#ISSUE 21

THE Aviator AFRICA

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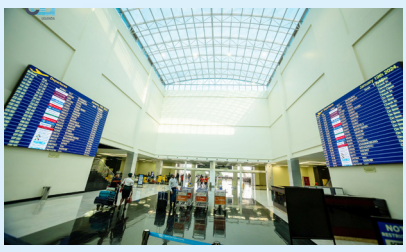

Entebbe Airways

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AFCAC COMMEMORATES 55th ANNIVERSARY

AFCAC Secretary General Mrs Adeyemi Adefunke together with Senegalese President H.E Macky Sall

African Civil Aviation Commission (AFCAC) commemorated the 55th year anniversary on the 17th January 2024 as the African Union's specialized agency on all Civil Aviation matters in Africa.

On this occasion, the Secretary General of AFCAC and delegation were received by H.E Mr Macky Sall on the 18th of January 2024 to mark the event.

AFCAC is the only AU agency hosted in Senegal since 1969. Senegal as the host nation continues to contribute greatly to AFCAC to execute its mandate by providing its headquarter.

Senegal is the 15th state to ratify the AFCAC 2009 constitution that ushered AFCAC into a new era as the executing agency of the YD and SAATM to firmly operationalize the Single African Air Transport Market (SAATM)

AFCAC Priorities

- To foster sustainable development of Air Transport in Africa.
- To foster Intra- African connectivity and the YD/ SAATM.
- To enhance Aviation Safety and Efficiency of Air Navigation Services.
- To enhance Civil Aviation Security and Facilitation in Africa.
- Championing the ratification of important Air Law Treaties.
- To promote capacity building of Africa and African Professionals.
- To enhance environmental protection in Civil Aviation in Africa.
- To promote robust stakeholder engagement and management.
- To promote strong communications and brand repositioning.

AFCAC important calendar of Events 2024

- African Union (AU) heads of state summit – February 2024
- Diplomatic event – May 2024
- Director Generals and heads of Civil Aviation Authorities meeting – May 2024
- 25th YD Anniversary – November 2024
- AFCAC Plenary –November/December 2024
- AFCAC Workshops and Meetings in the Civil Aviation Dormains.

Thought of the year 2024

It is our turn to work together, as a debt we owe to the founders of the African Union. AFCAC looks forward to working with you to deliver on a safe, secure, cost-effective, sustainable and resilient Air Transport Industry in Africa. Happy 55th Anniversary and all the best for 2024!

IN THE NEWS

Jet Service launches Johannesburg-Richards Bay route

South African based airline company, Airlink is advancing its Johannesburg-Richards Bay service with the introduction of jetliner flights on the route.

The boosted service will see a significant increase in capacity with the introduction of Airlink's comfortable, quiet and reliable 74-seat Embraer E170 jetliners replacing the 29-seat Jetstream 41 turboprop aircraft.

With the introduction of a jet service, flight time on the route is set to be reduced by up to 30 minutes.

"Richards Bay is crucial to South Africa's economy and it requires reliable and efficient air services, like Airlink's, to connect the city's businesses and those dependant on it with other markets and economic centres.

We are also keeping the promise we made to our partners, the City of uMhlathuze and the KwaZulu-Natal government, to deploy larger aircraft on the route once there was sufficient demand," said Airlink CEO and managing director, Rodger Foster.

Airlink serves a comprehensive network of more than 45 destinations throughout Southern Africa offering customers more freedom, more choices, and more travel opportunities with more connectivity than any other airline in Southern Africa.

Ethiopian Aviation University Graduates over 600 Aviation Professionals

Ethiopian Aviation University has graduated 627 aviation professionals at a ceremony held at the newly upgraded Ethiopian Aviation University.

The graduates were trainees in the University's Pilot, Aircraft Maintenance Technician, Cabin Crew & Catering, and Commercial & Ground Services programmes, 88 pilots, 125 aircraft technicians, 150 cabin crews, and 264 commercial trainees begin the aviation career path.

Ethiopian Aviation University has been accredited by Ethiopian Higher Education Relevance and Quality Agency to offer undergraduate and graduate degree programmes in various aviation and hospitality fields.

Currently, the University offers various aviation courses such as BSc in Aeronautical Engineering, Aviation Maintenance Engineering, Aviation Management & Operations, BA in Tourism & Hospitality Management, MSc in Data Science, MBA in Aviation Management.

The University also offers Diploma and Certificate Programs in Aircraft Maintenance Technician, Pilot Training, Cabin Crew and Commercial Training, Leadership & Career Development, Catering Training in addition to ICAO and Online Courses.

Ethiopian also owns training facilities in other regional cities of the country including in Hawassa, Dire-Dawa, Bahir-Dar and Mekelle.

Appoints Henok Teferra Shawl as Managing Director for Africa

Boeing has appointed Henok Teferra Shawl as the new managing director for Boeing Africa to strengthen the company's operations and relationships across the African continent.

Based in Addis Ababa, Ethiopia, Henok Teferra Shawl reports to Kuljit Ghata-Aura, president of Boeing Middle East, Türkiye, Africa, and Central Asia (METACA). In his new role, Teferra will be based in Addis Ababa, Ethiopia, where Boeing plans to open an office early 2024.

With an impressive career history in aviation, regulatory affairs and government relations, Teferra Shawl is positioned to be a strategic leader driving Boeing's continued success in Africa.

The appointment of Teferra Shawl complements the efforts of the Boeing Commercial Airplanes team led by Anbessie Yitbarek, vice president, Boeing Commercial Airplanes Sales and Marketing in Africa. His team is dedicated to serving African customers and further expanding Boeing's presence in the region.

Reinforces Female Leadership in MEAA

Menzies Aviation Ltd, an aviation services business providing ground handling, cargo handling, cargo forwarding and into-plane (ITP) fuelling has reinforced female leadership in its footprints in Middle East, Asia and Africa territory by elevating Lina El Mallah to the position of Senior Vice President (SVP) Organization Change and Systems.

In her new role, she will be responsible for overseeing strategic transformations and working closely with senior leadership to ensure seamless integration within the region.

The appointment of both Lina El Mallah and Al-Anood Al-Suwaidi supports the company's commitment to increase gender diversity and the proportion of women in its middle leadership to at least 40% by 2033 and senior leadership population to a minimum of 25% by 2025, in line with the International Air Transport Association's (IATA) 25by2025 campaign.

Charles Wyley, EVP, Middle East, Africa and Asia, Menzies Aviation said:

"We're delighted to welcome Lina and Al-Anood to the Menzies MEAA team, as we focus on our market growth strategy and build on our presence in the MEAA region.

Over the past 12 months, we've seen a steady growth in both passenger and cargo volumes, and look forward to working together to deliver safe, secure and high-quality services for our expanding customer base."

Menzies has been in aviation business since 1833 and specializes in ground handling, cargo and cargo forwarding services. The company boasts of 190 years doing business.

Welcomes New Year with New Flight Connections to India

Etihad Airways, UAE national carrier has stepped up its services to India with the launch of two new daily fights. Routes from Abu Dhabi to Kozhikode (CCJ) and Thiruvananthapuram (TRV) in the Kerala region of India began on New Year's Day.

These non-stop services to each destination bring the total number of Indian gateways served by Etihad to 10. The airline said this underscores its commitment to providing easy access to its expanding global network for guests travelling to and from the Subcontinent.

Etihad CEO, Antonoaldo Neves, said: "We have established a fantastic group of non-stop routes between India and Abu Dhabi, providing customers with easier access to our growing network without transiting through one of the main Indian hub airports.

The introduction of this service enhances accessibility to the picturesque countryside and beaches that Kerala is renowned for, creating increased inbound tourism to the region.

Additionally, it streamlines travel for professionals visiting the burgeoning business hubs in the area.

Saudia Group Becomes Official Airline Partner for World Defense Show 2024

Saudia Group has signed an agreement with the World Defense Show (WDS) to become the Official Airline Partner for its second edition that is slated to take place in Riyadh from February 4 to 8, 2024.

The agreement was signed by Khaled Tash, the Group Chief Marketing Officer of Saudia, and Andrew Pearcey, and the chief executive officer of World Defense Show.

Saudia Group's participation in the World Defense Show 2024 encompasses three of its subsidiaries, Saudia Academy, Saudia Technic and Saudia Private.

The World Defense Show 2024 is held under the patronage of the Custodian of the Two Holy Mosques,King Salman bin Abdulaziz Al Saud.

The Show provides a unique opportunity to engage with key decision-makers within the defense industry from both the Kingdom and around the world. It will witness visits from the royals, official delegations, government representatives, and executives representing various sectors.

The World Defense Show's Live Display programme is set to deliver dynamic daily air and land demonstrations of manned and unmanned technology, showcasing the capability for future multi-domain operations. These demonstrations will feature assets from exhibiting companies and government entities including Saudia.

INTERVIEW:

Eng. Liz Alwanze

Chief Executive Officer,

Kenya Association of Air Operators

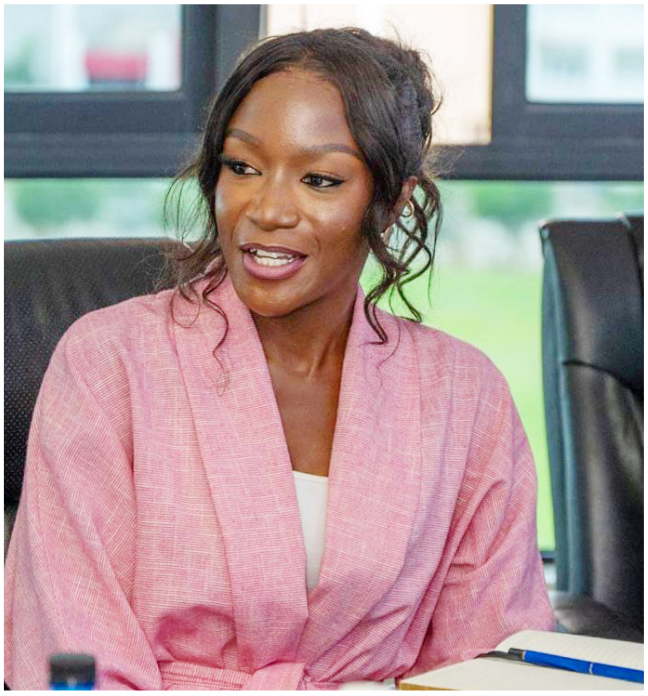
By Harriet James

Qn1.
How would you describe Kenya's aviation sector at the moment?

Ans:
As a country, we are making significant strides in establishing a sustainable aviation industry. For instance, Kenya is investing in improving its aviation infrastructure, with ongoing projects such as the expansion and modernization of airports like Jomo Kenyatta International Airport (JKIA) in Nairobi which has seen upgrades in T1B and 1C aimed at improving the check-in, security screening, retail operations as well as passenger lounge experience.
There has been refurbishment of various airstrips e.g. Migori, Kakamega, Kitale Airstrips.

On Green aviation, Kenya has affirmed its commitment to achieving net zero emissions by 2050, aligning with ICAO'S LTAG. Beyond the numerous SAF &CORSIA workshops that have been held, a noteworthy instance is Kenya Airways, a member of our association, who became the first African airline to fly a long-haul commercial flight using Sustainable Aviation Fuel (SAF).

Other great achievements among our members Safarilink Aviation, Z Boskovic Air Charters and Yellow Wings Air Services who have committed to converting their Cessna Caravan turboprop singles to the electric



propulsion systems being developed by Surf Air Mobility.

While there have been improvements, financial sustainability and infrastructure challenges persist particularly at some regional airports with insufficient capacity and outdated facilities continue to hinder the sector's growth.

Qn2.
The aviation industry in Kenya has been experiencing a challenge when it comes to acquiring and renewing the certificates of airworthiness? Has there been any improvements?

Ans:
Yes. KCAA is automating their processes, majorly in the airworthiness, flight operations and personnel licensing departments. This will enable electronic approval of manuals which reduces the time spent applying for and reviewing relevant documents.

However, there is still a lot of bureaucracy in the process with excessive amount of documentation required. This has resulted in delays and operational disruptions which has had a huge financial impact on operators.

A challenging certification process also hinders the competitiveness of our operators as operators in other jurisdictions with streamlined processes have an added advantage. Investors may also be reluctant to invest if the regulatory environment is perceived as burdensome or slow to adapt.

Qn3.
Since you took office, what are some of the things that are on top of the agenda for you?

Ans:
My main agenda since I took office has been advocacy and creating more partnerships through engaging with the Ministry of Transport (MoT), East African Community (EAC), and key agencies (KCAA, KAA, KRA), as well as industry groups (AFRAA, AASA, IATA).

Secondly, I'm actively engaging and collaborating with OEMs, industry suppliers, tourism, trade, and business associations (KTF, KEPSA, KNCC), as well as regional/ international bodies (ICAO, AFCAC), government/ development partners (AU, EU), financial institutions, and learning institutions.

I've also focused on growing the organization's membership base and encouraging collaborations and

partnerships among members and the larger aviation community.
In addition, I'm looking into committing to effective policy and regulations development and management, promoting robust incident reporting, collaborating with Aerodrome Operators (KAA, County), and fostering a culture of safety and security.

Lastly, I'm focusing on capacity building for members through trainings, workshops, seminars, internships, data sharing, pooling resources, career center services, and fostering collaborations within the aviation community.

Qn4.
As a young woman, how was it like filling in the big shoes from your predecessor? Was it scary and how has it been like as you've progressed?

Ans:
My predecessor is a legend in the aviation industry in his own right. He championed the safe, efficient development and growth of the industry not only locally but regionally.
I have continued to honor his legacy by carrying out my mandate with transparency, diligence and inclusivity as I steer the next chapter of the Kenya Association of Air Operators to greater success. There may be extremely high expectations from myself, stakeholders and colleagues and this pressure can be daunting.

Being a young woman in a leadership position comes with several challenges, especially in an industry where traditional gender biases persist. As the journey has unfolded, the unwavering support of the Board of Directors and stakeholders to my vision and goals, along with the establishment of a network of mentors and allies, has been pivotal. Embracing continuous learning from my challenges and the role as well has been integral.

Qn5.
It sounds like a cliché particularly asking women about this, but now that you are there as a woman, what plans do you have in increasing the number of women in aviation?

