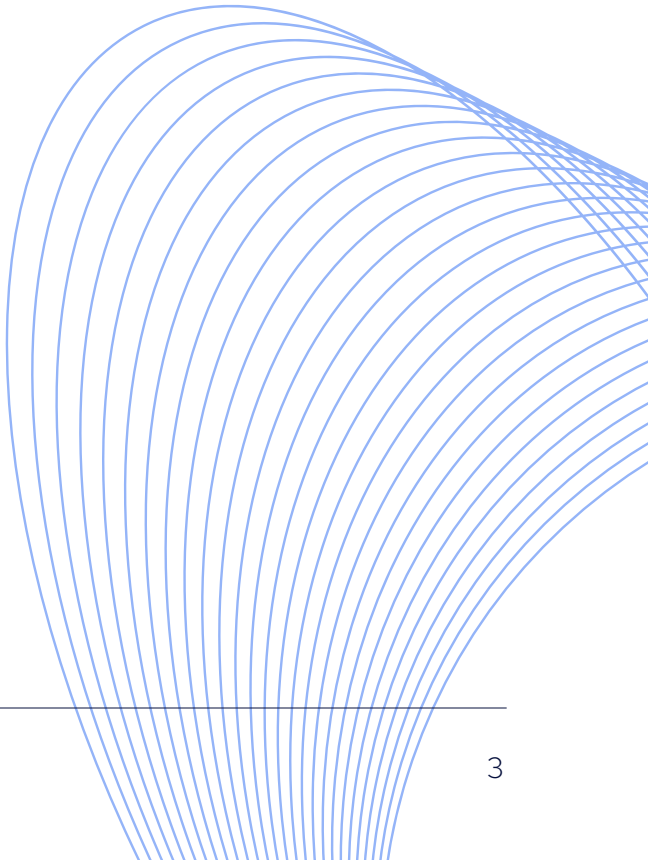
The aviation industry is unlike any other – dynamic, exciting, and resilient. Despite facing numerous challenges over the years, the industry has consistently bounced back, driven by strong demand for business and leisure air travel, as well as cargo transport.

Aviation plays an essential role in keeping the world connected, from bringing loved ones closer, facilitating in-person business interactions and ensuring essential cargo gets where it is needed. A robust post-pandemic recovery underscored the vital importance of the aviation industry in the global economy and set a growth trajectory that will continue.

The power and reach of this industry come to life when seeing a magnificent aircraft soaring in the sky, taking in the birds' eye view from a passenger seat or witnessing the glide of a graceful landing. Behind these inspiring images and experiences are the many trained professionals behind the scenes who ensure the safety and efficiency of every flight.

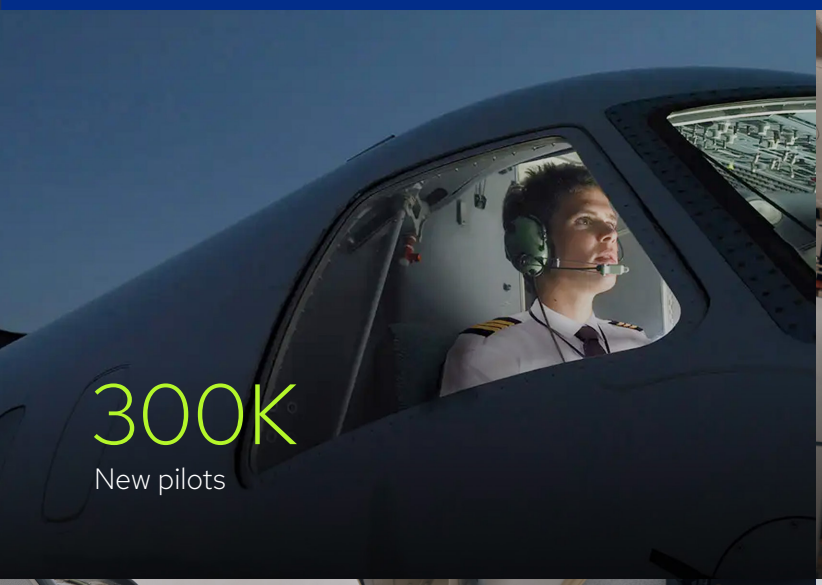
These are the people this report is about – the pilots, cabin crew, aircraft maintenance technicians and air traffic controllers who bring our industry to life onboard, at control towers and in maintenance hangars. Given the upward trend ahead, the need to recruit, train and retain skilled professionals will be critical to securing the aviation industry's future.

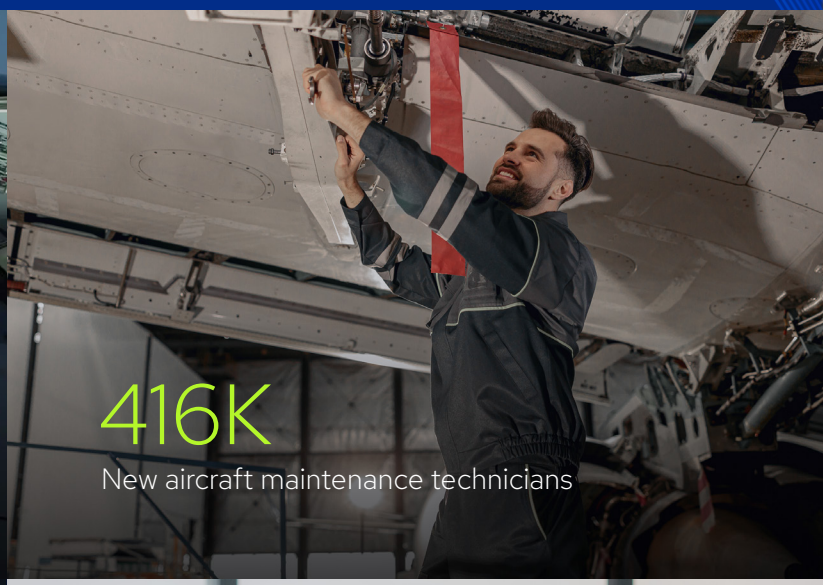
With this in mind, we are pleased to present the 2025 edition of the Aviation Talent Forecast, an analysis of the upcoming global demand for pilots, cabin crew, aircraft maintenance technicians and air traffic controllers. This forecast outlines the number of professionals needed over the next decade, explores the drivers behind growing demand and identifies strategies to attract new talent. The report also covers initiatives led by CAE to support airlines, business aviation operators and Air Navigation Service Providers (ANSPs) in securing highly skilled personnel.



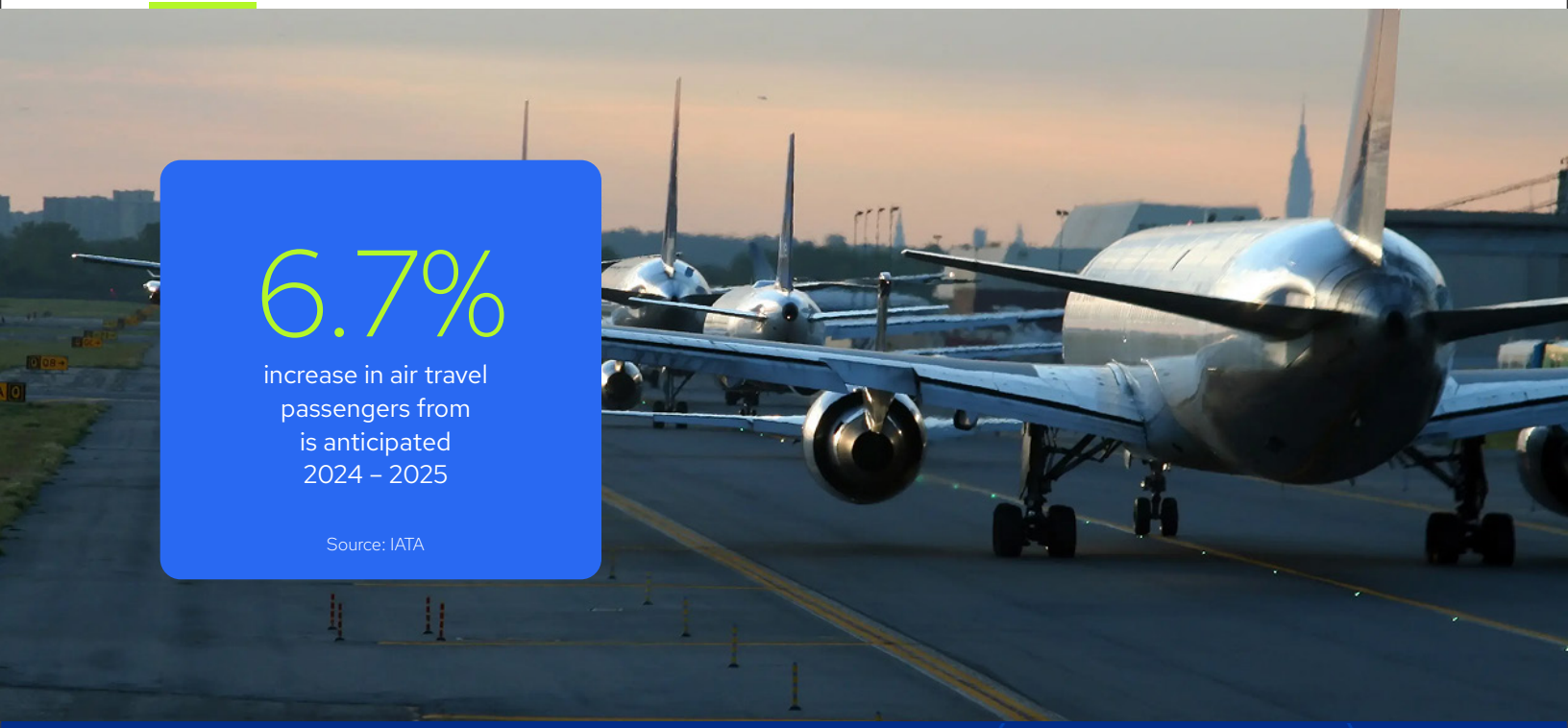
1,465,000

New civil aviation professionals needed over the next 10 years





Growth and demand



6.7%

increase in air travel passengers from is anticipated 2024 – 2025

Source: IATA

Talent forecast

The Aviation Talent Forecast offers an outlook designed to help shape the future of a growing aviation industry. It examines how we can meet the rising demand for aviation professionals and address challenges such as retirements, attrition and access to training in the coming years.

The report also considers a range of macroeconomic indicators that have taken on increasing importance in recent months and have the potential to significantly impact civil aviation.

Shaping the future of aviation

Meeting the demand outlined in this forecast will require bold thinking and innovative approaches, not only to attract the next generation of aviation professionals, but also to ensure they are trained with the precision and agility that today's industry demands.

Looking ahead, training will be the most critical bridge between a candidate choosing an aviation career and achieving success in their field.

Dropout and failure rates remain high in the professions outlined in this report. In the U.S. alone, a staggering 30% of paid air traffic control students do not complete their training[1]. Training programs for pilots, cabin crew and aircraft maintenance technicians face similar challenges due to a range of factors, including:

- Duration of training
- Financial barriers
- Academic and technical complexity of training
- Emotional demands of the job

A key measure of success will be how effectively these factors are addressed to ensure the number of aviation professionals required to fill these positions receives the necessary training. Incorporating the principles of learning science into aviation training is one way the industry is adapting to shifts in learning behaviours. For example, handing a stack of manuals to trainees accustomed to digital interfaces like iPads is probably not the right approach. Technology is a key enabler in this new learning paradigm, and the aviation industry is taking actions to address it.

More on fleet growth

There are 33,000 commercial aircraft in service today. That number is expected to grow to 44,000 by 2034 – a 35% increase over the next 10 years. While slightly lower than previous projections due to supply chain constraints, growth remains steady. Narrow-body aircraft, which currently make up 62% of the global commercial aircraft fleet, will increase to 70% by 2034.

In business aviation, there are 23,000 business jets in service today. By 2034, that number is expected to reach 27,000 aircraft worldwide, a 19% increase over the next decade[2].

Growing aircraft fleets are a direct response to rising demand for air travel. In 2025, passenger numbers are estimated to reach a record 5.2 billion, a 6.7% increase from 2024. Cargo volumes are anticipated to reach 72.5 million tonnes in 2025, a 5.8% rise from the previous year[3].

Waves of retirement and attrition

When assessing the demand for aviation professionals, the large number of personnel approaching retirement age is a concern that cannot be overlooked. So, in turn, is the strain experienced by their colleagues, which is leading to higher attrition rates.

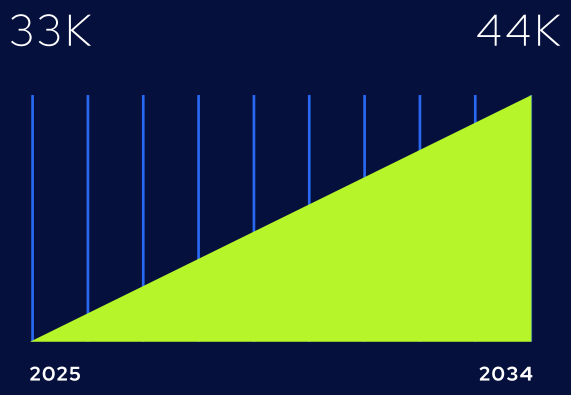
In the U.S. alone, the Federal Aviation Administration (FAA) projects that 4,300 pilots will retire annually over the next decade[4], at the same time as fleets are projected to grow.

The situation is similar in other parts of the world, where 129,000 new commercial pilots will be needed by 2034 to replace those retiring, and an additional 138,000 pilots will be required for the projected growth of the industry.

In the coming decade, pilot demand numbers indicate that about 50% of flight decks worldwide might be staffed by pilots with a combined experience level of less than 10 years flying. This statistic further highlights the need to adapt training to the needs of the next generation.

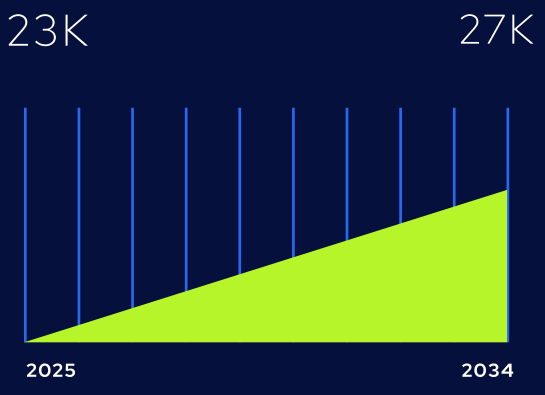
The same applies to air traffic controllers. While there is no mandatory retirement age in many countries, FAA air traffic controllers must retire at age 56, with some eligible for early retirement at 50. The FAA is currently staffed by 10,800 controllers, but an additional 3,500 personnel are needed to meet target staffing levels[5]. Worldwide, it is estimated that ANSPs are understaffed by approximately 7,000 air traffic controllers.

Expected fleet growth over the next 10 years



COMMERCIAL AIRCRAFT IN SERVICE

CAGR: 3.25%



BUSINESS AIRCRAFT IN SERVICE

CAGR: 1.80%

Aviation professionals needed today

Governmental organizations, airlines, aviation associations, ANSPs and training organizations like CAE are taking steps to address the demand for aviation professionals. Several regional airlines offer attractive compensation packages to recruit new pilots, aircraft maintenance technicians and cabin crew. Airlines, ANSPs and business aviation operators also partner with training organizations to provide post-graduation job opportunities, offering incentives like conditional letters of employment and sponsorships to reduce the financial burden of ab initio (on-aircraft) flight training programs.

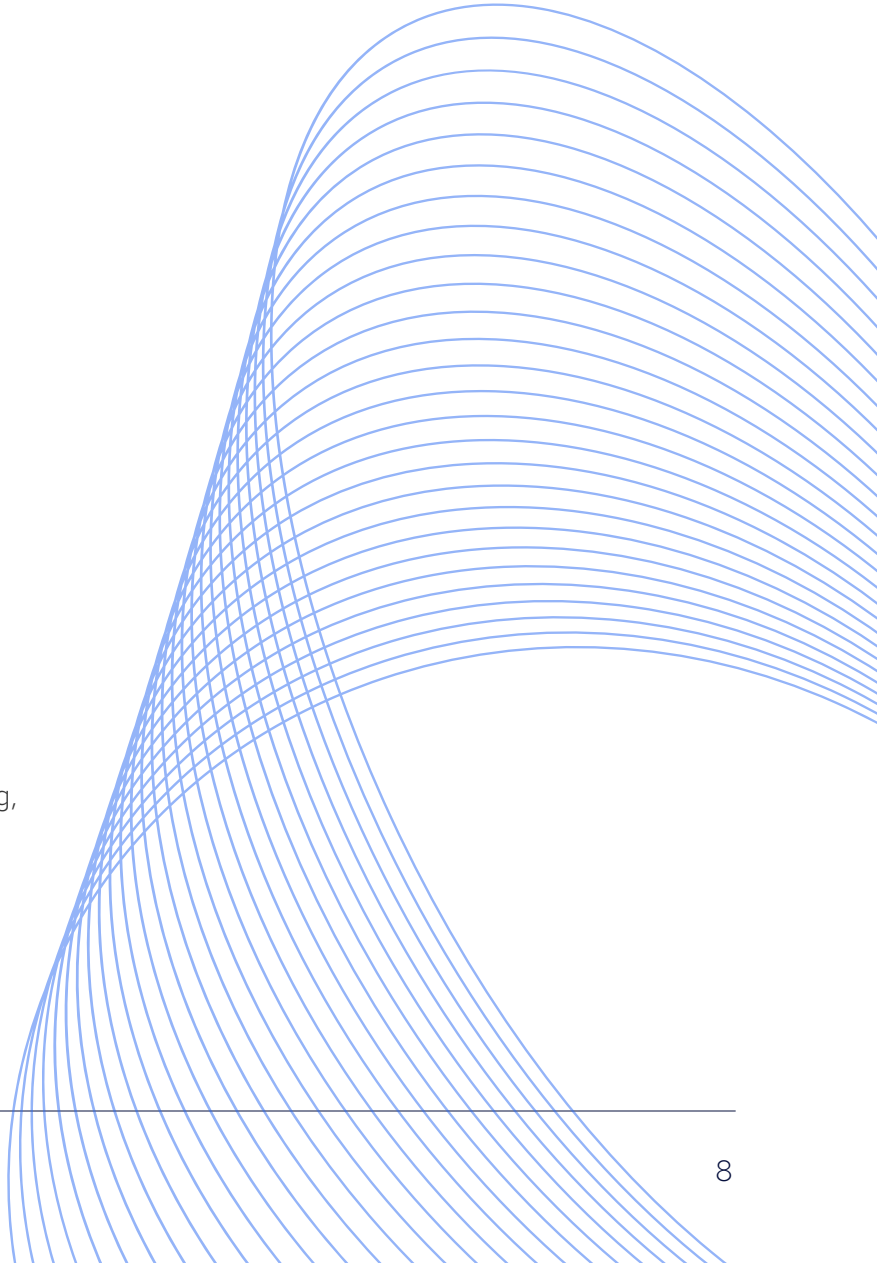
Airlines have also started outreach programs to present aviation as an attractive career choice, encourage interest in flying as a career and bolster science, technology, engineering and mathematics (STEM) education efforts. Furthermore, some airlines, ANSPs and training organizations are considering mentorship programs to provide additional support throughout the training journey.

CAE continually seeks new and innovative ways to inform and encourage people to consider a career in aviation. This includes partnering with multiple industry stakeholders to provide training, mentorship and job opportunities.

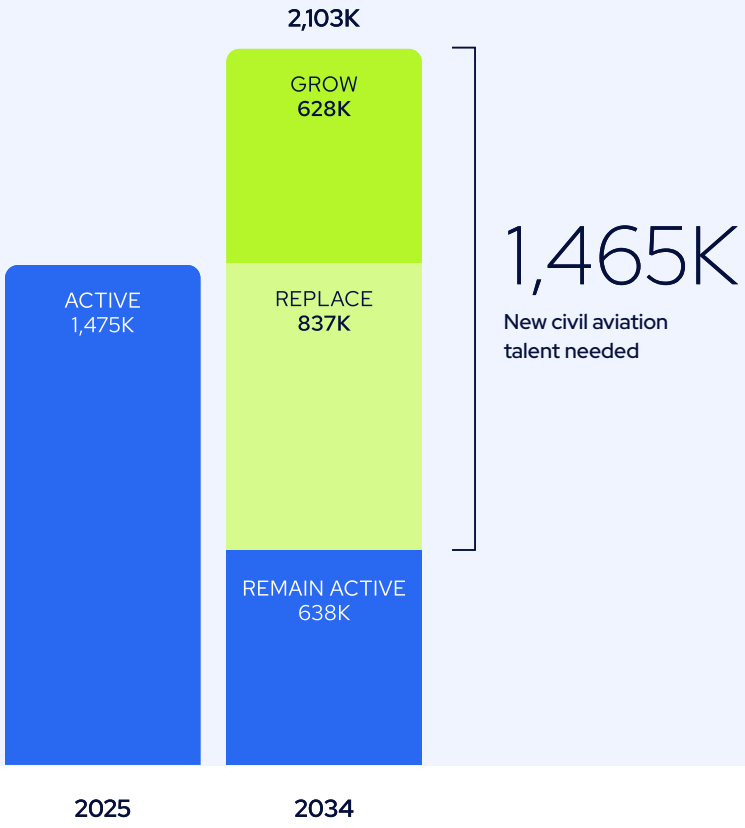
Investing in the development of high-tech solutions to make training more efficient and engaging, while enhancing safety, is necessary.

Online learning tools, effective course scheduling and curriculums, and a worldwide network of training centres allow aviation professionals to spend less time travelling to and from training, and more time learning the skills needed to perform at their best.

Before we get to recruiting and training, let us take a closer look at the numbers.