Ans:
As a woman this is an area that is very near and dear to me. Personally, I have five young ladies in the aviation industry that I mentor, and I continue to take up several young women into my secretariat where we train and develop them. As an association, there is a commitment by several member airlines to employ more women particularly in leadership roles; this will be tracked and analyzed at the end of every financial year.

Qn6.
Having been in the industry what challenges do women face and how were you able to overcome some of them?

Ans:
Initially, I faced some gender- related biases and stereotypes as the engineering field traditionally is male-dominated. However, I approached these challenges as opportunities for growth rather than obstacles. One crucial aspect of my professional development has been building a strong professional network which has assisted me navigate the industry more effectively.

Demonstrating my expertise and competence has also played a significant role in breaking down gender stereotypes. Another key issue that can foster gender equity in work places include is having a workplace culture that values diversity and inclusion.

Qn7.
What inspired you to be in the aviation industry and briefly, how has your journey been like to your position?

Ans:
I have always been intrigued by aircraft and the mechanism behind their workings, from a very young age. As I pursued my higher education, I became much more interested in the larger aviation industry and the regulatory and policy framework, which is where I shifted my focus on. My first job was with Fastjet Airlines as an operations intern at their HQ office in London at the time. From there, I worked for various operators including Kenya Airways and then later with the Kenya Civil Aviation Authority.

Qn8.
What legacy would you like to leave in the aviation sector?

Ans:
My aim is to leave a legacy of transformation, growth and development in the aviation sector marked by elevated safety standards, enhanced collaboration, and a steadfast commitment to service.

Vincent M. Mupenzi
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The African Airlines Association (AFRAA) and Uganda Airlines concluded the 55th Annual General Assembly (AGA) in Kampala, Uganda. The event was held under the High Patronage of the Government of Uganda and officiated by H.E Jessica Rose Epel Alupo, Vice President of the Republic of Uganda.

The event, which took place from November 19 to 21, 2023, witnessed the induction of five prominent airlines and two strategic partners, marking a significant milestone for the association. Among the latest airline members are Eswatini Air, Ibom Air, MedSky Airways, Zambia Airways, and Airlink.

The Assembly, brought together 569 delegates from 49 countries under the theme "Strides to Transform Aviation for Development", challenged African airlines and air transport stakeholders with new thinking on initiatives and strategies that will drive the sustainability of the air transport sector to realize its potential. Among others, the

Assembly recommendations were made on the following key areas:

- The Transformational value of the Single African Air Transport Market (SAATM) to African airlines.
- Collaborative and effective attainment of the Aviation Net Zero Roadmap
- Innovation initiatives in Africa for sustainable aviation in the continent

Uganda Airlines CEO Mrs Jennifer Bamuturaki (2nd left) and AFRAA Secretary General Mr Abderahmane Berthe with other officials during the AFRAA summit in Kampala

- Synergies for the development of intra-Africa tourism and air travel
- Gender diversity and inclusivity actions to shape the future of aviation in Africa

Appointment of officers

The 55th AFRAA AGA elected LAM Mozambique as the Chairman of the Executive Committee while Kenya Airways was elected as first Vice Chairman and Tunisair as second Vice Chairman. The AFRAA Executive Committee has oversight responsibility for the Association.

Host of the 56th AGA

The 55th AFRAA AGA elected EgyptAir as the President of the Association. EgyptAir will host the 56th AGA in Egypt from in November 2024.

L-R: AFRAA Secretary General Mr Abderahmane Berthe, Uganda V.P Major (Rtd) Jesca Alupo, Uganda Airlines CEO Mrs Jennifer Bamuturaki, Works and Transport Minister Gen. Edward Katumba Wamala at AFRAA summit in Kampala

AFRAA CEOs retreat

As part of the pre-AGA activities, AFRAA staged the first-ever AFRAA CEOs retreat on 19 November 2023. The CEOs retreat is an initiative recommended by the AFRAA Executive Committee to bring together member airline Leadership Teams to brainstorm on the Association's priorities, work plan, projects and specific dynamics of the air transport industry that will enhance the Association to play its critical role in the industry.

The CEOs retreat which will be held on an annual basis, made recommendations for AFRAA on: safety, intra-African connectivity and route development, sustainability of African Airlines and AFRAA joint projects.

New Members and Partners

The Association welcomed the following new Members that joined in 2023:

- Eswatini Air (Associate Membership)
- Ibom Airlines (Full Membership)
- MedSky Airways (Associate Membership)
- Zambia Airways Ltd (Associate Membership)
- Airlink (Pty) Limited (Full Membership)
- Chapman Freeborn Airchartering Ltd – (Full Partnership)
- TP Connects (Full Partnership)

Highlights from the Secretary General's State of the Industry report

Airline performance: The average Passenger Load Factor recorded in Africa for 2022 was 71.6%, a 10.6% increase compared to 2021. However, this is 7% less than the global average. The mismatch between capacity and demand and the limited commercial cooperation between local carriers may explain this low performance in terms of load factor in Africa.

In terms of passengers carried, during the 3rd quarter of 2023, African airlines reached the number of RPKs for the same period in 2019. AFRAA estimates the number of passengers in 2023 to be 85 million, 89% of the 95.6 million in 2019. Notably, in 2023, Northern Africa accounts for 39.5% of the total African traffic, followed by Central and West Africa at 21.7%, Southern Africa at 19.4% and Eastern Africa at 19.3.

On cargo, according to World ACD, African Airlines represent an average of 30.6% in terms of cargo market share in 2023.

AFRAA estimates the revenue loss for 2022 at USD 3.5 billion, representing 20% of 2019 revenues. This will narrow down to USD 1 billion in 2023.

Jet fuel prices: Jet fuel prices are rising, reaching $123.46 as at the end of October 2023. This trend of high fuel costs impacts fares and hinders air transport affordability for African citizens.

Safety: Promoting and enhancing safety is one of AFRAA's priorities through collaboration. AFRAA and industry stakeholders are working towards improving safety standards in our continent. AFRAA is currently running with IATA and AFCAC a 3-year project, which aims to identify

East African Airshow Chairman Mr. Oscar Ssemawere(Extreme left) Welcoming officials to EAA booth at AFRAA summit

Uganda Airlines CEO Mrs Jennifer Bamuturaki together with AFRAA Secretary General Mr Abderahmane Berthe at a press conference

Panelists during the 55th AFRAA Annual General Assembly

eligible airlines, conduct gap analyses, and recommend corrective actions to prepare those airlines for IOSA or ISSA certifications.

AFRAA priorities for 2024:

1. Safety first
2. Connectivity and route development
3. Air Transport sustainability
4. AFRAA 5-Year Strategic Plan

Wings of Integration; Uganda's Commitment to the Single African Air Transport Market (SAATM):

The implementation of the Single African Air Transport Market (SAATM) is currently one of the main topics of discussion in the aviation industry across the continent. As expected, it featured prominently in several speeches during the 55th Annual General Assembly of the African Airlines Association (AFRAA), held from November 19th to 21st, 2023, in Kampala, Uganda.

The honorable General Edward Katumba Wamala pledged that Uganda would announce its accession to SAATM in due course. The Minister noted that SAATM is not a magic wand and needs supportive action in other areas before its full benefits can be realized.

He reiterated that we cannot hope to make headway without opening our borders so that citizens can travel unimpeded. Without opening borders, we are putting the proverbial cart before the horse, and the benefits will indeed be limited.

AFCAC's renewed ambition: 30% Implementation of the 5th Freedom of the Air in Africa by 2025

AFCAC Secretary General Ms. Adefunke Adeyemi in a message relayed by Ms. Angeline Simana, Director of Air Transport at the Commission noted that Africa is making progress in terms of connectivity and that more States are embracing the SAATM for its huge benefits and we have moved from 14.5% to 19% intra-Africa 5th Freedom traffic penetration. She reaffirmed the Commission's firm commitment to achieving a 30% implementation rate of the fifth freedom in Africa by 2025.

Host of the 56th Annual General Assembly;

EgyptAir, the national airline of Egypt, was selected to host the 56th Annual General Assembly (AGA) of the African Airlines Association (AFRAA) in November 2024. In accordance with tradition, EgyptAir, as the next host, has also been elected as the President of AFRAA for a one-year term.

In addition, LAM Mozambique was elected as the President of the Executive Committee, while Kenya Airways and Tunisair were appointed as the First and Second Vice Presidents, respectively.

The 55th AFRAA Annual General Assembly concluded its activities on Tuesday the 21st of November 2023.

The impact of Liberalization on the African aviation sector

By Namukasa Joan
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Following global trends of air transport market liberalization, African countries set out to liberalize the aviation market across the continent through the Yamoussoukro Decision (YD) in 1999.

The YD was adopted out of recognition that the strict market regulations that many countries put in place to protect their national carriers have detrimental effects on air safety records, while inflating air fares and dampening air traffic growth. However, full implementation of the YD and its fast-tracking initiative under the Single African Air Transport Market, remains pending.

The benefits of liberalization extend well beyond the aviation industry, resulting in an overall positive impact on tourism and employment as well as greater trade and deeper engagement in global production value chains. YD has became binding, the overriding concern of many African countries is uncertainties around the economic effects of air transport liberalization.

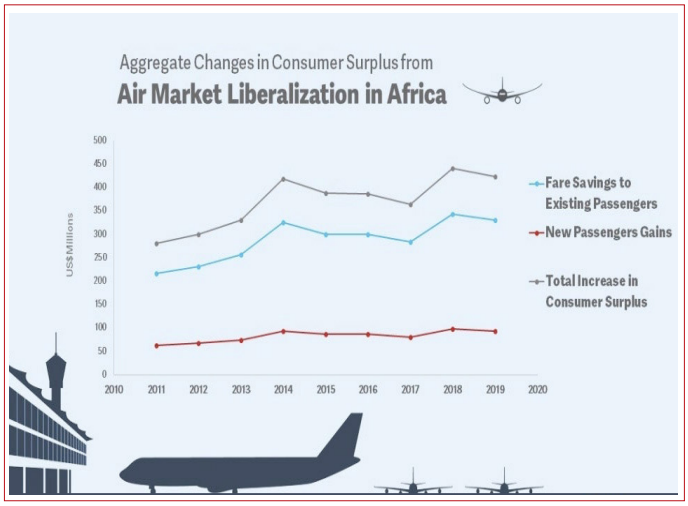
Firsthand sitting in many Bilateral Air Service Agreements (BASAs) negotiations, in principle the YD had liberalized the market, meetings are routinely called to revise provisions on the number of weekly flights and rights to pick-up passengers in multi-legged flights.

While there has undoubtedly been some progress towards liberalization, after two decades of discussion no African country has yet fully implemented the Yamoussoukro Decision.

This situation persists despite the clear economic rational and favorable implementation environment in many countries, which have been highlighted in a recent study led by the African Union Commission with support from the World Bank.

Economically: liberalization leads to a reduction in airfares and an increase in air travel demand and flight frequency. The effect of liberalization on air transport markets operates via multiple channels:

- price reduction



- increased market competition
- increased flight frequency

Each of these direct effects has implications for the demand for air travel, which may increase due to both a reduction in prices and an increase in flight frequency. Furthermore, increases in air travel demand have subsequent implications for prices via economies of density, and for flight frequency via economies of scale effects.

After quantifying all the channels through which air transport liberalization can affect air service provision in Africa, we find that liberal BASAs generate consumer benefits that are equivalent to a 40 to 42 percent drop in average airfares.

This ad-valorem price equivalent measure of air liberalization amounts to large consumer welfare gains, in the range of US$330.3 million to US$424.4 million (29 to 37 percent of air travel revenues) among the sample countries for 2019, the last year of our study period.

Financial sustainability: Looking at the role of the aviation industry in creating jobs, encouraging trade and tourism, and improving investment opportunities in Africa.

Environmental and ecological sustainability: Identifying the ways in which air services impact on the environment: noise and air pollution. The conservation of protected areas and other emerging examples of best practice suggest that there is scope to improve the environment and the livelihood of the poor, who are particularly threatened by global warming, while taking advantage of the economic benefits generated by safe and efficient air transport links and responsible tourism.

Social sustainability: Considering how air services contribute to the well-being of all sections of the community, not just the richer households and companies. on the social aspects of air transport should lead to a dialogue on the future role of air transport and sustainability in Africa.

promotion of more diversified external trade and tourism offer an opportunity to set in motion a virtuous cycle of economic growth and sustainable development. Our findings also confirm the need to implement the triple partnership of air services proposed by the Air Transport Action Group (ATAG):

- improving air transport's efficiency and environmental performance,
- a partnership to develop infrastructure and links with other transport modes,
- a partnership with communities and other interest groups to promote exports and tourism.

ATAG is an independent coalition of organisations and companies throughout the air transport industry that have united to drive aviation infrastructure improvements in an environmentally-responsible manner.

Created in the early 1990s, ATAG is a not-for-profit association based in Geneva, Switzerland with some 80 members worldwide.

Its members include airports, airlines, manufacturers, air navigation services providers, airline pilot and air traffic controller unions, chambers of commerce, travel and tourism organisations, ground transportation and communications providers. ATAG's funding members are ACI, Airbus, Boeing, CFM, IATA and Rolls-Royce

Source: Air Transport Action Group

EMBRAER

Ibironke Rotimi-Olajide

First Female Captain in Africa to Fly Embraer E195-E2 Aircraft

By Wanyana Maureen
wanyanamaureen2015@gmail.com

A milestone in aviation history was achieved recently as Nigerian-based airline Air Peace announced hiring what the company claims is the first female aircraft pilot in Africa.

According to a company statement, Ibironke Rotimi-Olajide officially became the first woman in Africa to be named an aircraft captain.

Air Peace celebrates a historic milestone as it hires the first female aircraft pilot in Africa, who also becomes the first female commander of an Embraer E195-E2 aircraft on the continent.

The airline has faced challenges due to the pandemic but has showcased resilience by expanding its flight operations to various destinations, including China, Saudi Arabia, Bermuda, and India.

Despite having its request for slots at London's Heathrow Airport rejected, Air Peace plans to fly to secondary airports in London and has also received approval for flights to Dubai, although the start date is yet to be announced.