Aviation talent forecast by the numbers



1,292K
New commercial aviation professionals needed

102K
New business aviation professionals needed

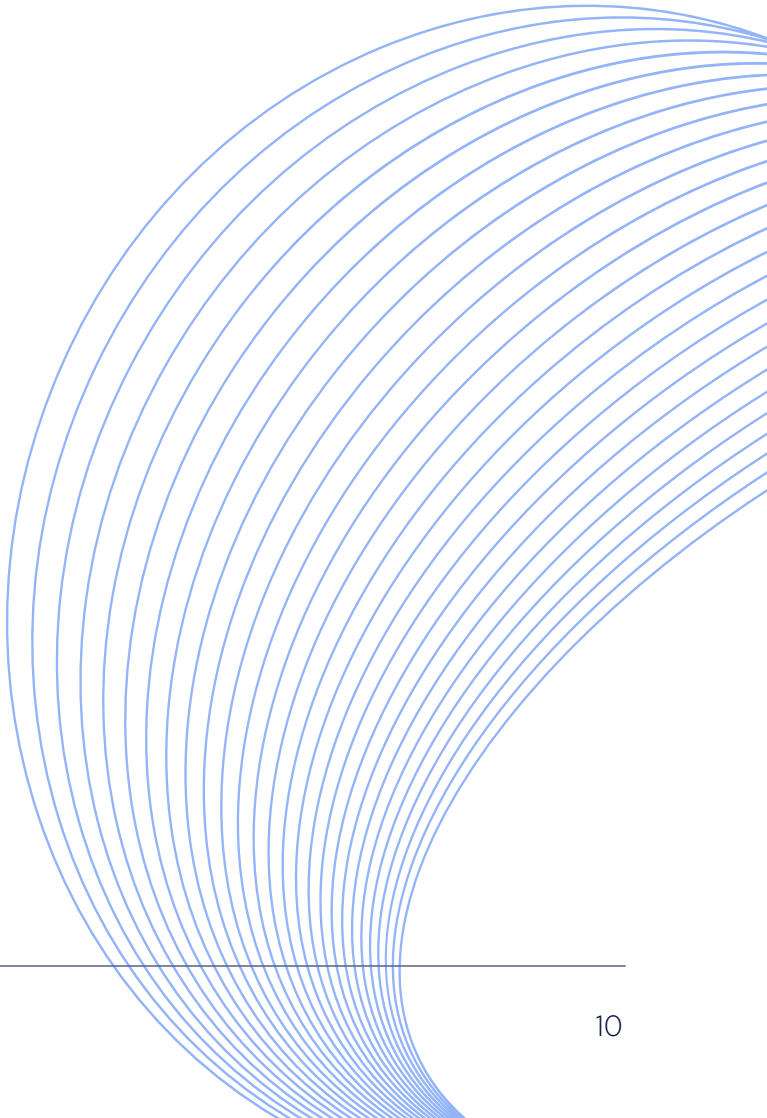
71K
New air traffic professionals needed

Our methodology

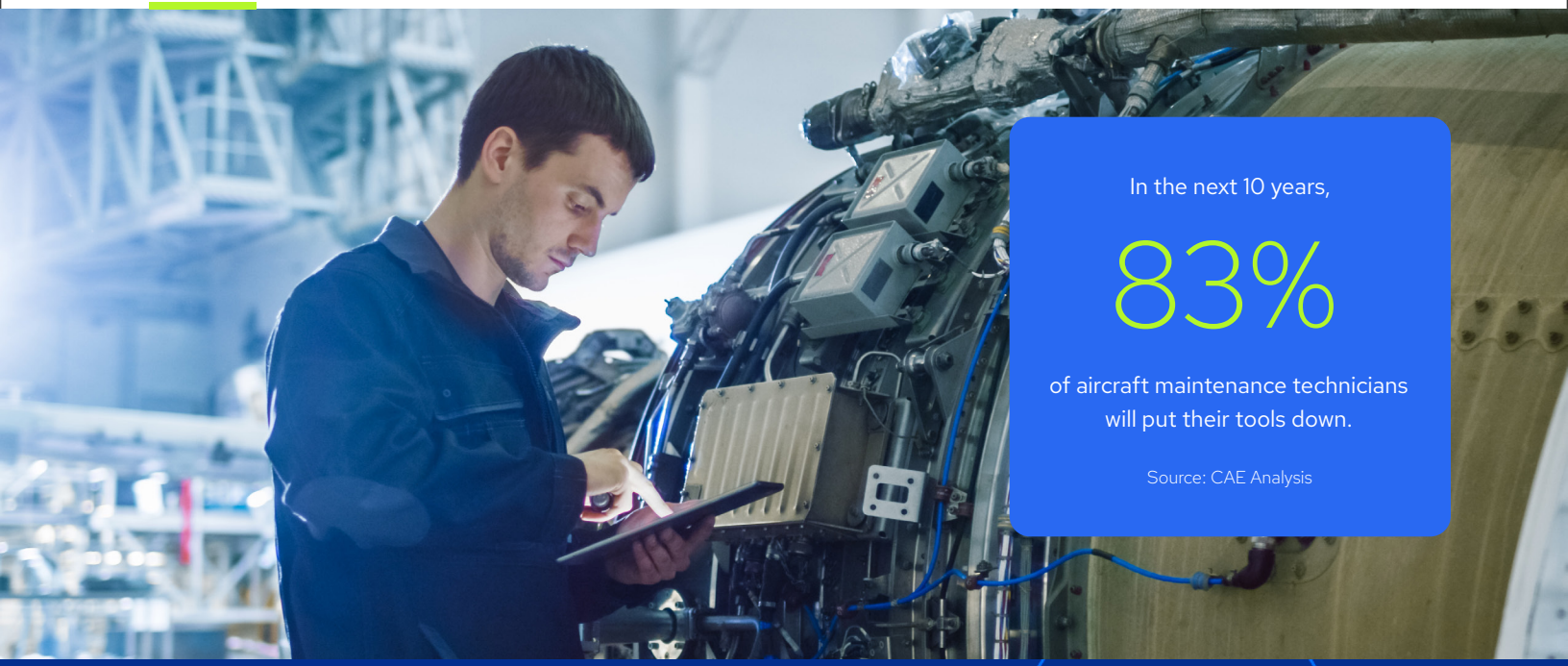
To forecast demand over the next decade, we first looked at the current commercial and business aviation aircraft fleets, calculating the pilots and cabin crew required when flying these planes. Then, we looked at forecasts of fleet changes (both new deliveries and retirements of older aircraft) and calculated the number of additional personnel required for anticipated fleet growth. Finally, we used estimated retirement and turnover rates to calculate the personnel required to replace those retiring or leaving the industry.

For maintenance technicians, we based our analysis on scheduled maintenance events for each aircraft considering their usage and age. This gave us the total number of events, and we then calculated the time required to perform the maintenance tasks and the number of personnel required to complete them.

For air traffic services personnel, we researched existing ANSP staffing reports, agency records, and technology capabilities to build a database of current staffing. We then developed a staffing model based on growth in flights to calculate the number of additional air traffic controllers needed. We then looked at demographics to calculate retirements and attrition. We used estimated retirement and turnover rates to calculate the personnel required to replace those retiring or leaving the industry. Finally, we added the understaffing of ANSPs to our calculation to determine the number of air traffic controllers required over the next 10 years.



Trends, challenges and opportunities



In the next 10 years,

83%

of aircraft maintenance technicians will put their tools down.

Source: CAE Analysis

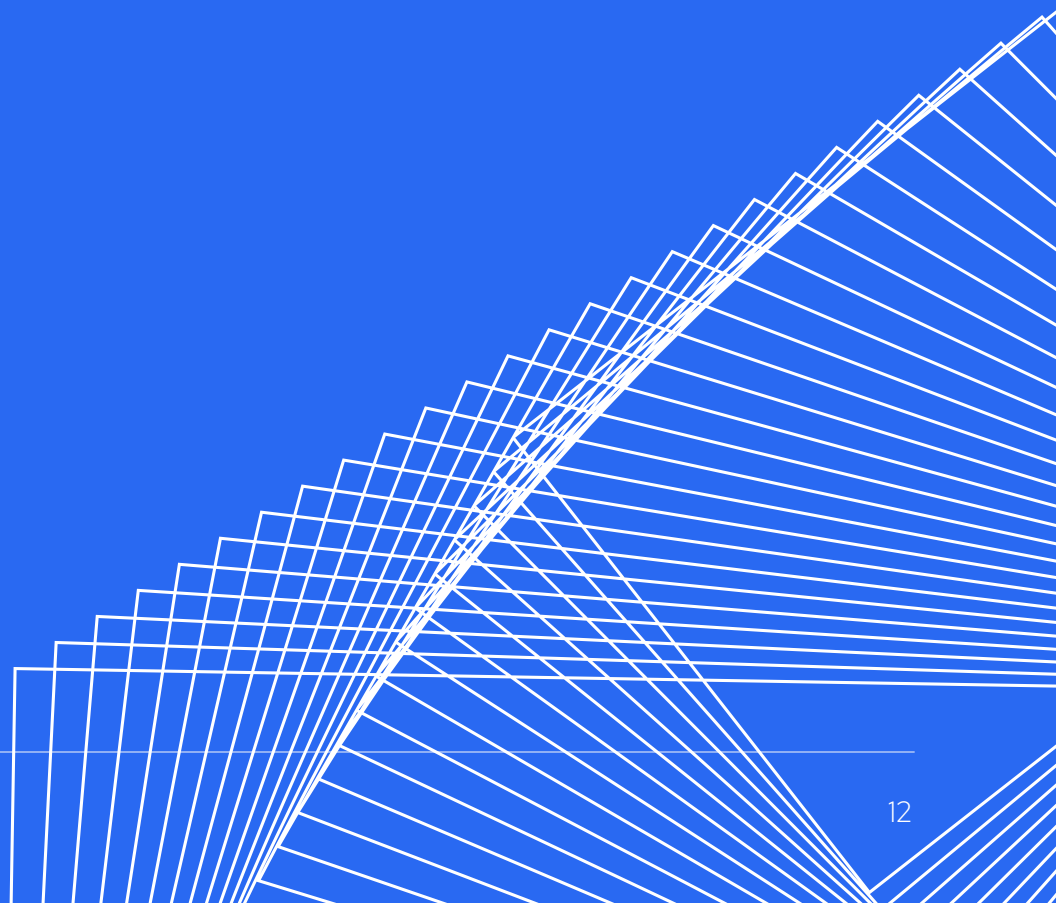
Over the next 10 years, approximately 50% of pilots worldwide will be new to the profession. As retirements and attrition increase, there is an opportunity for the industry to find innovative minds to join its ranks and develop new technology that will improve current workflows.

A new generation will begin their aviation careers, bringing new perspectives and finding ways to improve and optimize the way the industry operates. A smooth transition could be supported by a thoughtful combination of new ideas and flexible approaches, helping to create learning experiences that are engaging and accessible for a variety of learning styles.

Commercial aviation

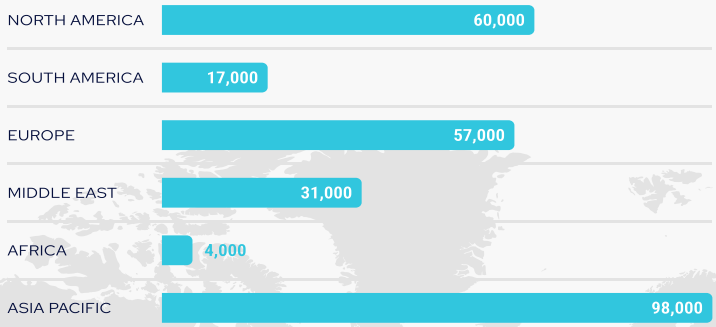
As a cornerstone of global connectivity, aviation is essential for international business and tourism, and makes a significant contribution to economic growth. The civil aviation sector creates employment, promotes trade and boosts both business and leisure travel, among other benefits. The aviation industry supports 86.5 million jobs globally and generates $4.1 trillion (USD) of economic activity and supports 3.9% of the world's gross domestic product (GDP).

For added perspective, if aviation were a country, its GDP would rank 5th in the world, comparable to that of Japan or India[6].

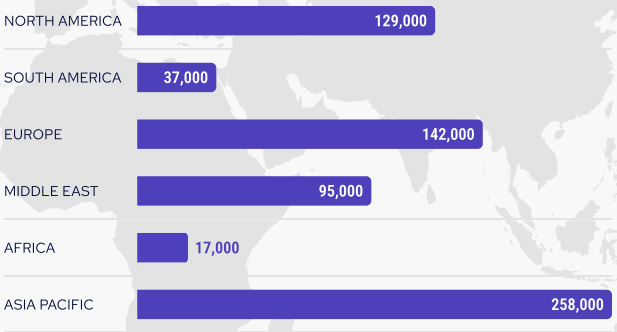


Commercial aviation talent demand per region

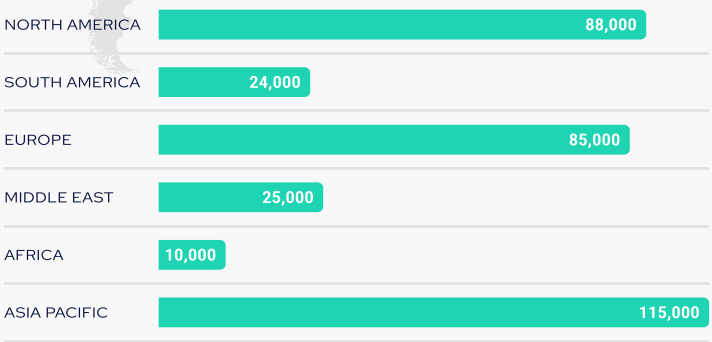
Pilots



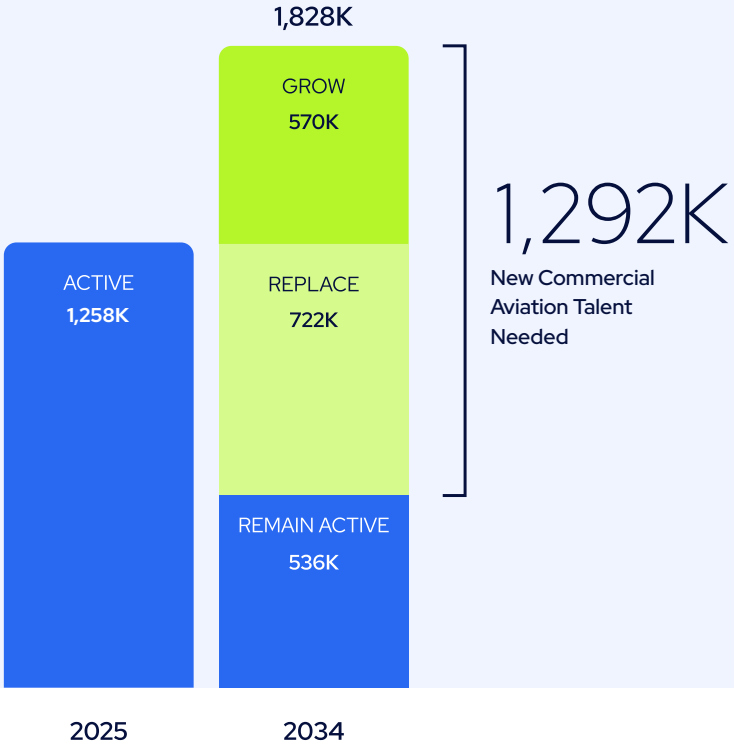
Cabin Crew

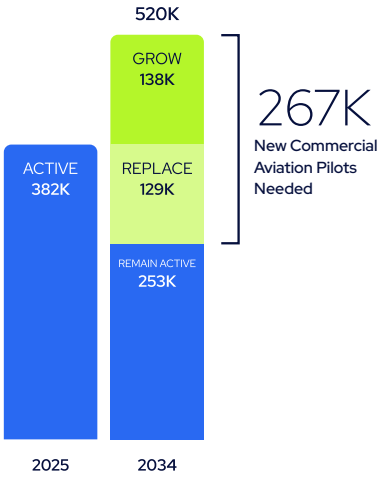


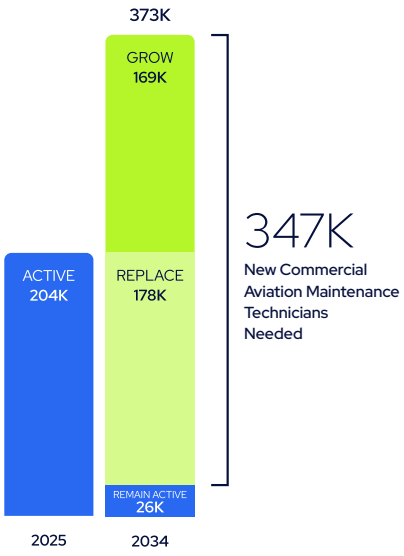
Aircraft Maintenance Technicians

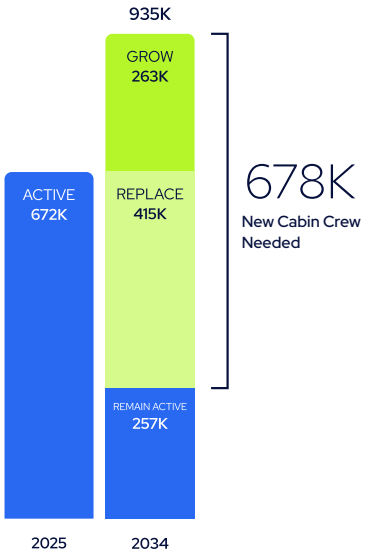


Commercial aviation by the numbers









Supply chain challenges

Post-pandemic supply chain issues continue to affect the aviation industry. Delays are starting to ease, but challenges will likely continue up to 2026, at a minimum. The commercial aircraft supply chain faces disruptions linked to material shortages, production issues, engine inspections, labour shortages and strikes. Delivery delays and unplanned aircraft downtime have limited some airlines' ability to maintain efficient operations and to expand at the desired pace. This creates an additional layer of difficulty to airline operations and cost management, which includes the staffing of aviation personnel.

As part of a broader strategy to return to pre-crisis production levels, Boeing has increased aircraft production rates in early 2025 and Airbus is targeting 2025 aircraft deliveries to surpass 2024 levels[7]. Based on Forecast International's 2025 production estimates, it will take roughly 11 years to deliver the existing backlog[8]. While aircraft fleet growth remains consistent, the impact of current geopolitical factors remains yet to be seen.

As a result of these supply chain challenges, commercial airlines are mixing aircraft fleets to provide different route structures and options to their passengers. This mix is a combination of wide-body, narrow-body and regional aircraft for optimal capacity and efficiency. Other existing challenges could impact future passenger and corporate plans, but there is general optimism surrounding the industry's continued growth.

Record high demand

Global air travel demand soared to a record high in 2024. Total full-year air traffic in 2024, measured in revenue passenger kilometres, rose 10.4% versus 2023 and 3.8% above 2019 pre-pandemic levels. Total capacity in 2024, measured in available seat kilometres, was up 8.7% versus 2023. Domestic air travel demand is nearly 10% above 2019 levels, while international air travel demand is approximately 1% below 2019 levels[9].

According to IATA, the outlook is positive.

> **"2024 made it absolutely clear that people want to travel. With 10.4% demand growth, travel reached record numbers domestically and internationally. Airlines met that strong demand with record efficiency. On average, 83.5% of all seats on offer were filled – a new record high, partially attributable to the supply chain constraints that limited capacity growth. Aviation growth reverberates across societies and economies at all levels through jobs, market development, trade, innovation, exploration and much more[9]."**

Low-cost carriers powering growth

Low-cost carriers (LCCs) have gained increased popularity in recent years by offering more economical flights that appeal to younger travellers with less disposable income. By sticking to the essentials of travel and allowing passengers to pay for extras like Wi-Fi or preferred seating,

LCCs are gaining appeal among budget-conscious travellers.

LCCs enjoy the largest market shares in Brazil, India, Indonesia and Italy, demonstrating the global relevance of the business model. LCCs meticulously examine their fleet and their operations to find ways to reduce their costs per passenger.

LCCs have stepped in where legacy airlines cannot meet market demand. LCCs have further promoted the expansion of commercial aviation by penetrating emerging markets and stimulating economic growth in certain regions.

Air cargo growth remains strong

The rise in popularity of e-commerce during the pandemic resulted in a surge in demand and consistent growth for the air cargo segment. In 2024, full-year air cargo demand rose, with cargo tonne-kilometres increasing 11% year over year. Cargo revenues are expected to reach $157 billion (15.6% of total revenues) in 2025. Demand is likely to grow by 6.0% with an average yield adjusting downwards by 0.7%, remaining well above pre-pandemic levels[9].