She also became the first female commander of an Embraer E195-E2 aircraft in Africa, being promoted from a senior first officer role she started in 2021. She was honored with a Women in Aviation award for being the first

woman in Africa to achieve that pilot position.

The E195-E2 jet is the largest in the E-Jet E2 family and is used primarily on high-density routes. The typical seat capacity of an aircraft is 120 to 146 seats, depending on the number of classes offered by the airline. The range is about 2,600 nautical miles or about 4,800 kilometers.
The announcement of the first female E195-E2 captain in Africa is one of the many achievements the airline has realized in its ten-year history.

The airline is still recovering from the pandemic's impact and the near shutdown of operations due to staffing and the cost of jet fuel in 2022. Today, it has extensive flight operations serving more than 20 destinations across Nigeria from its hub at Murtala Muhammed International Airport in Lagos.

It has also expanded to fly to Guangzhou Baiyun International Airport in China, King Abdulaziz International Airport in Saudi Arabia, L.F. Wade International Airport in Bermuda, and Chhatrapati Shivaji Maharaj International Airport in India from its Lagos hub.

The airline announced plans to add flights to London's Heathrow Airport. Air Peace is urging UK authorities to allow slots access at London's Heathrow Airport (LHR), according to a report by Nigerian newspaper The Whistler. The news comes as the airline has recently obtained the UK Third Country Operator (TCO) authorization.

'Heathrow or nothing'
Following the recent approval to fly to the UK, the country's aviation authorities have proposed Air Peace to run flight operations from either London Stansted (STN) or London Gatwick (LGW). Both airports are on the UK's list of the top five busiest.

However, the chief executive of the airline, Allen Onyema, rejected the offer by the UK authorities, citing the Bilateral Air Service Agreement (BASA).

The chief executive of the airline is advocating for Air Peace to establish service to a 'primary airport,' emphasizing that UK carriers, including British Airways and Virgin Atlantic, possess the capacity to operate flights from Nigeria's primary airports, including Muhammed International Airport (LOS) and Nnamdi Azikiwe Airport (ABV).
When discussing the choice to decline the offer, Onyema shared his perspective with The Whistler:

"It took seven years for them to come and do the audit. Now we have got the approval. The next thing is slots, and they are telling us to go to London Stansted or take London Gatwick. I'm not going to Stansted or Gatwick. You come to the primary airport in Nigeria, and by BASA, you enjoy the two primary airports. So, you will give me your own primary airport. It must be Heathrow or nothing."

This is not the first instance of Nigeria and the UK having a disagreement regarding LHR slots. In 2011, Nigeria threatened to revoke permission for British airlines due to Arik Air's inability to secure slots at Heathrow. According to ch-aviation.com, Air Peace is currently the sole Nigerian carrier authorized to operate in the UK.

However, the airport authority rejected the request for slots. Instead, due to existing flights to Lagos at London Heathrow, the airline was recommended to apply for slots at secondary airports in London, such as Gatwick Airport or Stansted Airport.

It recently also received approval for flights to Dubai International Airport. However, the airline has not announced a date for the start of air service to the United Arab Emirates, and the city is not listed as a destination open for reservations on the company website.

Air Peace uses various domestic, regional, and international aircraft. Its aircraft mix includes Boeing 777s, Boeing 737s, and Embraer 195-E2s, Embraer 145s, Airbus 320s and a Dornier 328. The carrier operates the Peace Advantage frequent flyer program for passengers and is currently not a member of any significant worldwide alliances.

CREDIT: Tony Timmons

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UGANDA'S AVIATION INDUSTRY KICKS-OFF 2024 ON A HIGH

Vianney Mpungu Luggya
Manager Public Affairs - UCAA

Entebbe International Airport recorded a total of 1,733,133 international passengers (849,399 arriving and 883,734 departing passengers) in the period between January to November 2023.

This reflects 315,518 more passengers than was registered in the same period of January to November 2022, which recorded a total of 1,417,615 international passengers (666,270 arriving and 751,345 departing passengers).

The January to November 2023 traffic is also higher than that recorded before the outbreak of the COVID-19 pandemic in the same period of January to November 2019, which was a total of 1,622,784 international passengers. That is a clear sign of recovery.

While there were notable improvements in relation to domestic, transit and cargo traffic, the January to November 2023 figures did not surpass the 2019 traffic of the same period. The industry looks forward to 2024 for full recovery in all areas.
With Uganda hosting the Non Aligned Movement (NAM) and G77+ China Summits in January 2024, and the national carrier, Uganda Airlines, having recently commenced flights to Lagos and Mumbai, among other developments in the industry, the international passenger traffic figures are likely to continue growing.

The increase in traffic is also partly attributed to relaxation of COVID-19 travel restrictions across the globe, tourism promotion initiatives, and attraction of more air operators to Uganda's airspace through liberalization of air transport services, among others.

In December 2023, Uganda concluded four (4) new Bilateral Air Service Agreements (BASAs) with Benin, Brazil, Iceland and Algeria, which brings the total number of existing BASAs to 56.

The most recent BASAs were signed on the sidelines of the International Civil Aviation

No	Item	JAN-NOV (2019)	JAN-NOV (2022)	JAN-NOV (2023)	Recovery
1	International arrivals	787,288	666,270	849,399	107.9
2	International departures	835,496	751,345	883,734	105.8
3	Domestic arrivals	13,429	10,009	11,597	86.4
4	Domestic departures	11,908	8,632	9,640	81.0
5	Transit	162,671	101,396	117,604	72.3
6	Imports (Tons)	20,214	18670	16,476	81.5
7	Exports (Tons)	38,927	37,602	37,327	95.9
8	Commercial Aircraft Movements	29,807	26,511	28,167	94.5

Organisation Air Services Negotiation Event (ICAN2023) in Riyadh, Saudi Arabia, and they will facilitate air links between Uganda and the four countries.

In terms of infrastructure, the project for upgrade and expansion of Entebbe International Airport is moving on smoothly.

Several sub components of the project have been completed, including the new Cargo Centre, which was opened in 2021, and strengthening and rehabilitation of runways (12/30 and 17/35) and their associated taxiways.

Aircraft Aprons 4, 2 and 5 were also completed. The only pending works are on expansion of Apron 1, whose works are on-going and construction of a new 20,000 square meters passenger terminal building, which will connect to the current terminal building.

On completion of all the works by July 2024, Entebbe International Airport's terminal building capacity will be enhanced from the current 2 million passengers a year to at least 3.5 million passengers annually.

The modification of the current terminal building project is scheduled to be fully open to the public in January 2024. The departure area is already in use, but the departure canopy was being completed

at the turn of 2023 so that passengers can be dropped-off by the terminal to simply move from the car to the building. The arrivals area will also be bigger, and more ambient to facilitate a better passenger experience.

One of the biggest highlights in 2023 was Uganda's performance in the Universal Safety Oversight Audit Program – Continuous Monitoring Approach (USOAP-CMA), an on-site audit conducted by the International Civil Aviation Organisation (ICAO), from September 6 -18, 2023. The international audit was undertaken to evaluate the effectiveness of Uganda's safety oversight systems in compliance with the ICAO Standards and Recommended Practices (SARPs).

Uganda scored a commendable 72.27%. The results indicated an overall improvement in the country's safety performance, and

the score is a vote of confidence in Uganda's aviation safety system, which shows the entire international Aviation community that the country complies with ICAO standards.

It is also important to note that Uganda has never registered and did not register a Significant Safety Concern (SSC). When a country registers an SSC in such an audit, it means that there is a serious breach of safety standards, which could ultimately lead to several airlines shunning the airspace of that particular country.

The audit team also appreciated the good work done by the regulator in the Certification process of Entebbe International Airport and re-certification of Uganda Airlines, among others.

Having done well in the safety audit, the industry should not rest on one its laurels. Another major international audit is lined up for Uganda's aviation industry, the Universal Security Audit Program – Continuous Monitoring Approach (USAP-CMA), which is scheduled for January 30 – February 8, 2024. Preparations for this are in high gear.

The last such security audit conducted by ICAO on Uganda was in 2017 and the country scored 81.8%, which was well above the then global average of 72%. Back then, the performance earned Uganda special recognition at the 2019 ICAO General Assembly in Montreal, Canada with award of an ICAO President's Certificate in recognition of the excellent performance. The security audit is totally different from a safety audit.

Uganda's previous record in both audits is testimony of commitment to upholding the highest standards of safety and security in the aviation industry. The role of industry stakeholders is key in ensuring success.

Africa's Largest Cargo Carriers

Aviation in African already supports $55.8bn in economic activity and 6.2 million jobs, according to the latest estimates from IATA, with demand for air travel set to double over the next two decades.

No.1. ETHIOPIAN AIRLINES

Star Alliance member Ethiopian Airlines carried more than 13.3 million passengers in the 12 months to the end of May 2019, a rise of 11.6 percent compared with the same period a year earlier.

The carrier is currently implementing a 15-year strategic plan called Vision 2025 that aims to position it as the leading airline group in Africa with seven strategic business units.
It also reported an operating profit of $260m in 2019.

No.2 EGYPTAIR

With a 9.7 percent increase in passenger numbers, EgyptAir carried almost 8.9 million passengers in the year to May 2019. The Star Alliance member currently flies to more than 70 destinations around the world, including six in Asia Pacific and three in North America.

In October, EgyptAir began using its new A220-300 on flights to Budapest, becoming the sixth carrier in the world to receive the aircraft.

No.3 ROYAL AIR MAROC

Royal Air Maroc, which next year will become the first African member of the Oneworld alliance, carried more than 7.2 million passengers during the 12-month period to the end of May.

From its hub at Casablanca Mohammed V International Airport, the carrier operates an extensive domestic and regional network within Morocco and Africa.

No.4 AIR ALGERIE

Sabre figures show Air Algerie's passenger numbers reduced by 8.6 percent to 6.47 million, but it remains the fourth largest African airline.

The carrier flies to 70 destinations, with Brussels Charleroi among the latest to be added to its network. About 71 percent of international seat capacity is to points in Western Europe, with France its largest overseas market. I

No.5. COMAIR

Since 1998 Comair has operated as a South African franchise of British Airways, operating much of its services under the BA brand. It also owns the Johannesburg-based budget carrier Kulula. Passenger numbers grew by almost 10 percent in the year to the end of May, rising to 6.2 million. The carrier, which operates a fleet of 28 Boeing 737 aircraft, was originally scheduled to take delivery of its second 737 MAX 8 jet in March 2019 but it is unlikely to receive the aircraft until the first quarter of 2020 at the earliest.

No.6 KENYA AIRWAYS

Currently led by chief executive and Routes Africa 2019 speaker Sebastian Mikosz, Kenya Airways is based at Jomo Kenyatta International Airport in Nairobi. The SkyTeam member increased passenger numbers by 1.9 percent in the year to the end of May, Sabre figures show. In October 2018 it began service to New York JFK – it's first route to the US – and carried more than 105,000 passengers on the route during its first year of operation.

No.7 SOUTH AFRICAN AIRWAYS

The state-owned flag carrier of South Africa has endured a tough time of late and the passenger drop reflects its efforts to cut capacity on loss-making routes. In October, the country's government announced it would provide a $600m subsidy over three years to pay down the airline's debt. Vuyani Jarana, who resigned as South African Airways' chief executive in June, will provide a keynote interview at Routes Africa 2019 about his time at the helm of the airline and future prospects.

No.8 TUNISAIR

Tunisair, the national carrier of Tunisia, flies to more than 40 destinations across northern and western Africa, the Middle East and Europe. Passenger numbers edged 3.8 percent higher in the year to the end of May, with 3.5 million passengers carried. New routes added to its network during the period included Sfax – Paris Orly and Djerba – Oran. The airline expects to receive five new aircraft between the end of 2020 and early 2021.

No.9 MANGO

Mango, the low-cost airline and subsidiary of South African Airways, operates scheduled domestic passenger services, as well as international flights to Tanzania. The carrier has a fleet of 14 Boeing 737-800 aircraft and recently named the returning Nico Bezuidenhout as its new chief executive. He left Mango in 2016 to join regional low-cost airline Fastjet.

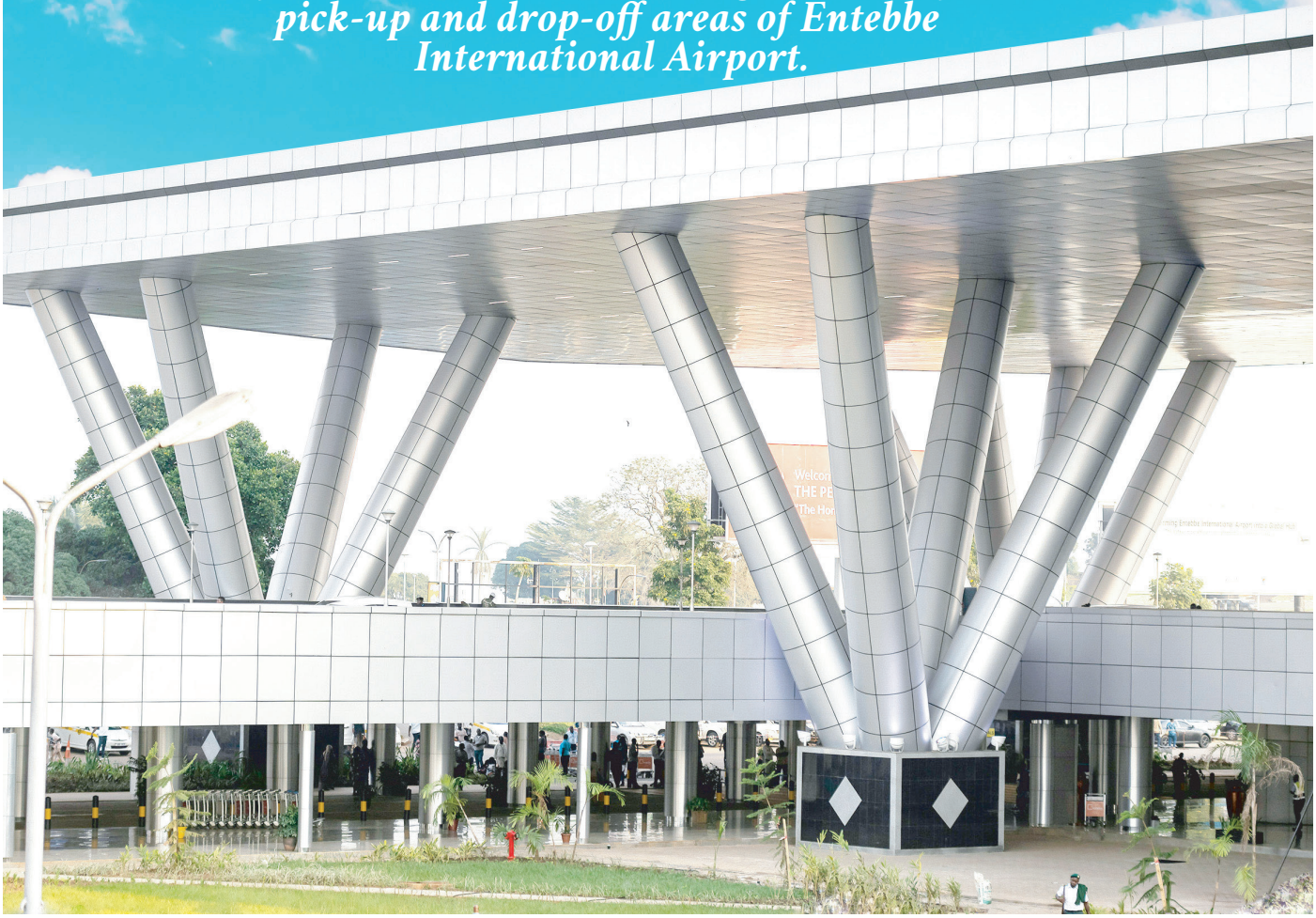
No.10 FLYSAFAIR

FlySafair is a South African domestic low-cost carrier based at Johannesburg Oliver R Tambo International Airport. Flights are available between OR Tambo, Lanseria, Cape Town, Port Elizabeth, George, East London and Durban.

The airline has 16 aircraft in service, comprising eight Boeing 737-400s and eight 737-800s. Passenger numbers jumped by 46 percent to 3.1 million in the 12 months to the end of May, representing the largest percentage rise in the top ten.

New Face of:
ENTEBBE
INTERNATIONAL AIRPORT

Pictorial of the newly refurbished arriavals and departure terminals including the revamped pick-up and drop-off areas of Entebbe International Airport.

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4


ENTEBBE INTERNATIONAL AIRPORT

Interview:

Clive Lemon

CEO Datahub Consulting

The Aviator Africa reproduces an interview of Ali Kassir an Airline System IT Specialist at AviaPro Consulting he had with Clive Lemmon, C.E.O of Datahub Consulting on business intelligence, challenges with data collection and analysis, interpretation of data, security compliance, and upcoming trends.

By Harriet James

Qn1.
Can you provide an overview of how data analytics is transforming the aviation industry? What role do AviaPro and Datahub Consulting as partners play in this transformation?

Ans. For me analytics is the reports and dashboards that users see and use. It turns data into information, insights, and trends. Any person trying to analyze the data themselves would find it impossible to interpret billions of rows of data into meaningful information or trends. But with analytics this is possible.

So how would we apply this to aviation?
As a consulting organization that works with many airlines and airports across the world, there are many use cases where airlines are reliant on Excel sheets and manual

reports to interpret the data. Datahub have engaged with these airlines to look at the processes used within the airline, create an analytics roadmap, then integrated Microsoft power BI to create insights.

Qn2.
How do Analytics and Business Intelligence help aviation companies make informed decisions?

Ans. Firstly, what is the difference between Business Intelligence and Analytics?

For me, analytics is a subset of business intelligence, where business intelligence is the collective name for an end-to-end process.
Business intelligence includes the data warehouse where the data is held, cleansed, and moved into the data warehouse using an automated process called ETL (Extract, Transform, and Load), adding business logic like specific calculations relating to the industry, and then presenting the data using an analytics tool such as Power BI, Tableau, or Qlik.

Business Intelligence
Allows airlines and airports to collect historic data in one large database called a data warehouse to allow for quick analysis of data. A data warehouse can get data from numerous sources and combine it into one centralized model. With data from numerous sources, it provides even more meaningful information.
Analytics

Here are some of the questions that analytics can answer:
Trend analysis of ticket sales

- What is the number of weeks prior to the flight that sales of business class peak. Comparing one route to another?
- What is the average age of passengers using first class on each route?
- How many passengers are part of the frequent flyer program (FFP), comparing the last 5 years.
- How many passengers use the lounge facilities at each departing airport?
- Analyze meal preference: On a particular route what are the meal preferences. Does the London to Dubai flight require more vegetarian meals than the Paris to Dubai flight? Having the right number of meal preferences for the passengers is part of the customer satisfaction journey.

Qn3.
Data compliance is a critical concern in data analytics. How do AviaPro and Datahub Consulting ensure data compliance in the aviation sector, which often deals with sensitive information?

Ans. With the increase in cyber security attacks and new data protection laws regulating the use of personal information. Having governance alongside your analytics is key and essential. This is why working with a consultancy that has data engineers and data scientists working alongside data protection professionals is paramount.

Qn4.
How does data analytics contribute to safety and efficiency in the aviation industry, and what are the potential future developments in this area?

Ans. One of the key areas where analytics can contribute to safety is within airports.
Incident Management;

Health & safety incident reporting; With the high volume of people using airports daily there will be regular health and safety incidents. This can be analyzed and managed efficiently.
For example, how many incidents required a paramedic to attend, and how long did it take to respond. How many incidents caused flight delays and how can this be reduced.

Analysis of root cause of incidents; with any incident, especially at airports, the management team would want to know root causes and ways to reduce the incidents. This again can be achieved with analytics.

Regulatory Compliance; Also, analytics can assist airports in ensuring compliance with safety regulations by tracking and analyzing safety metrics.

Staff Utilization; using data analytics, management can analyze trends to identify where staff should be utilized to minimize queues and to speed up movement through the airport. Understand bottlenecks in the airport process and compare the performance of the airport against other airports.

Staff Training; one area that Datahub has used analytics in an airport is with staff training. There are a lot of staff in the airport from security to fire crew. For a lot of these there is regular training and assessments that need to be addressed. Having an analytics solution with automation, managers can get reports on staff that are due to have training or assessments in the next 120 days.
This means that managers get early warning and can effectively plan for this. The automation can email staff or the managers of up-and-coming training or assessments.

Qn5.
Can you highlight some upcoming trends or innovations in data analytics that are particularly relevant to the aviation sector?
Future Travel Experience
Guest experience and technology, with

passenger numbers increasing in the millennials bracket (people born after 2000) then this is predicted to change the approach of airlines and airports. Digital first experience is becoming essential.

For example, when a passenger enters an airport, especially an overseas airport that the passenger is unfamiliar with. Passengers are starting to use interactive maps on large screens, or interactive services on mobile technology to get them through the airport.

Passenger Demand
2024 is predicted to see increase in passengers compared to 2022 and 2023. This is due to the industry recovering from COVID and then a global recession. Understanding demand can support airports with strategic planning for recruitment of staff.

Climate
In the next few years weather and climate related delays are estimated to account for 64% of total delays. With climate change countries around the world are seeing more storms, high winds (more than 60mph), this is impacting scheduled flights causing delays and cancellations. Being able to analyze and understand this impact allows for airlines and airport to strategically plan.

Qn6. How Does Climate Change Affect Destinations

Ans. The change in climate is predicted to affect destinations as passengers are expected not travel to destinations with extreme heat. Destinations previously visited are expected to decline and passengers could opt for destinations that are a bit cooler. Analyzing trends on passenger numbers by month of year and the climate can give insights into change of destination preferences.

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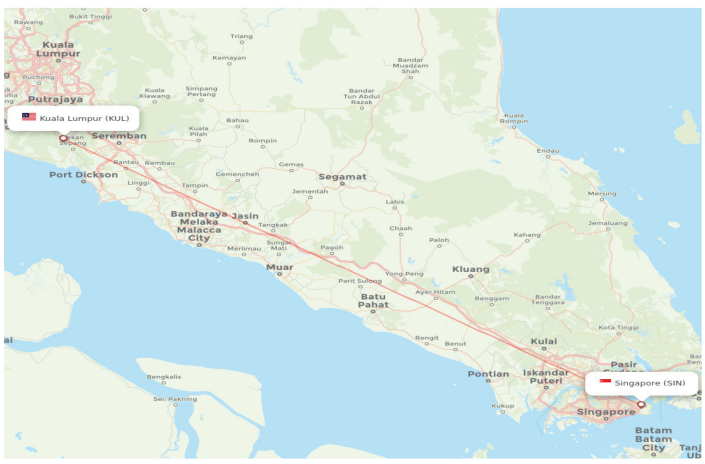
OAG® TOP 10 BUSIEST GLOBAL FLIGHT ROUTES 2023

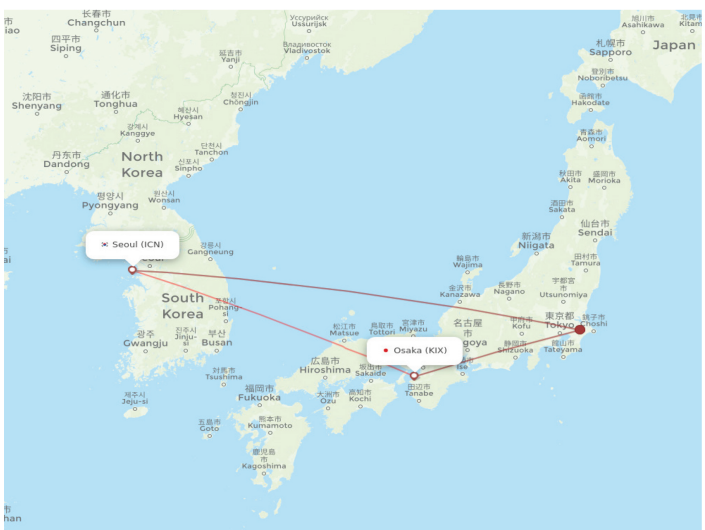
Travel intelligence company OAG released its annual listing of the world's busiest international flight routes for the year 2023 based on the number of seats sold on a flight. The Aviator Africa reproduces the published list below;

By Jane Makena

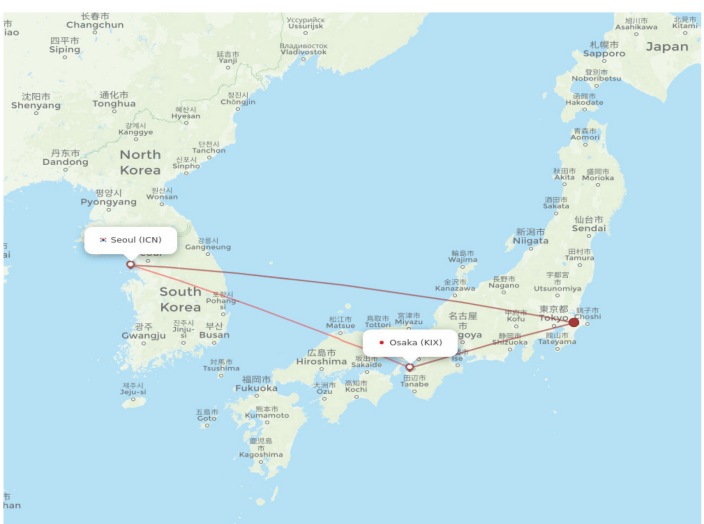
1. On the number one spot for the year 2023's busiest international airline route was Kuala Lumpur (KUL) to Singapore Changi (SIN) with four million, eight hundred ninety one, nine hundred fifty two seats (4,891,952)



2. Closely second place was Cairo (CAI) to Jeddah (JED) route with four million, seven hundred ninety-five thousand, seven hundred and twelve (4,795,712 seats sold for the year 2023.

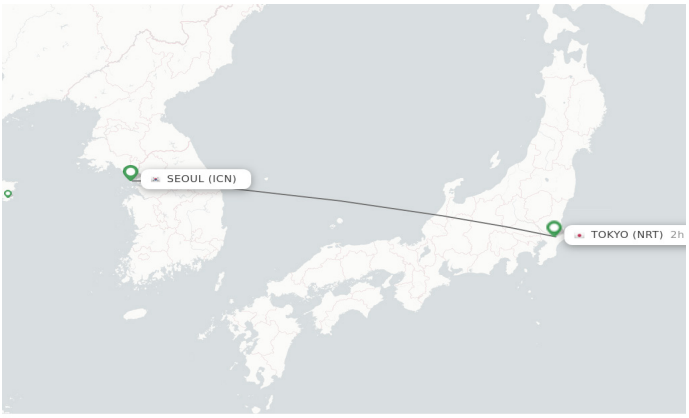


3. Hong Kong (HKG) to Taipei (TPE) was the third busiest international route in 2023 with four million, five hundred sixty eight thousand, two hundred eighty seats (4,568,280) sold



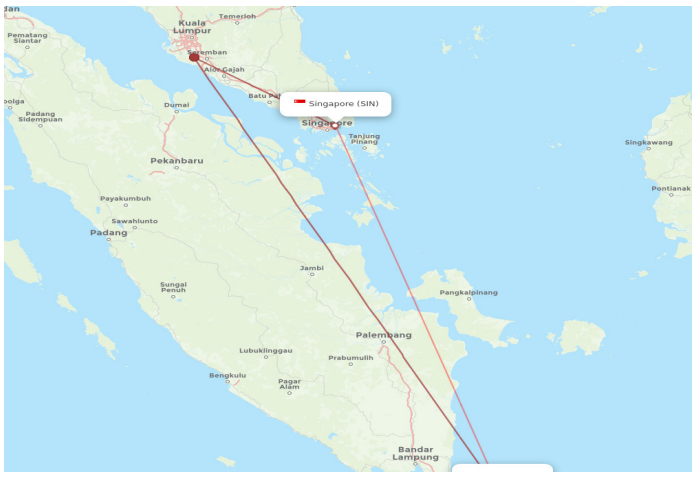
4. In fourth place for the year 2023 was Seoul Incheon (ICN) to Osaka Kansai (KIX) route with four million, two hundred eighteen thousand four hundred eighty four seats (4,218,484)

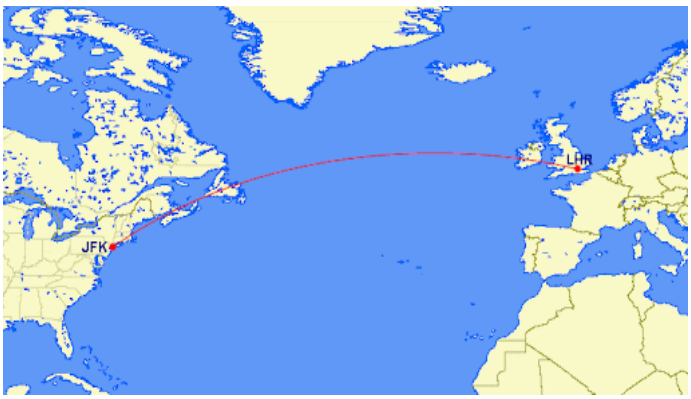
5. Seoul Incheon (ICN) to Tokyo Narita (NRT) was the fifth busiest route for the year 2023 with four million, one hundred fifty five four hundred eighteen million seats (4,155,418) sold.