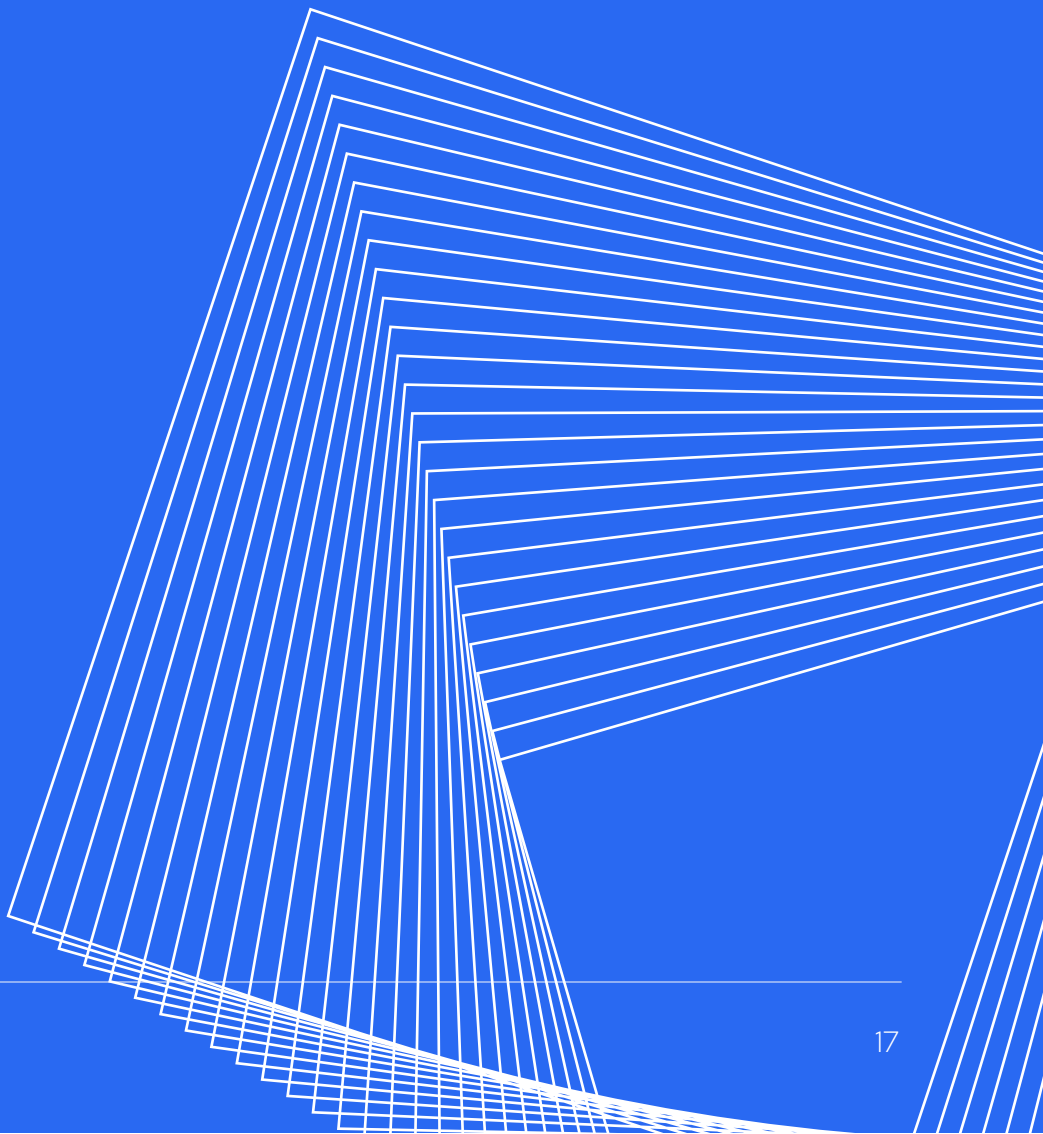
Growth trends

Mature aviation markets continue to grow on a global scale. Asia-Pacific is a growing market with strong demand for air travel. Economic growth, an expanding middle class and rising disposable incomes are driving higher demand for air travel in this region. India, China and Southeast Asia are leading this surge, encouraging infrastructure investments to meet the demand and foster consistent growth.

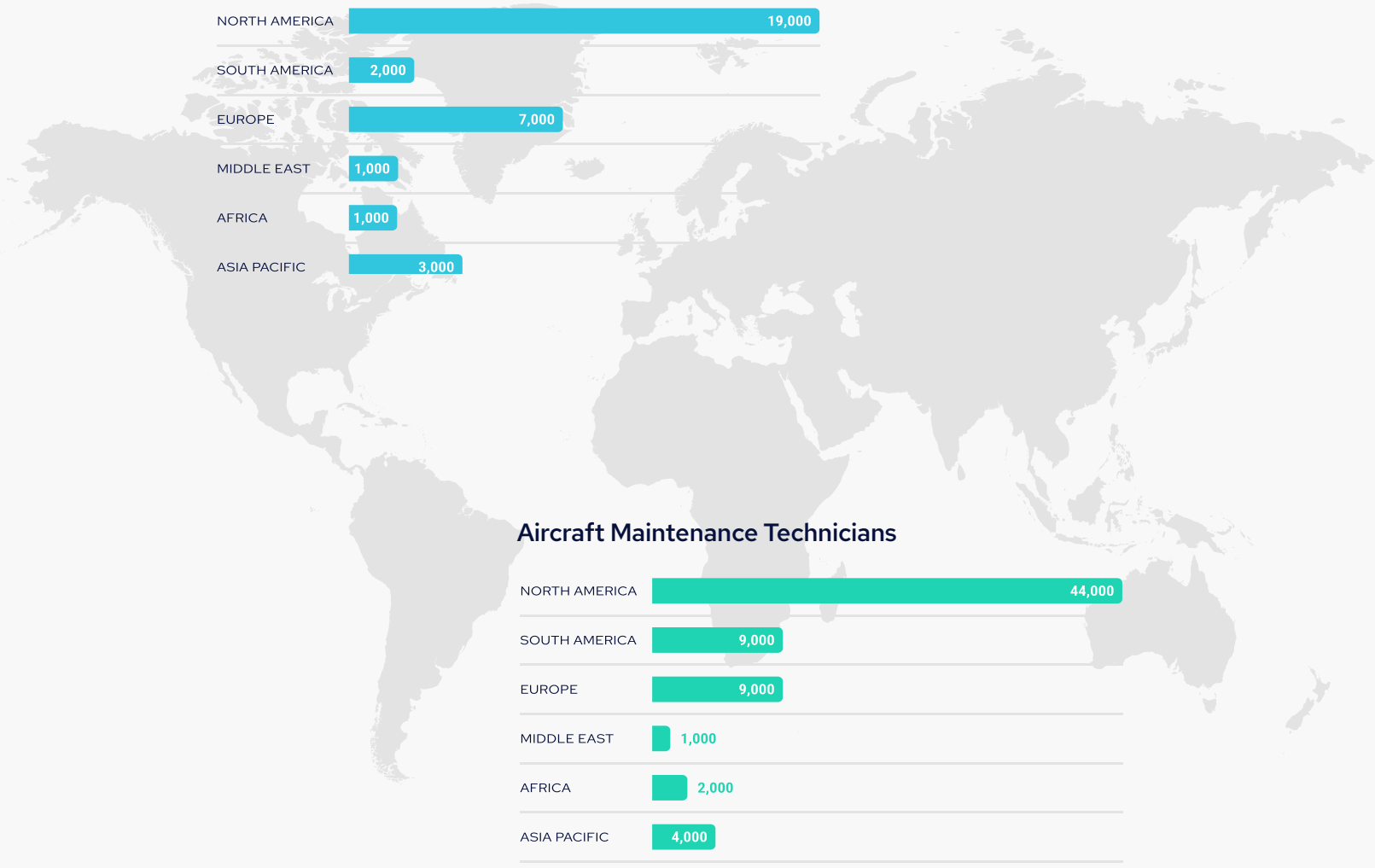
In addition to recently becoming the world's largest country by population, India had one of the fastest growing economies over the last three years (+8%[10]). Local airlines have placed massive aircraft orders to prepare for the increase in demand, resulting in a backlog of over 1,900 aircraft for the country. The in-service fleet is expected to triple over the coming decade. According to India's Civil Aviation Minister and the Directorate General of Civil Aviation, notable Indian airlines will require approximately 20,700 pilots over the next 10 years[11].

Business aviation

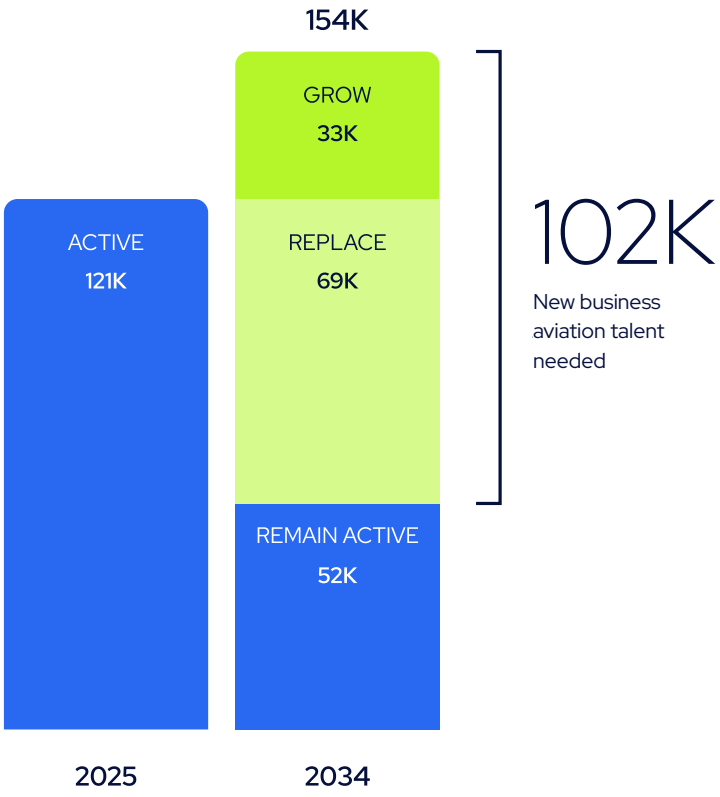
Business aviation has seen sustained growth in recent years and continues to blaze a trail for high tech in aviation. The global business jet market was worth $34.9 billion in 2024 and is projected to grow to $55.1 billion by 2034, with an annual growth rate of 4.8% from 2025 to 2034[12]. The increased demand in business aviation has motivated that sector to ramp up deliveries and develop innovative new aircraft. The latest business jets feature advanced technology and improved performance to meet the needs of operators.

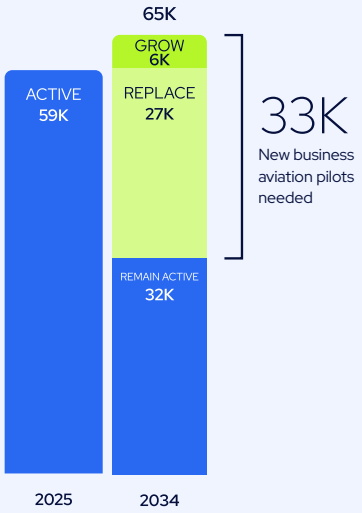


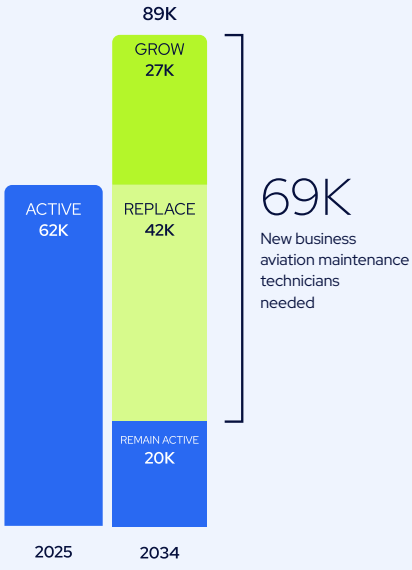
Business aviation talent demand per region



Business aviation by the numbers







Sustained growth and convenience

Passengers who turned to business aviation as a primary means of travel during the pandemic continue to support the sector. Flights in the U.S., the largest business aviation market worldwide, remain 15% higher than 2019[13]. Business aviation boomed in 2021 and 2022, when private aircraft offered enhanced safety and privacy. These new customers continue to use business aviation for its convenience, time savings and access to smaller, less congested airports.

Rise of fractional aircraft ownership

Alternative ways to access business aviation have grown, especially fractional ownership, which allows customers to purchase a share of an airplane, giving them the benefits of ownership without the cost and burden of operating the aircraft. Worldwide, fractional aircraft flights increased 10% in 2024 versus 2023 and are up 60% from 2019[14]. Large fractional operators function like airlines, with pilots and maintenance technicians on staff to maintain and operate their fleet for customers.

Business jet technology innovations

Modern business jets feature new avionics, enhanced aerodynamics, and engines that improve fuel efficiency and cost-effectiveness. Business jet manufacturers are working to reduce the environmental impact of business jet flights, which has attracted increasing attention and threats of flight restrictions, especially in Europe. Business jet operators are increasingly incorporating Sustainable Aviation Fuel (SAF) into their operations to reduce carbon emissions.