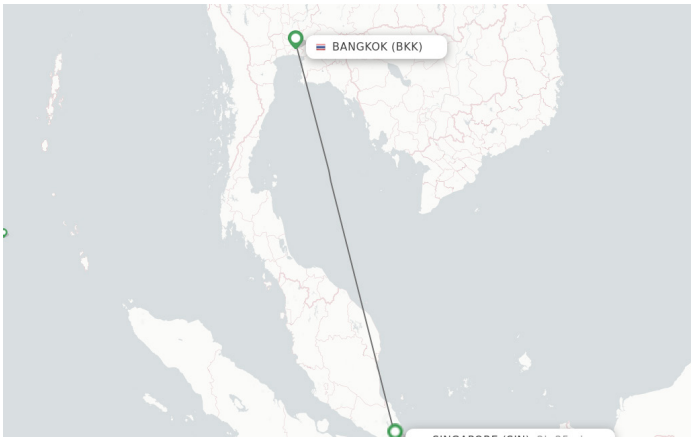
6. The sixth busiest route for the year 2023 was Dubai (DXB) to Riyadh (RUH) route with three million, nine hundred ninety thousand, and seventy six thousand seats (3,990,076)

7. Jakarta (CGK) to Singapore Changi (SIN) route came in seventh place with a total of three million, nine hundred and ten thousand, five hundred and two seats (3,910,502) sold for the year 2023.





8. In eighth place came New York JFK (JFK) to London Heathrow (LHR) route with three million, eight hundred seventy eight thousand and five hundred and ninety seats (3,878,590) sold



9. Bangkok (BKK) to Singapore Changi (SIN) route was the ninth busiest route for the year 2023 with a sale of three million, four hundred and seventy eight thousand four hundred and seventy four (3,478,474) seats.

10. The last on the 2023 busiest global routes for the year 2023 was Bangkok (BKK) to Seoul Incheon (ICN) that came into tenth place with three million, three hundred and sixty two thousand, nine hundred and sixty eight thousand (3,362,968) seats sold.

GLOBAL AVIATION ACCIDENTS AND INCIDENTS OF 2023

The year 2023 was ranked as one of aviation industry's safest years on record as only two fatal accidents were reported. The absence of major fatal accidents involving large turbofan-powered commercial aircraft, made 2023 one of the safest year in aviation history.

By Evans Kimani

Port Phillip Bay mid-air collision

On November 19, 2023, two Marchetti S-211 jet trainers took off from Essendon Fields Airport with the intent of capturing footage for an upcoming film. At 1:45 pm they collided 25 km west of Tyabb Airport. One aircraft, VH-DQJ was able to return to Essendon and made a safe landing. The second, VH-DZJ, crashed into Port Phillip Bay with two occupants on board; they were Stephen Gale, a former RAAF pilot and James Rose, a cameraman who had worked on shows such as MasterChef Australia. On November 22, human remains were recovered from the bay floor. The ATSB is investigating, and recovery of the aircraft wreckage is underway.

Kenya Air Force Bell UH-1 Crash

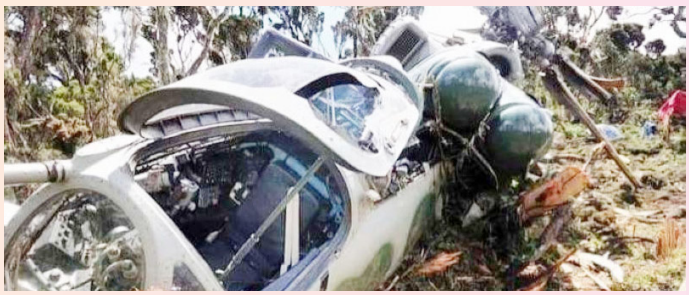
On 19 September 2023, a Kenya Air Force Bell UH-1 crashed in Lamu County, Kenya, close to the border with Somalia. The 8 occupants of the helicopter died in the crash.

Elmina plane crash

On 17 August 2023, a Beechcraft 390 Premier I business jet crashed onto an expressway interchange near Elmina in Sungai Buloh, Selangor, Malaysia, killing 10 people. The aircraft was travelling from Langkawi International Airport to Sultan Abdul Aziz Shah Airport when the plane crashed two minutes prior to landing.

Manang Air helicopter crash

On 11 July 2023, a Manang Air Eurocopter AS350 carrying five passengers (all Mexican nationals) and one pilot was scheduled to travel from Surke, Solukhumbu to Kathmandu in Nepal. The aircraft set off from Solukhumbu at 10:05 a.m. local time and lost contact less than 10 minutes later, at 10:13 a.m. It was later found crashed in Chihandanda of Lamjura in Likhupike, Solukhumbu, due to bad weather.



Manaus Aerotáxi Embraer Bandeirante crash

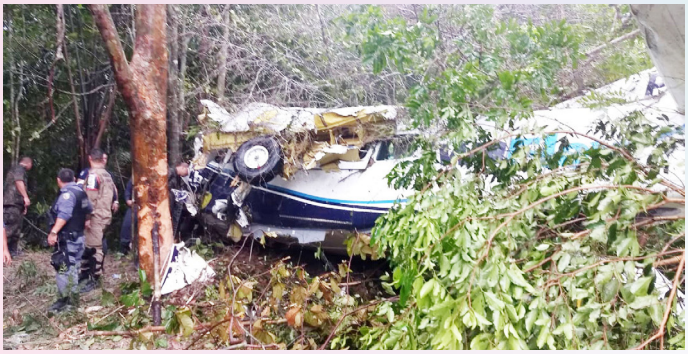
On 16 September 2023, an Embraer 110 Bandeirante of Manaus Aerotáxi crashed on approach. The crash occurred as the aircraft was attempting to land at Barcelos Airport while performing a go-around, killing all 14 occupants on board. All the occupants on board were tourists going to a fishing competition in Rio Negro.

Rajasthan MiG-21 crash

On 8 May 2023, a MiG-21 crashed in the Indian state of Rajasthan, in Hanumangarh. A mechanical issue caused the Indian Air Force (IAF) fighter aircraft to crash after taking off from the Suratgarh airbase during regular exercise, killing three people and injuring three more.

Rio Branco Cessna Grand Caravan crash

On 29 October 2023, a Cessna 208B utility aircraft operated by ART Táxi Aéreo crashed and exploded shortly after takeoff from Rio Branco International Airport, killing all 12 people on board



Chrcynno Cessna Grand Caravan crash

On 17 July 2023, a privately owned Cessna 208 aircraft with three people on board crashed into a hangar at an airfield in Chrcynno, Poland. Six people – the plane's pilot and five people who were inside the hangar at that time – were killed and seven others were injured. The crash was the deadliest aviation accident in Poland since 2014, when eleven people died when a Piper PA-31P Navajo crashed near Topolów.

Yeti Airlines Flight 691

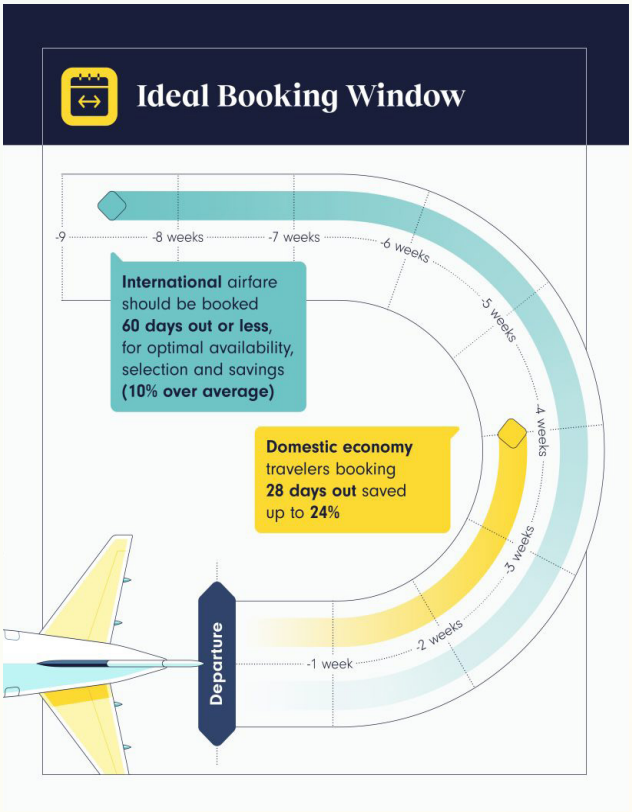
Yeti Airlines Flight 691 was a scheduled domestic passenger flight from Kathmandu to Pokhara in Nepal. On 15 January 2023, the aircraft being operated on the route, an ATR 72 flown by Yeti Airlines, stalled and crashed while landing at Pokhara, killing all 72 occupants on board.

2023 Hamburg Airport hostage incident

On 4 November 2023, 20:00 CET time, an armed man drove through a security barrier and onto the tarmac at Hamburg Airport in Germany. The man parked his car under a plane with his four-year-old daughter. The man shot a weapon twice in the air and threw burning bottles from his vehicle. He was arrested without resistance ending the 18-hour standoff.

2024 AIR TRAVEL HACKS REPORT

By Evans Kimani



According to new research from Expedia®, air travel is a leading cause of stress for 55% of travelers. To help break the cycle of stress, Expedia has released its 2024 Air Travel Hacks Report, unpacking data-backed strategies for saving money and reducing stress.

Highlights from this year's report include:

- Domestic airfare should be booked 28 days before departure; travelers saved up to 24% compared to those who booked at the last minute, surpassing the 10% savings travelers saw on average in 2022.
- International airfare should be booked around 60 days out (and no more than 4 months out) for optimal availability and savings (around 10% on average). Last year, the sweet spot was closer to six months out.
- Sunday remains the cheapest day of the week to book flights, while Fridays are most expensive. On average, travelers saved up to 13%.
- Fly before 3 p.m. to minimize the impact of delays and cancellations. Flights departing after 3 p.m. statistically have a 50% higher chance of being canceled than earlier flights.
- There's officially no bad time to book, with Expedia's Price Drop Protection: More than a quarter (28%) of travelers continue checking ticket prices even after they've booked, but this new product issues a refund if the price of the ticket drops on Expedia after booking.

The analysis also found that average ticket prices remain nearly flat compared to last year and flight cancellation rates have improved (1.7% of flights compared to 4.1% in 20223), positive trends for travelers that cited finding a good deal (61%) and worrying about disruptions (28%) as big contributors to stress.

"No way should people rather get a cavity filled than go on a trip, so thank goodness a lot of the things causing travel-related stress are getting better," said Melanie Fish, head of Expedia Group Brands public relations.

"Fewer flights are being canceled and technology is helping with tools in the Expedia app like Price Tracking and Price Drop Protection that make the whole booking and flying journey smoother."

Expedia's annual Air Travel Hacks Report is backed by an analysis of billions of data points and the most extensive air ticketing database in the world through collaboration with Airlines Reporting Corporation (ARC) and OAG.

"Airlines are adding capacity and increasing service to meet the sustained air travel demand we've seen throughout 2023," said Chuck Thackston, managing director of data science and research at ARC. "Air travel has proven resilient over the past few years, with travelers increasingly taking to the skies for both business and leisure. Fortunately for those travelers, the cost of airfare has been below 2022 levels for most of the year."

Full Report for 2024

When to Book

Book airfare on a Sunday to save up to 13%. Travelers who book on Sundays instead of Fridays tend to save, on average, around 6% on domestic flights and 13% on international flights.

Book domestic flights at least a month before to save 24%. Travelers that booked 28 days prior to departure saved 24% on average compared to those who waited until the last minute.

Book international airfare around 60 days out, and no earlier than four months in advance, for optimal availability, selection and savings. Travelers who booked 60 days out saved around 10% compared to those that booked further out, as average ticket prices peaked around four months from departure.

When to Travel

Depart on a Thursday to save up to 16%. Avoid departing on Sundays, which are the priciest days, on average, to start a trip.

Depart before 3 p.m. to reduce chance of cancellations. 32% of air travelers try to avoid morning flights because getting up early on the day of travel gives them additional stress. However, year-to-date flight status data reveals flights that depart after 3 p.m. have a 50% higher chance, on average, of being cancelled than those that depart earlier in the day.

Money-Saving Tools

Price Drop Protection: This year's data shows that the prices of international flights sometimes drop a few days before departure, but waiting until the last minute can be risky and often means limited selection and availability.

Price Drop Protection lets travelers get an automatic refund if the price of their flight becomes cheaper on Expedia after they book. Available for a nominal fee, or free for Gold and Platinum tier One Key members on the Expedia app.

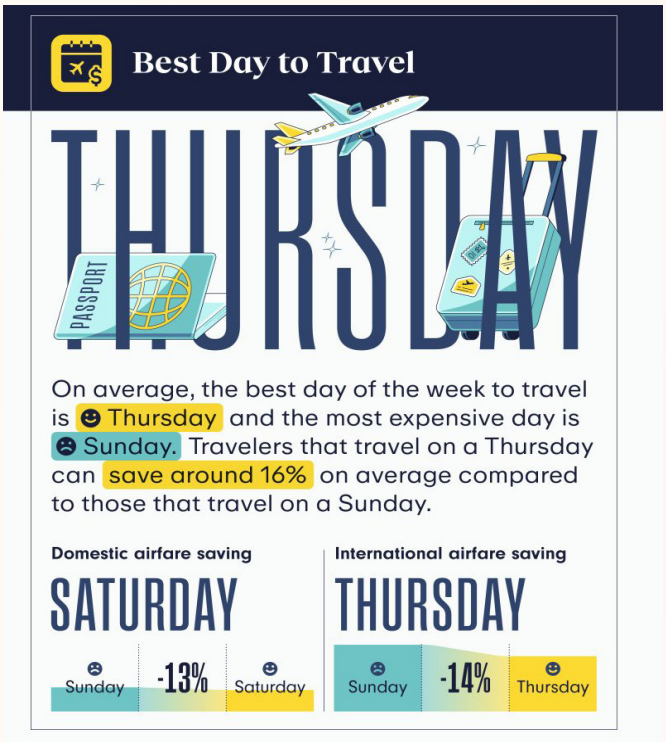
Price Tracking: Take the guess work out of deciding when to book with Price Tracking on the Expedia app, which notifies travelers when flight prices change and uses exclusive data to help travelers decide when to book.

Bundling: With flights, car rentals, hotels and activities, Expedia offers a wide selection of customizable vacation packages in one place, allowing travelers to save hundreds of dollars on average when booking multiple items on Expedia. Whether booking items together in the same transaction or in steps, travelers also have their itinerary all in one place making it easier to keep track of their journey.

2024 Air Travel Trends

- Capacity has grown and average ticket prices are stabilizing: While both the number of scheduled short-haul and long-haul flights is nearly at 2019 level, average ticket prices have decreased by up to 3% compared to 2022.
- Trending destination: The fastest growing destination, according to Expedia flight demand data, is Beijing (China).

Expedia is owned by Expedia Group, Inc. is an American travel technology company that owns and operates travel fare aggregators and travel metasearch engines, including Hotels.com, Vrbo, Travelocity, Hotwire.com, Orbitz, Ebookers, CheapTickets, CarRentals.com, Expedia Cruises, Wotif, and Trivago.



CLOUD MIGRATION

On how it can benefit airports

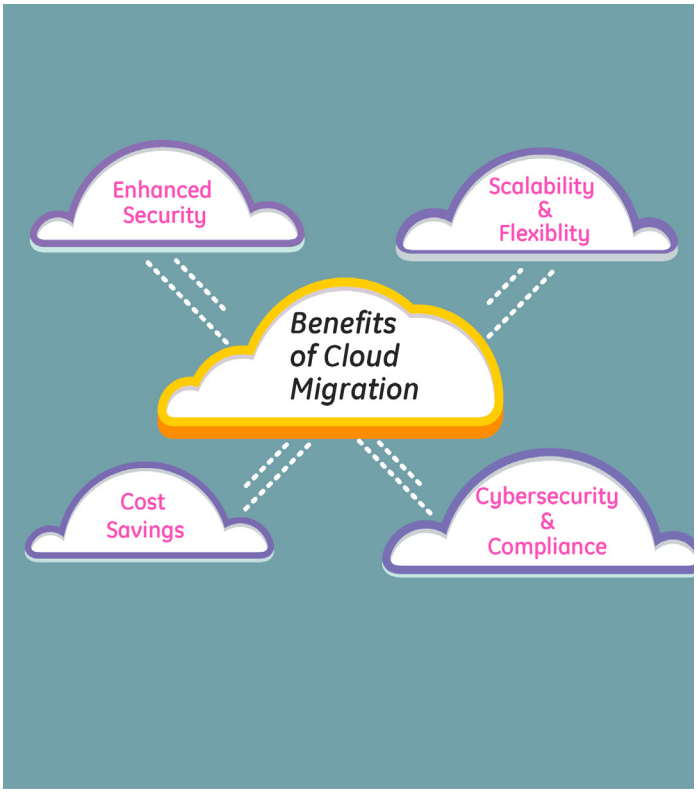
By Evans Kimani

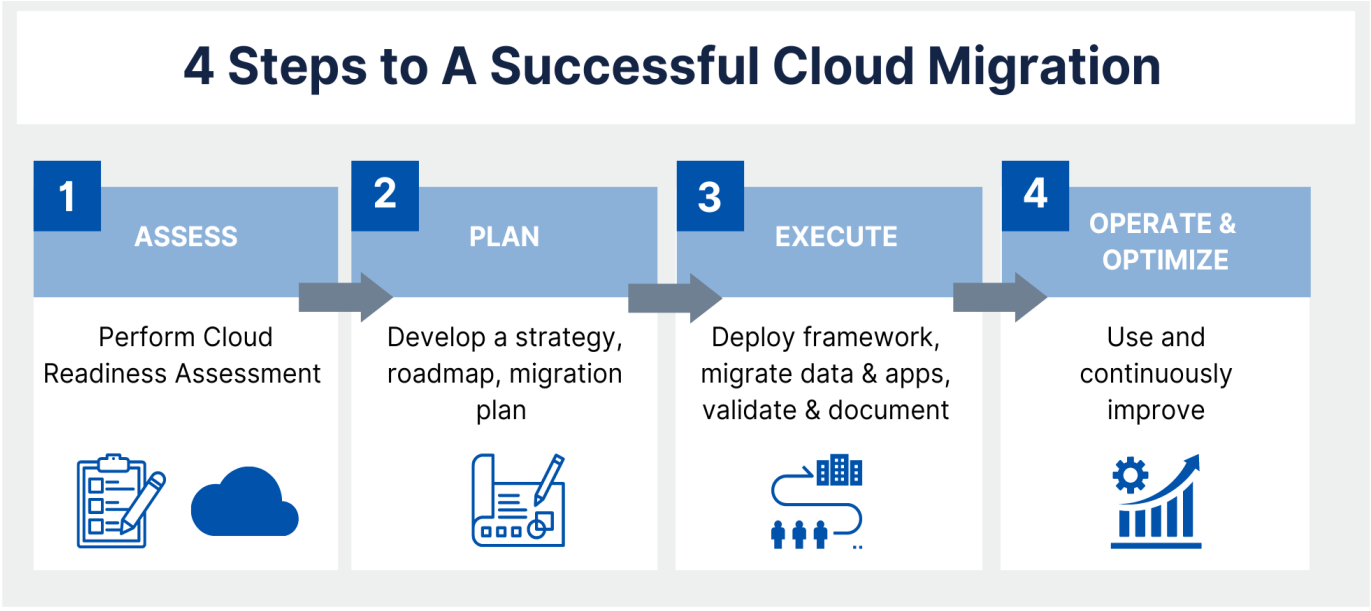
Accenture defines cloud migration as a process of moving a company's digital assets, services, databases, IT resources, and applications either partially, or wholly, into the cloud.

The global pandemic has seen more and more companies accelerate their move to the cloud, reinventing their offerings, and becoming more cost-efficient, agile, and innovative in how they operate their businesses.

As an on-demand, self-service environment, cloud is now vital to achieving end-to-end digital transformation. Now, more than ever, cloud is vital to help businesses reopen, reinvent, and outmaneuver uncertainty.

In the Aviation Industry, cloud migration has numerous advantages. Below, we delve into how cloud migration can be of beneficial to airports world-wide.





Increased Operational Resiliency.
Migrating legacy, on-premises systems to the cloud can help airports increase efficiency across multiple areas, from runway, baggage, and facilities security to check-in, bag drop, and off-airport processing.

Airports can migrate almost any workload to the cloud from an on-premises environment or hosting facility. Airport management can rely on the cloud and solutions providers' years of experience to build organizational, operational, and technical capabilities that can accelerate business benefits.

Modernizing airport IT architecture to fully cloud-based or a hybrid deployment can improve operational resiliency by improving agility and flexibility across systems, lowering costs, reducing on-site administration, decreasing deployment time, and improving scalability.

Decreased Carbon Footprints

Most airports have at least three main data centers; two on the airport campus and one off-airport, usually in a shared data center location. These data centers require immense amounts of energy to power equipment and provide cooling, and often aren't optimized with energy efficiency and sustainability in mind.

The data centers designed, built, and operated by leading cloud providers are more energy efficient than enterprise sites due to comprehensive efficiency programs that touch every facet of the facility. For example, when the carbon intensity of consumed electricity and renewable energy purchases are factored in, the data centers operated by AWS perform the same task with an 88 percent smaller carbon footprint.

Improved Passenger Experience

The use of a cloud solution – such as AWS – with today's advanced applications can enable airports to integrate their legacy and cloud-based systems into a cloud-based common-use system. This allows passengers to retrieve data from all airlines for a seamless experience.

For example, Collins Aerospace's ARINC cMUSE (Multi-User System Environment) is a next-generation common-use passenger processing system (CUPPS) that allows multiple airlines to share check-in desks and boarding gate positions at an airport rather than having their own dedicated infrastructure. Collins, in collaboration with AWS, offers full or partial cloud-based deployment options, providing additional flexibility, scalability, and efficiency.

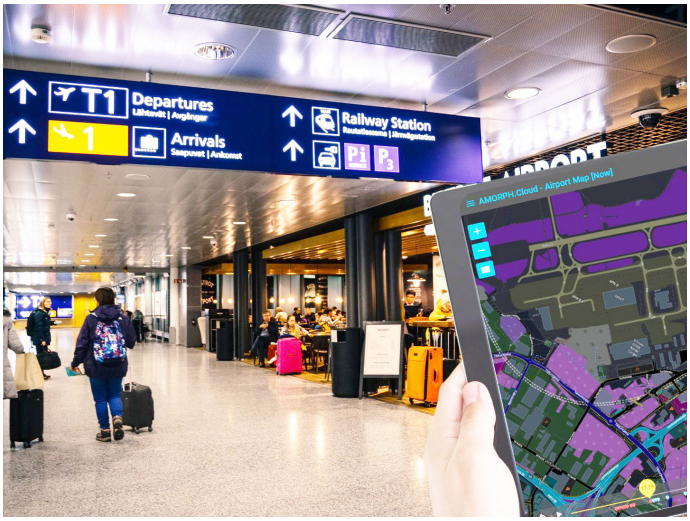
While every airline's check-in process is different, cMUSE enables passengers to access check-in information for multiple airlines at one desk or kiosk, making a more streamlined experience for both airline employees and passengers.

Increased Innovation

Airports that have transitioned to the cloud have the ability to exercise more flexibility to innovate better and deliver value faster. Cloud technology allows organizations to take an iterative approach to refining a particular connected airport solution based on customer feedback and changing business needs – and become a more intelligent airport.

Utilizing on-demand, globally available computing power and storage, while paying only for what you use, gives airports the freedom to strategically direct resources and invest in innovation if they so choose. Cloud services ranging from data lakes and serverless computing, to artificial intelligence (AI) and machine learning (ML), provide organizations with the ability to move faster, iterate, and quickly deliver business and customer outcomes.

Credit: Ryan Schradin



Explained:

By Maximillian Philberth

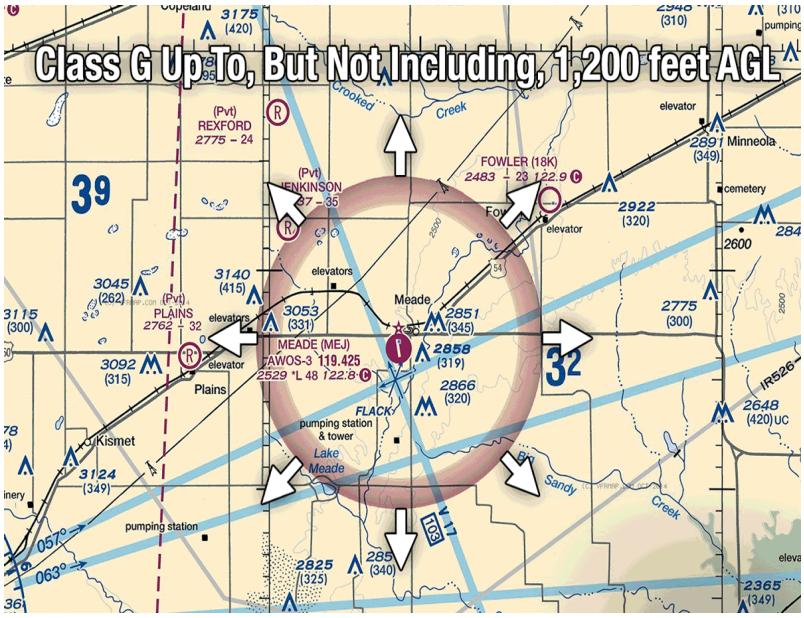
Class G airspace is the only form of "uncontrolled" airspace in the United States It isn't charted, and it exists wherever Class A, B, C, D or E doesn't. But to truly understand Class G airspace, it helps to understand Class E airspace fir

What Is Class G Airspace?

Like Class E airspace, you can fly through Class G airspace at airports (the "terminal environment") and while en-route. However, Class G airspace isn't controlled. Neither VFR (Visual Flight Rules) nor IFR (Instrument Flight Rules) aircraft need an ATC clearance to operate in Class G airspace.

How to Find It

Class G airspace exists wherever Class A, B, C, D or airspace doesn't. Practically speaking, it starts at th surface and extends up until it hits Class E airspace



On a map, Class G's ceiling is the floor of Class E airspace. And, it's always exclusive. For example, if Class E starts at 700 feet AGL, Class G goes up to, but doesn't include, 700 feet AGL.

Class G airspace is most easily found on a sectional map when a fading, thick blue line appears. This line shows enroute Class E airspace starting at 1,200 ft AGL on the soft side of the boundary. What's below it? Class G. There's a Class E/G boundary on the hard side of the line as well. In this case, Class E starts at 14,500 feet MSL, and Class G is below it.

It's pretty easy to find these airspace markings in the Western US, but on the East Coast, it's rare to find airspace designated in this way.

Class G Up To 700' AGL

If Class E starts at 700' AGL, Class G starts at the surface and extends to - but doesn't include - 700' AGL. This is called a 'transition area', where VFR and IFR traffic are separated around an airport to avoid conflicts or collisions.