Luxury business aviation growth

Business aviation offers high net worth individuals and executive clients enhanced comfort and the latest amenities, including in-flight connectivity, and innovative cabin technology. The number of high-net-worth individuals (HNWIs) increased by 5.1% in 2023[15]. While North America posted the highest increase, the Asia-Pacific region also presents a large and growing population of HNWIs. This will bring growth to the business aviation market with increasing deliveries and flight activity, especially in the large cabin classes.

Of the world's active business aviation fleets

66%

are located in North America

Source: Aviation Week Forecast

Air traffic services

Air traffic control (ATC) is crucial to the air traffic system, ensuring the safe and efficient movement of aircraft in the air and on the ground. ATC services manage the flow of air traffic, preventing collisions, and coordinating takeoffs and landings. ATC plays a central role in handling emergencies, providing pilots with critical information and ensuring flights reach their destinations safely.

As global air traffic continues to increase and air traffic management becomes more complex, the need for well-trained ATC professionals is essential. The demand for ATC personnel persists, with many ANSPs in North America, Europe, Southeast Asia and Australia reporting current demand for hundreds, if not thousands, of additional personnel. The lengthy and complex training process can take up to four years to complete, depending on the country and regulations, an additional hurdle to filling positions. Additionally, a mandatory retirement age, which ranges from 56 to 65 depending on the region, leads to a steady outflow of experienced personnel. In some cases, high stress levels and demanding work schedules also contribute to early retirements.

Air traffic controllers handle

100K

commercial flights daily

Source: OAG Aviation Worldwide Limited

Where to find talent

The success of the aviation industry depends on the people who bring it to life every day. The forecasted rates of retirement for all four disciplines are a call to action for concrete steps to recruit and train new aviation professionals.

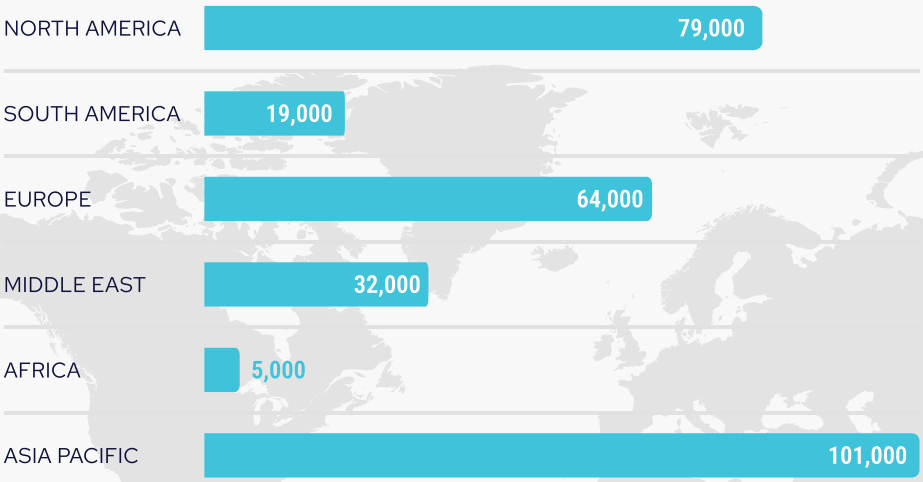
Highly skilled professionals are required to operate safely. It is not only necessary to pique the interest of the next generation to join the industry, but to ensure they have the motivation and the tools to achieve this goal. Financial assistance and access to dedicated programs are examples of how the industry can support the quick and efficient training of people looking to pursue a career in aviation.

While the number of aviation professionals required to meet the demand may seem overwhelming, the industry is finding ways of recruiting people from different backgrounds through:

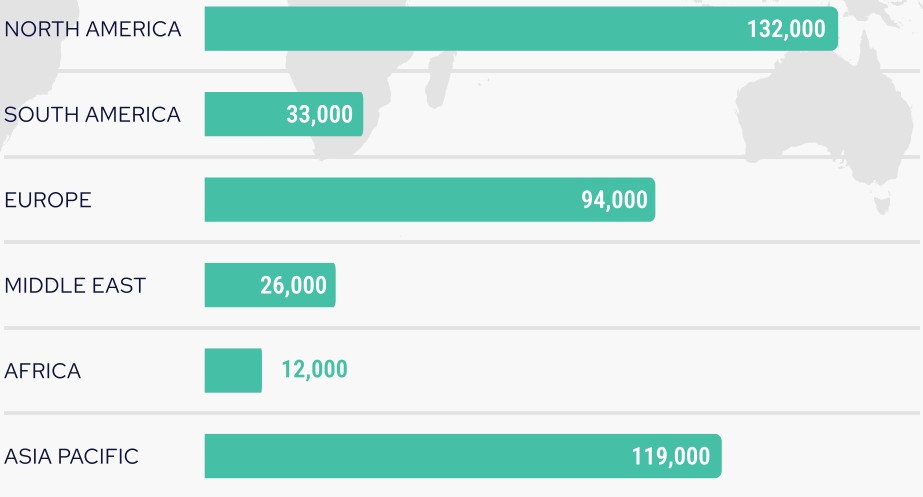
- Digital marketing (on Facebook, LinkedIn, Instagram, Indeed, X, etc.)
- Job and career fairs
- Special programs and recruitment campaigns
- Airline and operator partnerships
- STEM programs and early college recruitment

Aviation professionals needed per region

Pilots

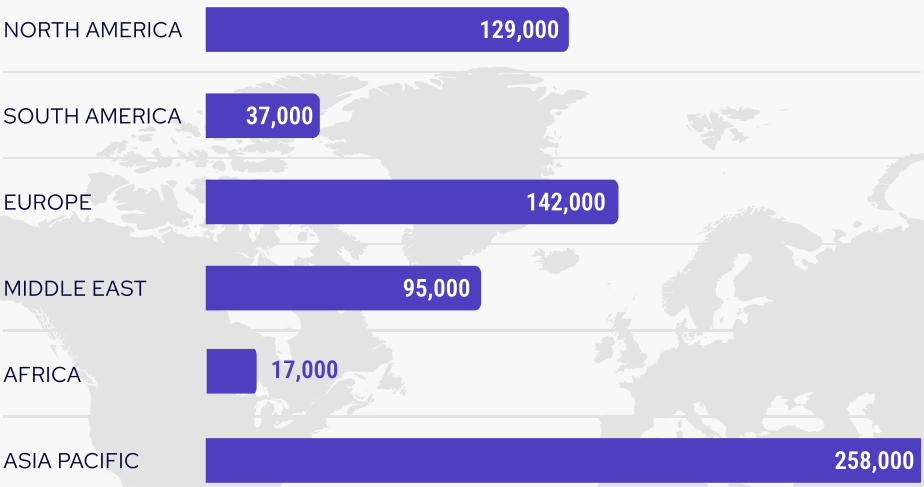


Aircraft maintenance technicians

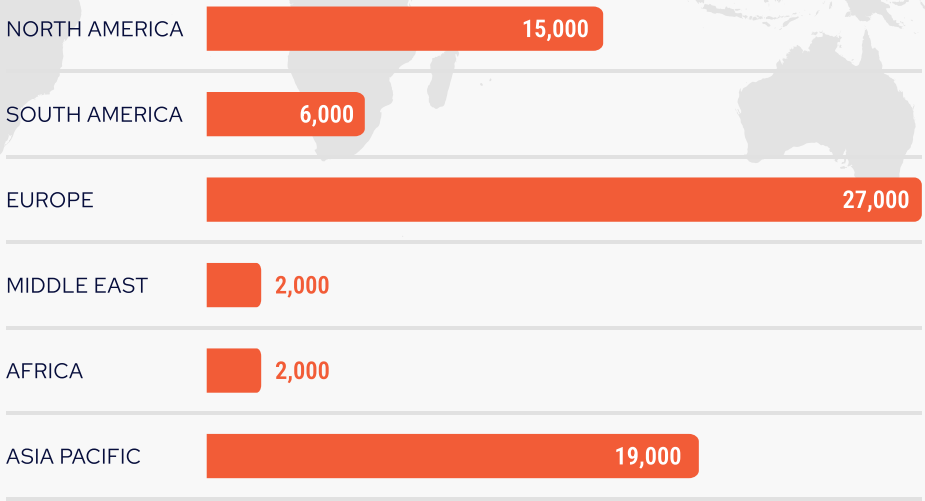


Aviation professionals needed per region

Cabin crew



Air traffic controllers



The pilot's journey

Every day brings a new adventure when you are a pilot. You will be at the helm of incredible journeys, ensuring the safety and comfort of your passengers while exploring the world from a unique vantage point.

The aircraft maintenance technician's journey

Dive into the intricate world of aircraft systems, where your expertise keeps planes flying safely and efficiently. From troubleshooting complex avionics to performing precision repairs, you will play a vital role in the aviation industry, ensuring every flight is operated on a well-maintained aircraft.

The cabin crew journey

Your role is crucial in ensuring passenger safety and comfort. You will get to travel to interesting destinations and meet fascinating people from all walks of life, while making every flight memorable and enjoyable.

Legend:

TYPICAL JOURNEY

MENTORSHIP OPPORTUNITY

FINANCIAL AID

Become cabin crew

Earn certification

Attend airline training

Receive conditional job offer

Conduct interview process

Complete training programs

Apply for positions

Research airlines

Meet basic requirements

The air traffic controller journey

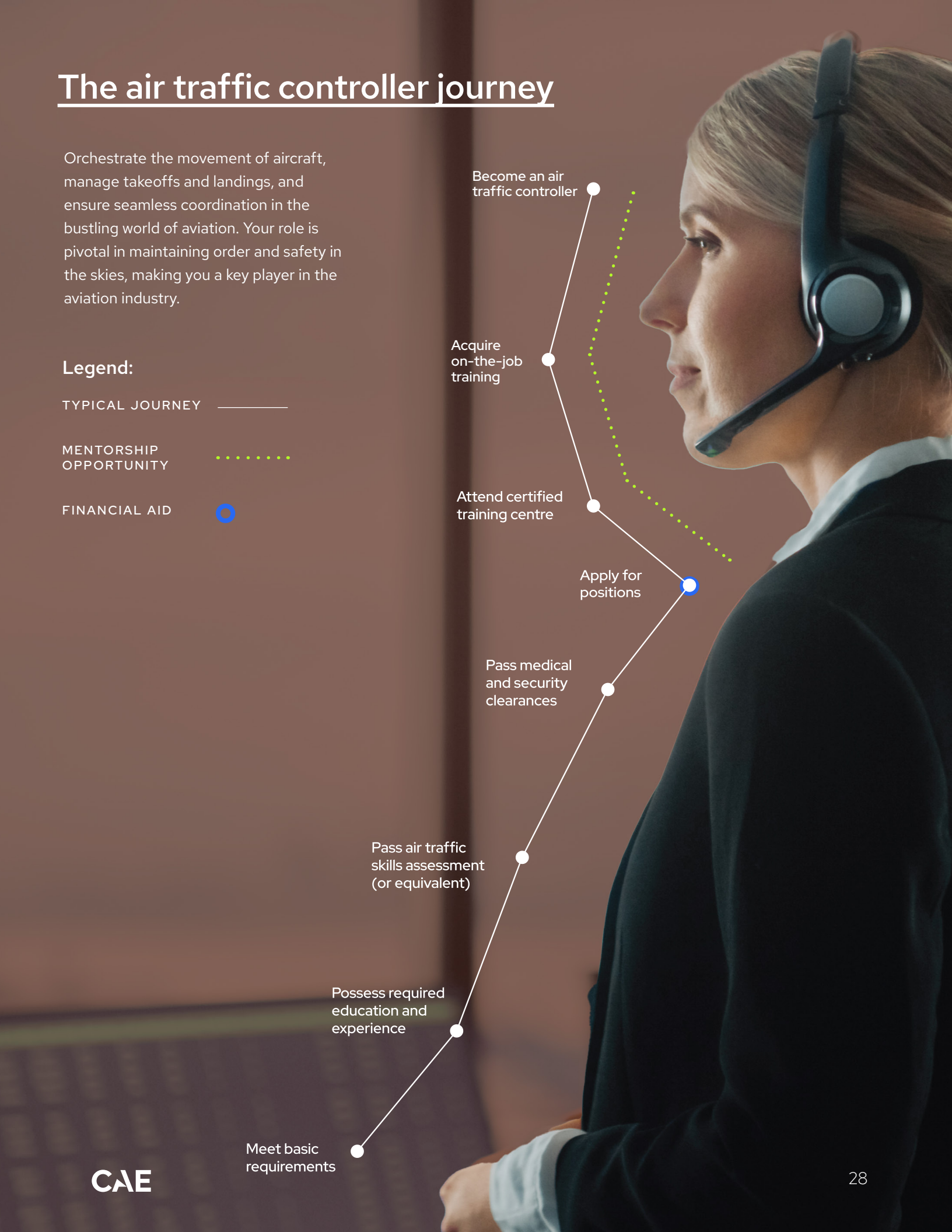
Orchestrate the movement of aircraft, manage takeoffs and landings, and ensure seamless coordination in the bustling world of aviation. Your role is pivotal in maintaining order and safety in the skies, making you a key player in the aviation industry.