Class G Up To 1,200' AGL

In the airspace highlighted below, Class E starts at 1,200' AGL, so Class G automatically starts at the surface and extends to - but doesn't include - 1,200' AGL.

Weather Requirements

Class G minimum weather requirements exist so that you can see and avoid other aircraft and stay out of the clouds. Let's break the minimums down into three major categories:

1) 1,200 feet AGL and lower
2) Above 1,200 feet AGL, but lower than 10,000 feet MSL
3) 10,000 feet MSL or higher

So why is there a difference in weather minimums at different altitudes? Because starting at 10,000' MSL, you can fly faster than 250 knots, and you need more visibility and distance from the clouds to see and avoid other aircraft.

Communications

A pilot does not need to talk to anybody in Class G airspace. However, when flying into an uncontrolled Class G airport, it is recommend that a pilot communicates his or her position at all times.

While landing at an airport in Class G airspace, you don't need to talk to anyone or make any radio calls. However, it's strongly recommended you do. The AIM suggests that you make position calls around the airport at these points:

- 10 miles away from the field
- 5 miles away from the field
- Airfield overflight (if necessary)
- 45 degree entry to the downwind
- Downwind
- Base
- Final

Restrictions

In Class G, you can't fly faster than 250 knots when you're below 10,000' MSL. By limiting planes from going faster than 250 knots below 10,000', it's easier for planes to see and avoid each other, helping reduce the chance of mid-air collisions.

Equipment

If you're below 10,000 feet MSL, there's NO required equipment. But if you're 10,000 feet MSL or higher, and more than 2,500 feet AGL, you'll need a Mode-C transponder.

Source: Boldmethod

HOW STRONG IS YOUR PASSPORT?

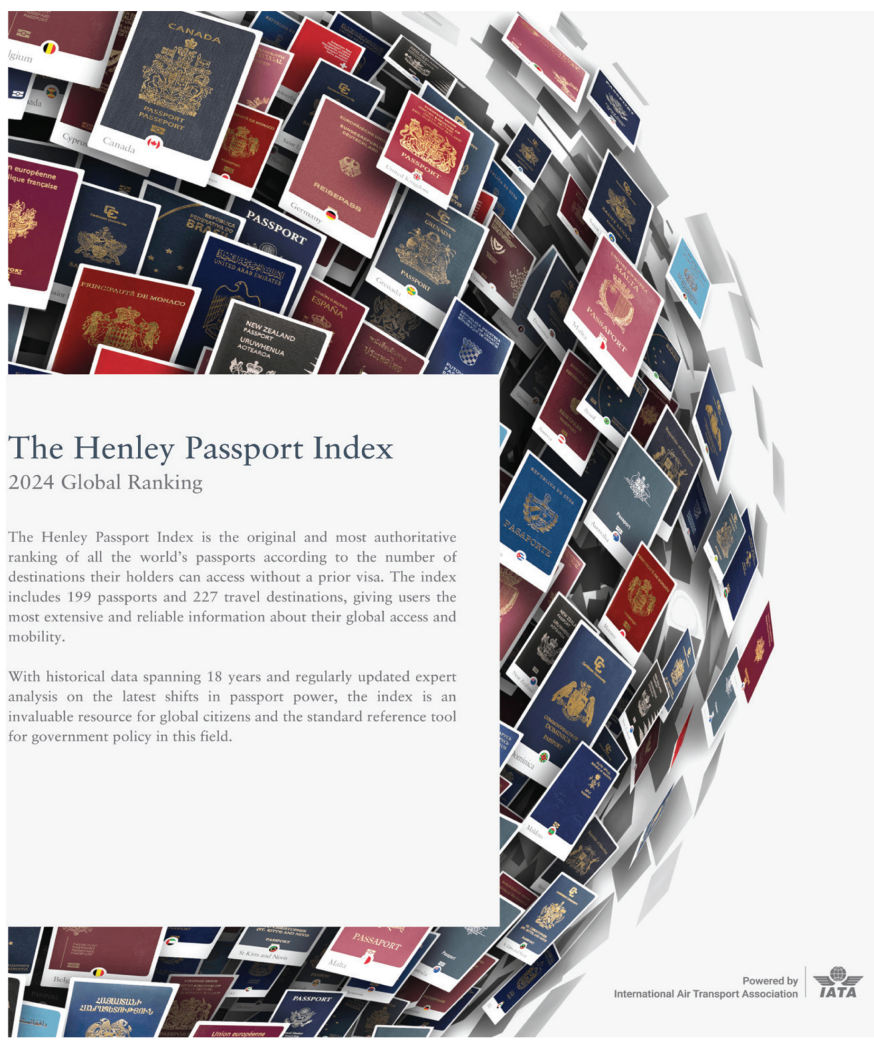
Henley & Partners release 2024 Global Passport Index Ranking

The Henley Passport Index is the original and most authoritative ranking of all the world's passports according to the number of destinations their holders can access without a prior visa.

The index includes 199 passports and 227 travel destinations, giving users the most extensive and reliable information about their global access and mobility.

With historical data spanning 18 years and regularly updated, expert analysis on the latest shifts in passport power, the index is an invaluable resource for global citizens and the standard reference tool for government policy in this field.

The Aviator Africa has reproduced the Henley passport index global ranking for the year 2024 and below is the ranking.



France, Germany, Italy, Japan, Singapore and Spain all come in the 1st place with a visa free score of 194. Finland, South Korea and Sweden closely follow in number two with a visa free score of 193. In number three is Austria, Denmark, Ireland, and the Netherlands with a Visa free score of 192.

Belgium, Luxembourg, Norway, Portugal, United Kingdom all come in number four position on the ranking with a visa free score of 191. Greece, Malta, and Switzerland all tie at number five with a visa free score of 190.

In number six is Australia Czechia, New Zealand and Poland with a visa free score of 189. Canada Hungary, United States, follow in position seven with a visa free score of 188, which are also closely followed by Estonia and Lithuania in number eight with a visa free score of 187.

Latvia 186 Slovakia and Slovenia were ranked number nine with a Visa free score of 186 and Iceland was ranked tenth on the Henley Passport Index 2024 global ranking with Visa free score of 185.

In Africa Seychelles was the most highly ranked country with a Visa free score of 156 which came in number twenty-six with Mauritius coming in number two on the African continent with a Visa free score of 150 and was ranked 30th on the global scale.

The lowest ranked country in the world with the lowest Visa free score in the year 2024 is Afghanistan which came in 104th position with a visa free score of just 28.

In Africa, Somalia was the least ranked country which came in number 99 with a Visa free score of 36. The Visa free score means the number of countries a passport holder of that country can visit without the need for a Visa.

Understanding Runway Incursions

James Kamali
Jk2000@gmail.com

A runway incursion is any occurrence at an aerodrome involving the incorrect presence of an aircraft, vehicle or person on the protected area of a surface designated for the landing and take-off of aircraft.
(Source: ICAO Doc 4444 - PANS-ATM)
Note: the 'incorrect presence' may be a consequence of a failure of a pilot or vehicle driver to comply with a valid ATC clearance or their compliance with an inappropriate ATC clearance.

Effects

An increased risk of collision for aircraft on the ground. When collisions occur off the runway, the aircraft and/or vehicles involved are usually travelling relatively slowly: in contrast, when a collision occurs on the runway, at least one of the aircraft involved will often be travelling at considerable speed which increases the risk of significant aircraft damage and the severity of the consequences therefrom, including serious or fatal injury.

Most Common Runway Incursion Types

- According to the analysis of a sample of investigated accidents and serious incidents involving runway incursions which occurred in the period 2014-2016, the following generic types can be distinguished:
- Incorrect entry of an aircraft or vehicle onto the runway protected area (without or contrary to ATC clearance or due to incorrect ATC clearance)
- Incorrect presence of a vacating aircraft or vehicle onto the runway protected area
- Incorrect runway crossing by an aircraft or vehicle (without or contrary to ATC clearance or due to incorrect ATC clearance)
- Incorrect spacing between successive arriving or arriving and departing or departing and arriving aircraft
- Landing without ATC Clearance

- Take-off without ATC Clearance

Typical Scenarios

- ATCO-induced situation; the controller does not ensure sufficient spacing between two successive landing aircraft or between the preceding departing aircraft and the succeeding landing aircraft, and issues the landing clearance to the succeeding aircraft which causes the infringement of the applicable runway use spacing/separation minima.
- Flight Crew-induced situation; an aircraft lands at an unfamiliar airport and the flight crew becomes disorientated as they exit the runway. Despite this, they acknowledge taxi instructions and without being confident of their position or the taxi route given, continue taxing and inadvertently enter an active runway.
- Vehicle driver-induced situation; the vehicle driver is not sufficiently familiar with the maneuvering area layout at an airport (e.g. due to inappropriate training and lack of formal runway access approval dependent upon satisfactory training completion) and misinterprets the runway entry clearance issued by ATC which causes him

to enter the runway at the incorrect position.

Contributory Factors

- Weather; Low visibility may increase the chance of flight crew becoming disorientated and unsure of their position whilst taxying. Low visibility is also likely to restrict a controller's ability to identify and follow aircraft visually so that cross-checking a reported aircraft position with its actual location may become impossible unless Surface Movement Radar is available.
- Aerodrome design; if, as a consequence of aerodrome design, aircraft have to cross active runways to move between their take-off or landing runway and their parking position, the likelihood of runway incursions is increased. This risk may be reduced if the LRST identifies the Runway Hotspots thereby created and effective risk mitigation is developed and applied. Operation with intersecting active runways is also likely to require careful consideration to ensure that the inherently increased risk of conflict is adequately managed.
- Multiple Simultaneous Line-ups; Use of Multiple Line-ups for a series of aircraft departures from the same runway from different entry positions may increase the potential for runway collision.
- Conditional Clearances; if conditional clearances are used, the risk consequent upon any error in their issue or actioning may be increased because of errors in aircraft identification by adjacent aircraft. The chances of such errors are increased if aircraft livery does not readily correspond to the RTF callsign being used; this is sometimes the result of airline alliance livery policies or the ad hoc operational substitution of leased-in aircraft.
- Concurrent Use of More than One Language for ATC communications; at some international airports, locally-based users are permitted to communicate in the local language whereas foreign aircraft do so in English. Depending on the nature of the local language and the language skills of the visiting flight crew, this may have the effect of significantly reducing their awareness of the relative position of other traffic.
- English Language Competence Despite the introduction by ICAO of a system of validating competence in Aviation English, instances of pilots whose native language is not English misunderstanding taxi clearances still occur.

Workload.

Pilot Workload. Shortly after landing, flight crew have to orientate themselves quickly in respect of their actual position in relation to taxiways and the airport layout. After clearing the landing runway, they also have to reconfigure aircraft systems in accordance with the After Landing Checks and may receive detailed taxi instructions from ATC.

Controller Workload; Controllers handling multiple aircraft movements and handovers have relatively little time available for monitoring individual aircraft to confirm that they are taxiing in accordance with their clearances.

Defenses

- Available defenses relate to both the occurrence of runway incursions and the danger thereby created. The role of Safety Nets as a last line of defence against error is increasingly valuable at busy airports with complex movement areas. Not in any order of significance these defenses include:
- Maintenance of situation awareness by flight crew and others using the maneuvering area, specifically in respect of their own location in relation to active runways, and that of other aircraft and vehicles relative to active runways.
- Flight Crew use of the TCAS display to provide situational awareness of other aircraft both in the air and on the ground.
- Effective flight crew use of appropriate features of RAAS if installed
- Use of ICAO Standard Phraseology at all times to minimize any risk of clearance confusion.
- Presence of ICAO standard Runway Markings and Taxiway Surface Markings and Signs
- Presence of ICAO standard Runway Lighting and Taxiway Lighting including the installation of Runway Status Lights (RWSL) and Runway Holding Point Lighting.
- Controllers working traffic where the flight crew are not native speakers of English should pay particular attention to their speech clarity, use only standard phraseology and make a particular effort to closely monitor readbacks of taxi clearances.

Source: skybrary.aero

PILLARS OF URBAN AIR MOBILITY

Urban Flying Taxi Services, also referred to as Urban Air Mobility (UAM), is the use of helicopters, electric vertical take-off and landing (eVTOL) aircraft, unmanned aerial system (UAS), and short take-off and landing (STOL) aircraft for the transportation of people and goods in urban and suburban areas.

These flying taxis, which will use airspace as airport shuttle, intercity and inner city transport, are anticipated to be a solution to urban traffic congestion in large cities bringing faster travel times, lower carbon emissions, and enhanced connectivity. There are also a lot more potential uses for flying taxis both inside and outside of metropolises, such as emergency and humanitarian services, medical applications, recreation and scenic flights, just to mention a few.

By Maximillian Philberth

Pillars of Urban Air Mobility -UAM

In their collective and varied individual capacities, stakeholders should think about and develop the following underpinning core areas or pillars in order to make urban air mobility (UAM) a reality with a sustainable and dependable existence.

1. Flying Vehicle

When flying taxis are introduced into the urban air transportation market, they are flown by pilots. As technology advances and is accepted by the public and users, they'll become fully autonomous. A Flight Management System (FMS), which can optimize a planned trajectory from one location to another and deliver it to the pilot or autopilot, is one of the elements that flying taxis should have. They should also have a Flight Control System (FCS) to steer the vehicle to follow the intended trajectory, an Energy Management System (EMS) to optimize the use of available energy sources (battery or hybrid - battery,solar cells and fuel) during each phase of the flight, and a Traffic Management System (TMS) to prevent collisions with other aircraft.

2. Flight Data and Traffic Management

The underlying requirements for the safe and seamless movement of urban air flying vehicles are the establishment and implementation of complex, secure, scalable, flexible, and adaptable air traffic management systems.

In addition to mitigating the risk of accidents both in the air and on the ground, the system needs to enable high density operations at optimal costs while closely adhering to strict aviation safety standards. It must also allow flying vehicles to coexist with military and civilian aircraft operations.

To foster efficiency and innovation , flight data and traffic management services can be competitively provided by the specialized and licensed/authorized Urban airspace service providers or U-Space service providers (USSPs). These USSPs will offer identification and authorization services using common and shared information services data.