Legend:

TYPICAL JOURNEY

MENTORSHIP OPPORTUNITY

FINANCIAL AID



Hear from those whose careers took flight...

Carl Zoch, Pilot

Lear 60/60XR Instructor/
SFE/TCE, CAE

Follow your passion and the rewards will follow

"I come from an Air Force family, so flying has been in my blood from the start. In my 33-year career, I have never seen a demand for pilots and aircrews as high as I have today. I would encourage candidates to consider all options of flying, from airline to corporate, firefighting to medevac, commercial to private. I have done it all and my chosen favorite is medevac/corporate. The challenge comes daily, and the excitement is in the destinations and people. As the old saying goes, 'Follow your passion and the rewards will follow.' And the office view isn't bad, either!"

Nicola NiRiada, ATC

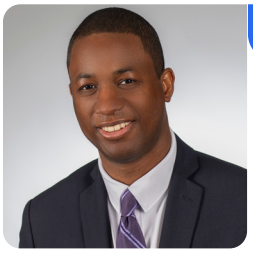
Air traffic controller,
AirNav Ireland

An amazing, dynamic sector with so much opportunity

"My dad was an air traffic controller, and I always wanted to go into the aviation sector. Who does not want to be part of helping people see the whole world? Connecting places and people for work and for pleasure, keeping the flying public safe – it's the best job in the world!

Every day is different. You learn something new every day, and you work with the very best people. Safety is the first priority of air traffic control. Having enough staff is a vital part of safety/fatigue management and well-being. Our sector is growing year on year, and we need to keep up with that demand.

My advice for someone thinking of a career in aviation: Go for it! It's such an amazing, dynamic sector with so much opportunity."



Andrew Barnett, Pilot

Product Marketing Manager, CAE

Keep an open mind and enjoy the journey

"As a young boy, I was always fascinated with the idea of flight. I was fortunate enough to obtain my private pilot license in high school and continue flight training throughout university. My passion for aviation has led to an amazing career from planning and designing airports to marketing complex aerospace products globally. I encourage anyone with an interest and curiosity in aviation to simply start, keep an open mind, learn as much as you can and enjoy the journey."

Andrew Vaisar, Maintenance Technician

Leader – Maintenance Training Operations, CAE

A journey of personal and professional growth

"Passion for aviation has been my driving force in this field. The evolution of aircraft over a century is truly remarkable. Starting with a desire to explore the world, my 20-year journey in aviation has brought me invaluable experiences, challenges, rewards and enduring relationships.

In pursuing opportunities, remember that the best ones may not always be obvious. Stepping out of your comfort zone can lead to unique experiences that propel your career forward. Reflecting on my past, I cherish the lessons learned, shaping my path for the next phase of my career.

Embrace the unknown, seize opportunities and let your experiences guide you."

Zoe McCurry, Cabin Crew

General Manager – Cadet Support Europe, CAE

A journey of personal and professional growth

"Being a cabin crew member is an incredibly rewarding role that offers unique experiences and invaluable skills. Every day brings new challenges and opportunities, and the dynamic nature of the job means that no two flights are ever the same, keeping things exciting and fresh!

Throughout my career, I've learned to effectively manage a wide range of situations, from providing exceptional customer service to handling emergencies calmly and efficiently. Additionally, I've developed essential business skills in organization, prioritization, meeting strict deadlines, influencing and negotiation.

Overall, being a cabin crew member is more than just a job; it's a journey of personal and professional growth. The skills and experiences I've gained have been invaluable, providing me with the foundations to build my aviation career."

Raquel Mora, Cabin Crew

Group Leader, Cabin Training, CAE

My temporary job became my passion

"I started my career as cabin crew by chance. I was looking for a temporary job for the summer while I was at university. My 6-month temporary job became my passion and my lifestyle for 25 years, and still is today.

Working as cabin crew allows you to discover skills you didn't know you had and to improve them (such as empathy, assertiveness, resilience), to work in a changing environment that doesn't let you get bored, to discover other cultures and countries and to be close to other people all the time.

It is a beautiful job in which you share time with many different people, often in beautiful parts of the world. But you must be aware that there is more to it than what people see. It is a role that involves a lot of skills and knowledge, especially in human factors. You are aware that you are responsible for other human lives in often stressful environments. For me, the best part of the job is when the day is over and you are sharing laughs and camaraderie with the crew, commenting on what you have experienced on that flight, sometimes in some beautiful place in the world. Then I think, 'Do I get paid for this?'"

What can be done to supply the demand

To meet this demand, the industry will need to be proactive and creative in showing that a future in aviation is possible and accessible. The following actions provide a solid start:

1. Add mentorship opportunities with experienced pilots (active or recently retired) to complete the pilot training program to provide support, motivation and guidance to help young pilots throughout their journey. The knowledge and insight that seasoned pilots can provide could make training seem less daunting and more achievable. This approach also applies to cabin crew, aircraft maintenance technicians and air traffic controllers.

2. Create pathway programs that target potential candidates earlier in their education and inform them of various roles and career progressions. Take time to visit high schools, colleges and universities to share testimonials that can inspire others to pursue careers in aviation.

3. Incorporate more technology to make training more engaging, adaptable and relatable to younger generations. Not everyone learns the same way. Provide more options for immersive training to improve the overall training experience. Showcase the latest innovations in augmented reality (AR), virtual reality (VR) and artificial intelligence (AI) that will lead the way in the future.

4. Align compensation strategies with the evolving expectations of the next-generation workforce to entice more candidates to apply and encourage existing personnel to stay. Perks could include enhanced benefits, access to resources and support for personnel throughout their training and beyond.

5. Accelerate development through competency-based training and assessment. Use simulation to create competency levels through experiences that would otherwise take decades for a new pilot to acquire in routine flying.

6. Offer more financial support programs and opportunities to make training more accessible. While there are a growing number of Maintenance, Repair and Overhaul scholarships, more are needed to entice people to apply. Additional educational and industry partnerships are also needed to attract the number of candidates needed to meet upcoming demand.

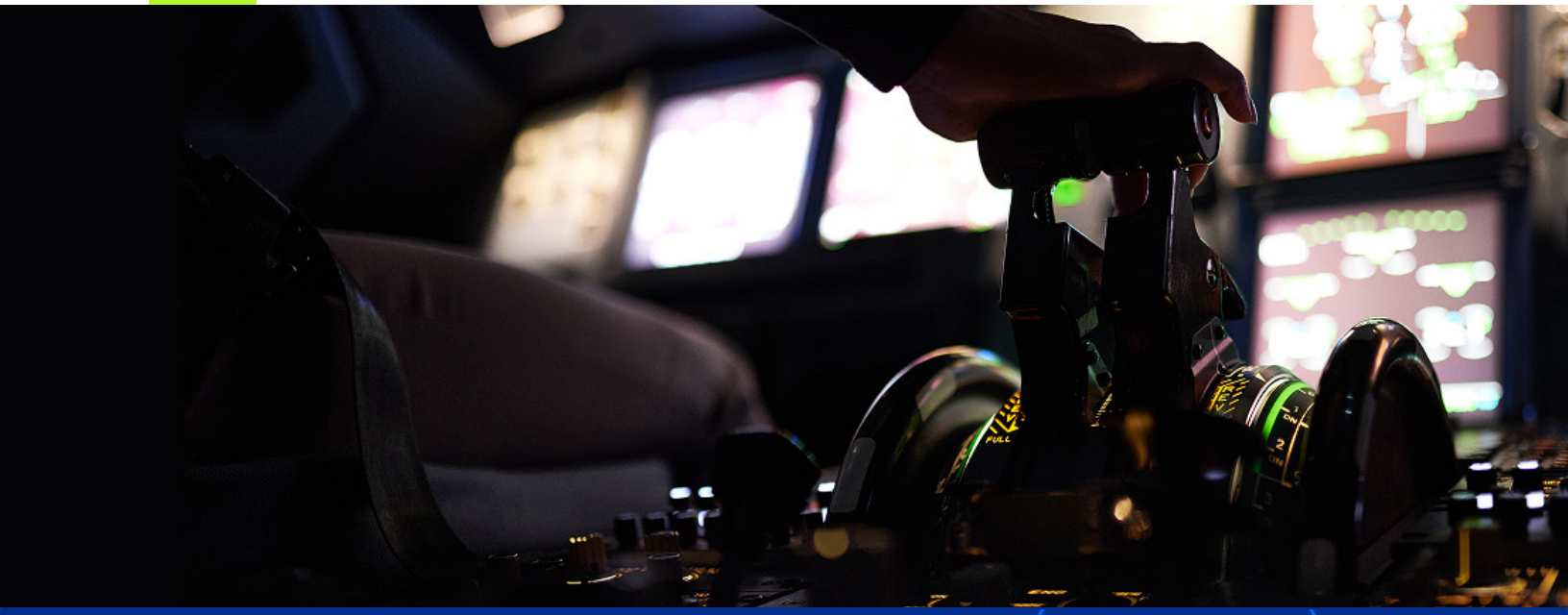
7. Improve opportunities for those seeking to begin a career in aviation, especially for pilots. Pursuing a career as a pilot can present financial challenges for many aspiring individuals. Additionally, age considerations can influence opportunities in certain aviation roles, as preferences vary by region and employer.

8. Continue development of hands-on, well-rounded training programs for aircraft maintenance technicians to enhance retention and success rates. This may contribute to more balanced workloads and promote efficient distribution of maintenance tasks.

9. Implement a rigorous selection program based on data and metrics to help identify candidates who are better suited for the pressure air traffic controllers face on the job. Provide access to stress management programs that will give air traffic controllers the necessary tools to better deal with high pressure situations.

10. Embrace partnerships with training organizations to increase the effectiveness of recruiting, training and retaining aviation professionals, including instructors. By forming partnerships with Approved Training Organizations, operators can focus on their core competencies. They gain agility and flexibility, while minimizing operational risk.

Shaping the future of aviation



Training the personnel of the future

The future of aviation will be defined by how the next generation is trained. We need a comprehensive training environment that caters to the way new generations learn and thrive. The industry wants to attract candidates who can do the job, but must provide tools and mentorship from recruitment to graduation and beyond.

Demystifying aviation careers

It is important to review and modernize the training programs and tools available, but it is also important to be transparent about what candidates can expect on the job. Working in aviation often seems prestigious and some jobs are glamorized; however, the focus should be on showcasing what it truly takes to become a pilot, cabin crew member, aircraft maintenance technician or air traffic controller. If applicants know what is expected of them, they can mentally prepare for their training. The recommended approach is to clearly outline growth and career paths to show the benefits of a career in aviation.

Testimonials on the challenging and rewarding aspects of the jobs can also be effective in recruitment.

Women in aviation

The future of aviation hinges on welcoming change and increasing the number of women in the industry. Currently, 11% of the 849,000 FAA-registered pilots of all categories are women and 5% of the 174,000 Airline Transport Pilot-rated pilots are women. Only 3% of FAA-registered mechanics and repair personnel are women[16]. However, that number is set to increase, as 6.7% of new certified technicians from aviation maintenance technician schools are women[17].

Women represent

79%

of the world's civil aviation cabin crews

Source: Women In Aviation International

Harnessing technology

This is an exciting time to be in aviation, as we are witnessing its future take shape right before our eyes.

AI and machine learning (ML) offer much promise and are beneficial in human oversight, which is how they are being used in the aviation industry. AI and ML are currently helping the industry on multiple fronts.

Training: Innovative simulators create an immersive training experience for pilots and AI-based training tools create virtual environments for aircraft maintenance technicians to learn complex procedures faster. Dynamic and engaging training will help attract a younger generation to the aviation industry.

Operations: AI and ML are being used in airline operations to predict when corrective maintenance may be required to avoid a more serious incident. They are currently being leveraged for flight optimization to ensure that the best flight path is taken and the least amount of fuel is consumed.

Sustainability: The use of AI and ML can help aviation reach targeted sustainability goals by reducing fuel consumption through route optimization, which leads to reduced carbon emissions.

AI and ML aside, technology has been leveraged to amplify the way companies train talent. CAE provides both in-person or remote access to courses and workshops through eLearning and immersive VR experiences that perfectly simulate training for pilots, cabin crew and aircraft maintenance technicians.

AR and VR are new technology tools that will help us make training more accessible for the next generation. This technology could revolutionize pilot training by using spatial computing to bring true-to-life precision to flight deck interactions. AR and VR could allow pilots to complete certain parts of training, like flight deck familiarization, using a VR headset at home. This could reduce time spent at a training centre and increase the efficiency of training. This technology will be a game changer in aviation training environments, not only for pilots but also for maintenance technicians.

Ensuring that students can have access to training anytime and anywhere is a goal for many ANSPs. The flexibility gain would contribute to reducing costs and increasing practice time for better integration of skills and knowledge. Air traffic management is also currently going through a transformation and, although a lot of technological advancement will happen in the next decade, most of the efficiency gains in staffing are expected to materialize in 10 years or more.

There is plenty to get excited about when it comes to creating training environments that are conducive to success. By embracing innovation and adapting to changing demographics, the industry will be equipped to train the next generation of aviation professionals.

What CAE is doing

One of the ways to increase learning retention is by practicing what has been learned. Leveraging live aircraft for maintenance is often a challenge that can eventually be addressed with augmented and virtual reality.

Reaching new heights

CAE is committed to raising the bar for pilot training, moving beyond just preparing pilots to pass regulatory tests. Our goal is to standardize training across the civil aviation sector to ensure pilots are fully prepared for their missions, regardless of their level of experience.

To this end, we are the training partner of choice for airlines and operators around the world. We have also expanded our training centre footprint with new training centres in Savannah, Georgia, in the U.S.; Athens, Greece; Sydney, Australia; and Vienna, Austria.

Under our Women in Flight program, CAE works with different aviation partners to offer a variety of commercial pilot training program scholarships and unparalleled industry networking opportunities.

As experienced aviation professionals retire and the demand to train new talent grows, integrating technology into training is crucial to securing the future of aviation, prioritizing safety and optimizing efficiency. This goal can be achieved by providing immersive training to all pilots, cabin crew members, aircraft maintenance technicians and air traffic controllers. Assessing their logged time and performance can help measure training effectiveness.

With this in mind, CAE recently entered the air traffic services training market. In partnership with an ANSP, CAE opened our first Air Traffic Services (ATS) training centre in Montreal, Canada. As the need for air traffic controllers grows, we can help meet the demand. The new ATS training centre has recruited and onboarded approximately 50 specialized personnel, including instructors, pseudo-pilots and support staff, bringing expertise and international best practices. The training centre successfully graduated its first student cohort within six months by preparing them for on-the-job instruction and contributing to their operational readiness.

For aircraft maintenance technicians, CAE offers tailored programs to meet the specific needs of various operators and original equipment manufacturers. Training is available in one of our many training centres and is augmented by state-of-the-art technology and methodology for a high-quality training experience. Furthermore, CAE offers a Master Technician program to help support aircraft maintenance technicians with higher aspirations.

Products like CAE RiseTM and CAE Pelesys will enable any airline, operator, flight department or training organization to ensure that training requirements are met and that they are in line with all regulations by providing pilots with detailed insights and delivering interactive training options to cabin crew.

For instance, CAE RiseTM uses metrics-based insights and telemetry data to highlight areas of training improvement and measure subsequent improvements to track overall progress. Our agile and comprehensive training system also detects previously undiscovered risks to provide customers with a comprehensive view of the training output. CAE Rise™ acts as a supercharged, data-driven training assistant that helps create more efficient and effective training.

One of the ways to increase learning retention is by practicing what has been learned, but leveraging live aircraft for maintenance training is often a challenge. Developing VR solutions and applications will reduce costs and risks related to aircraft handling and availability.

This is an effective solution to providing a safe environment for students to practice their skills. Clients also receive enhanced training with tools like a virtual simulator, emulators or interactive schematics that offer an engaging approach to flight deck or air traffic services operational

environment familiarization. Hybrid classrooms, which include a mix of in-person and virtual attendance provide the best of both worlds and boost client engagement.

Our global footprint has more than doubled in the last decade. To meet the pilot training demand, we offer 360+ full flight simulators and 120+ aircraft across nearly 60 training centres catering to the most common aircraft fleet types. CAE is also developing mixed-reality training devices like the CAE 700MXR that will complement existing flight training devices.

To meet the cabin crew training demand, we have 15 global locations that offer programs meeting international regulatory requirements combined with practical training. To meet the aircraft maintenance technician training demand, we also have eight global locations that provide a full suite of programs across dozens of aircraft types.

Our pilot training solutions span all phases of the training journey. From ground school to flight training devices and full flight simulators, we aim to offer a seamless experience. We embrace new technology in our simulation equipment. One highlight is the CAE Prodigy visual system, which is powered by gaming engine technologies. The results are true-to-life visuals that will offer more realism during training.

Sustainability

As the first Canadian Aerospace company to become carbon neutral in 2020, CAE has joined the Renewable Energy 100 (RE100) initiative in 2023. As a member, CAE commits to sourcing 100% renewable electricity across our global operations by 2050 and we have nearly completed our LED Lighting Upgrade Program in buildings where CAE has operational control.

CAE commits to sourcing

100%

renewable electricity across our global operations by 2050

CAE maintains the commitment to convert a portion of our global Piper Archer training fleet to address about 63% of our Scope 1 (fuel) carbon emissions over the coming years.

The introduction of a digital ecosystem for civil aviation will support the environmental effort of our customers through the optimization of their flight plans, generating significant carbon savings. We also offer refurbished simulators to our customers as an attractive option for them to reduce their carbon footprint and we leverage our innovative culture to develop eco-efficient simulators.

Aviation careers

CAE.com hosts multiple pages outlining all the steps needed to pursue a career as an aviation professional. Information is categorized and presented in steps to allow individuals to find the exact information they seek.

We are committed to using all the resources possible to help recruit, train and shape the future of the aviation industry through various funding programs and sponsorship opportunities.

One of the factors driving retention is professional development within an organization. CAE offers programs like CAE Ready to Lead to aircraft maintenance technicians that encourage professional development strategies to nurture employees by gaining skills to achieve their potential.

While other programs provide technical skills development, CAE Ready to Lead helps aircraft maintenance technicians develop leadership skills to perform better and prepare for positions of greater responsibility.

Several programs are available to candidates interested in becoming a cabin crew member. Starting a career as a cabin crew member or adding it to your career will open doors for any individual. Individuals who have experience as cabin crew members tend to be sought out simply due to their people skills and for being able to perform in an environment where the stakes are high.

Scholarship programs offered by CAE partners are a tremendous way to entice newcomers to aviation.

Looking ahead

- **1.5M** civil aviation professionals are needed to mitigate retirements, attrition and growth of the market in the coming years.
- Efficient and comprehensive training will be vital to the success of potential candidates.
- Continuing to leverage and develop new technologies for working smarter and helping make the world safer remains a priority.
- Sustainability must remain top of mind as we continue to make progress with electric aircraft and pushing for widespread industry adoption of SAF.

Start filling your pipeline

This forecast highlights the significant demand for civil aviation professionals over the next decade. The aviation industry is poised for aircraft fleet expansion, modern air traffic control expansion and a steady rise in travel demand.

With remarkable technological advancements, now is an ideal time to enter the aviation industry. New technologies cater to candidates entering the job market. To sustain growth and ensure the industry's success, proactive measures must be taken to address training program effectiveness and overall success rates, together with projected retirement and attrition rates.

The talent search needs to show young professionals entering the workforce that aviation is open to all who desire to be part of this dynamic and evolving industry.

Visit the web version of the forecast at www.cae.com/2025-aviation-talent-forecast

Footnotes

1. National Airspace System Safety Review Team
2. Aviation Week 2025 Fleet/MRO Forecast
3. Strengthened Profitability Expected in 2025 Even as Supply Chain Issues Persist
4. Current and Future Availability of Airline Pilots and Aircraft Mechanics
5. Why the U.S. Doesn't Have Enough Air Traffic Controllers
6. The Significant Value of Air Transport to the Global Economy
7. Slow Start to Commercial Aircraft Deliveries in 2025
8. Airbus and Boeing Report March 2025 Commercial Aircraft Orders and Deliveries
9. Global Air Passenger Demand Reaches Record High in 2024
10. GDP Growth (Annual %) – India
11. Air India and IndiGo Will Require 16,800 Pilots in 10 Years
12. Business Jets Market
13. Business Jet Report
14. WINGX
15. World Wealth Report 2024
16. U.S. Civil Airmen Statistics
17. ATEC Pipeline Report 2024

Start training

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