Additionally they will offer Traffic information services including geo awareness services so as the flying taxis know permitted flying zones, forbidden flying zones and caution zones where extra attention is required. It is also important for USSP to provide flying taxis with trajectory management involving flight planning,tracking services,and strategic deconfliction

of vehicles. Flying vehicles should be equipped with Airborne Collision Avoidance System (ACAS) for detection and avoidance of collision with nearby vehicles and buildings as well as vehicle to vehicle communication.

3. Regulations

Urban air mobility rules and regulations are necessary to integrate flying taxis into the current airspace structures, reduce risks that could jeopardize people's safety, privacy, or the environment, and to create opportunities for flying taxi technology and services including crew licensing, airworthiness and operations certifications.

The Federal Aviation Administration (FAA) of United States and its European counterpart ,the European Aviation Safety Agency (EASA) have begun developing the UAM regulatory framework, building notably on eVTOL's design, production, airworthiness, and operation requirements, pilot licencing, vertport design standards, and U-Space/Urban Traffic Management (UTM) regulations.

4. User and Societal Acceptance

Success will depend heavily on the acceptance and confidence of citizens and future Urban Air Mobility - UAM users. They ought to reap the rewards and be drawn in to demonstrate a positive mindset, show interest in UAM, and decide to give it a try.

Urban mobility stakeholders must collaborate in order to meet the needs of the general public. They must interact with the public and the mobility ecosystem, investigate opportunities and problems, and fully use UAM's potential to provide safer, faster, cleaner, and expanded connectivity. It's also critical

to incorporate UAM into the current air and ground infrastructure in a way that addresses cyber threats and terrorism,enhances preventive measures, and keeps noise, security, and environmental impact to a minimum.

5. UAM Infrastructure

The architecture of the UAM transport network should be built with capability to manage the required traffic volume effectively and flexibly while offering a notable high speed and low latency mobility services . In order to facilitate people switching from one mode of transportation to the UAM, vertidromes (UAM aerodromes, allowing vertical landing and taking of eVTOL and short take off and landing of STOL) must be located in spots with adequate throughput capacity. Design guidelines are outlined in FAA's Engineering Brief Number 105 for both public and private vertiports and vertistops.

Conclusion

Urban air mobility presents noteworthy prospects and milestones in the field of urban transportation; yet, it also faces formidable obstacles related to its operational, technological, legal, and reputational frameworks.

Strong winds, windshear, turbulence, and thunderstorms are examples of adverse weather conditions that might compromise flying taxi safety, passenger comfort and operating downtime.

Additionally, the payload and operational range of present battery technology are restricted by the available power; hence, advancements in energy density and/or in-flight charging are necessary to enable extended operations.

Navigating the Future of Air Travel

Jane Makena

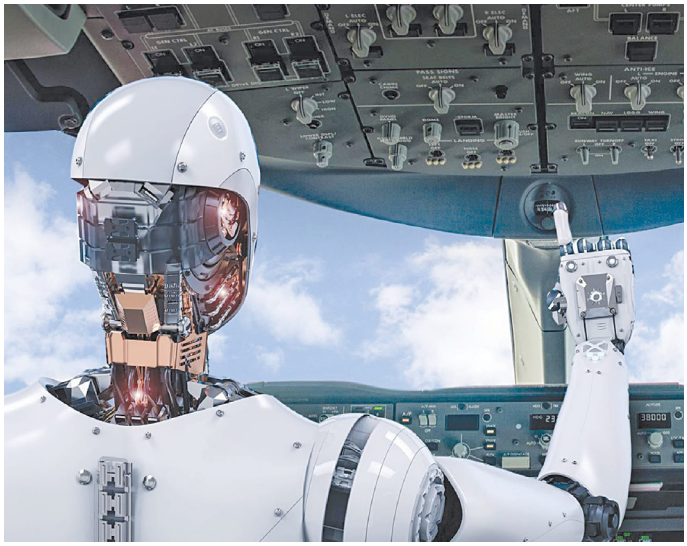
In the ever-evolving realm of air travel, the coming year holds a multitude of developments and challenges. Here, we navigate through the trends and issues that will define the aviation landscape in 2024.

The skies may present challenges, but they also offer opportunities and innovations that will shape the future of air travel. Here's what is anticipated to shape our journeys through the skies next year.

1. Soaring Prices or Smooth Sailing? Unpacking 2024 Fare Predictions

In 2024, expect a continuation of the status quo in flight prices, with minor fluctuations. Off-peak seasons may offer some relief due to softened demand, but the underlying factors, such as increased salaries and fluctuating oil prices, suggest a stable rather than cost-saving experience.

Keep an eye on routes with additional capacity, particularly in the transatlantic sector, as legacy carriers, led by United Airlines, open new routes, potentially influencing fare dynamics.



2. Turbulence Ahead: Persistent Disruptions and Global Issues

The year 2024 won't be without challenges. Lingering disruptions from the previous year and global issues may impact the aviation industry. The Pratt & Whitney engine problem is expected to peak, potentially grounding up to 300 aircraft globally at any given time.

Carriers like Lufthansa, Indigo, Delta Air Lines, Wizzair, and Virgin Atlantic may experience disruptions from these delays. Some airlines, however, might find opportunities with these engine delays. With reduced capacity, they have an opportunity to exert higher fares.

Boeing's recent backlog issues add another disruption for airlines that simply don't know when their new aircraft will be arriving next year, making planning a bit difficult for some.

3. Business Travel 2.0: Short-Haul Sector Faces Uphill Climb

The return of business travel has started post-pandemic, but not all sectors will recover at the same pace. Short-haul business travel may continue to lag behind, as video calling and conferencing options prove to be more time and cost-effective for many professionals.

Then in Europe, regulators are impacting short hall travel with new regulations. With a goal of cutting carbon emissions, new regulations have been put in place that ban short distance travel via plane. For example, in France, the Government has banned flights from domestic airports within a four hour train journey of Paris.

4. AI Takes the Pilot's Seat:

Innovations in the Industry
Technological advancements will continue to take center stage in 2024. While drones and VTOLs remain on the horizon, Artificial Intelligence (AI) applications are set to revolutionize the aviation landscape.
We can expect transformative changes with AI, from optimizing operations to enhancing passenger experiences, AI will continue to be a driving force behind industry advancements.

5. The Dogfight for Dominance: Low-Cost Carriers (LCCs) vs. Legacy Giants

The struggle for market share and profitability continues in 2024 between Low-Cost Carriers (LCCs) and legacy giants. Both entities will compete vigorously, with legacy carriers challenging the LCCs. However, LCC's will need to persevere to secure their market share and revenue.

Consumers will always come back for a low fare –and that's helping LCC's maintain a competitive stance. There is a growing share of capacity behind flights operated by LCC's. Some of the U.S.'s largest airports have seen a huge boost in flights operated by LCC's in the past 3 years, and that's expected to grow.

Credit: John Grant

Taxiing rules, Procedures and practices

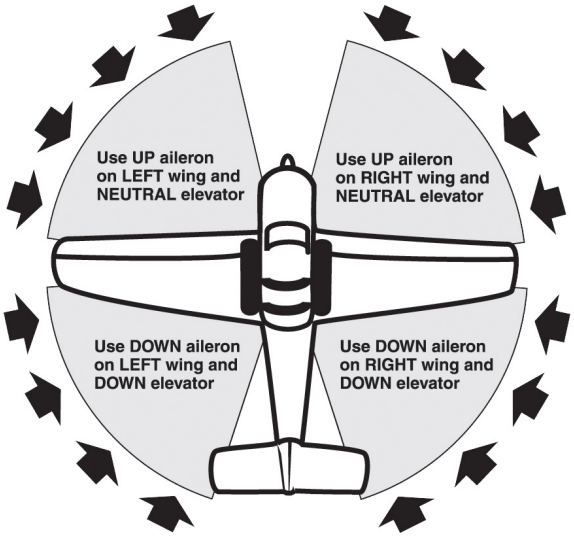
Every taxi out and taxi in is one-of-a-kind. Fast or slow, long or short, smooth or jolting, every taxi experience is influenced by rules, weather conditions, delays, and pilot preferences. Many things determine the speed of an aircraft taxi, and this article is meant to give you insights into many of them.

Taxi speeds are usually 30 knots on straight lines and 10 knots for turns. Slower speeds are imposed during low visibility or adverse weather conditions.

Pilots rely on GPS-derived ground speeds, as airspeed indicators are unreliable at taxi speeds. With experience, pilots can gauge their speed without referencing GPS.
Efficient taxiing is essential for on-time performance, especially for airlines with shorter flights. However, factors like engine warm-up time and flight attendant briefings may slow down taxi speeds. Ultimately, the pilot influences the taxiing experience.

Taxi tidbits

Taxiing is generally the responsibility of the captain. Every passenger airline in the US uses captain-only taxi procedures. In contrast, a handful of airlines globally allow first officers to taxi if they are also the pilot flying on that leg. A tiller must be installed on the pilot's side



of the flight deck to taxi an airliner. The tiller controls nose wheel steering while on the ground and can be used to turn at angles upwards of 70 degrees on some aircraft. Narrow body jets generally only have tillers installed on the captain's side of the flight deck, but many wide bodies, like the Boeing 777 and Airbus A350, have tillers on both pilots' sides.

Tax speeds, like many other stipulations, are mandated by the company. As general references, the maximum

taxi speed on a straight line is 30 knots, while a turn cannot exceed 10 knots. Sharper turns require even slower speeds.

Airlines impose slower speeds during low visibility, rainy, and icy conditions. Airliners can easily taxi on a single engine, but it's better to use two engines when the taxiways have ice or slush to enhance controllability.

Airspeed indicators on the pilots' primary flight displays don't reliably work until the plane is traveling somewhere between 30–40 knots. Pilots use GPS-derived ground speeds since maximum taxi speeds can't be measured using airspeed indicators.

These speeds are usually shown in the corner of the flight display. With experience, pilots have a pretty good sense of how fast they are going without referencing the GPS ground speed. It's like driving a car - it takes a bit of time to get a feel for a new vehicle, but after a while, you can tell how fast you are going without looking at the speedometer.

Influences on taxi speeds

It's no secret that some airlines have a reputation for taxiing faster than the perceived average speed. While this conjecture is hard to quantify, it does stand to reason that airlines that operate more short flights with their planes have a better chance of remaining on time if they can taxi efficiently.

In a previous article, the efficiency of taxiing was highlighted as the number one way to make up time. It's simple to understand that a crew flying a five-flight day spends vastly more time on the ground than a crew flying one or two legs. Taxi speed thus has a much more significant impact on the operational on-time performance.

Regardless of which airline you're on (and their perceived reputation for taxi speeds), some things will slow pilots down. The pilots might taxi slower when there is a very short taxi from the gate to the departure runway for a few reasons.

First, two to three minutes are needed between the completion of an engine start and setting takeoff power to allow the engine to warm up. Additionally, pilots must give flight attendants enough time to complete their briefings, perform safety checks, and take their seats.

Another reason pilots might taxi slower is if they have been given a takeoff time that is many minutes away, or if their gate is occupied upon arrival. As long as no one else is behind them, pilots will taxi more slowly since there is no sense in rushing to the runway holding area just to sit stagnant for even longer. People feel better when they're in motion in a plane instead of standing still, and a slower taxi helps many passengers feel a bit more at ease.

Conclusions

Hard-and-fast limits are in place that regulates taxi speeds, but the pilot who is conducting the taxiing has the most influence on your experience. Some pilots go as fast as possible regardless of the situation, others taxi well below the limits, and many others fall somewhere in between. Again, taxiing is comparable to driving a car. Rules are rules, but everyone has unique techniques for following them.

CREDIT: Jack Herstam

Accessories and equipments to keep in your plane

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Aircraft owners are very busy professionals as they fly their aircraft regularly across their destinations of interest. As they travel, they need equipment and accessories to enable them have both safe flight and enjoyable flights. Below are some of the most essential accessories and equipment that aircraft owners should keep in their planes.

Maintenance Kit, Oil, and Funnel

Having a basic maintenance kit with a screwdriver, swiss army knife, and hammer is important. In addition to that, keep at least 1 quart of spare oil with a funnel for quick servicing on your trips.

Cleaning Supplies

Keep a box with window and fuselage cleaning spray and rags, and always use a microfiber towel on the windscreen.

Jack Points

If you blow a tire, you'll need to jack up the airplane. And if the maintenance crew doesn't have jack points made for your plane, you might be stuck. You can't use the tie-down connection points, because they can bend, and the jack can slip off and puncture your wing.

Most manufacturers provide jack points to carry in your airplane that are designed to prevent this problem. Make sure you have them packed for your next flight.
Wheel Chocks and Tie-Downs
Most airports have tie-downs and chocks, but if they

don't, you're always prepared.

Water and Snacks

Having a small box with extra water and snacks is a good idea for normal operations, and an even better one in the case of an emergency.

Tow Bar

If you don't have one of these in your airplane, you could have a very hard pushing your plane onto a "T" or moving it around self-fuel. We've learned this one from experience!

Survival Kit

While the odds of being forced to use a survival kit are low, it's good to be prepared. If you have a forced landing late in the day, chances are search and rescue won't get to you until the following day.

Sun Visors

If you fly during daylight hours, you will need a sun visor to block out the sun. Most aircraft are designed with some type of sun visor, but the one that's in your plane may not offer you the level of protection that you need to see clearly. In fact, the visor that is in your plane is probably made out of fabric.

Although fabric visors work well when they are brand new, they begin to break down after prolonged exposure to the sun. Be sure that you find a sun visor that will hold up over time so you don't have to worry about being blinded by the sun in the middle of a flight.

Portable Smartphone Charger

Pilots are always on the go, which means their smartphones often begin to run low on battery when they need them the most. It's important to have a charged cell phone with you at all times as a pilot, so make sure that you have a portable smartphone charger with you. It's recommended that pilots use a cell phone case that doubles as a charger so they can keep it with them and attached to their phones at all times. When you notice your battery is beginning to run low, simply turn on the phone case and allow it to recharge your phone regardless of where you are.

You also have the option of bringing a power bank with you, which is a separate accessory that you can plug into your phone when your battery starts to run low. Power banks are compact, so you don't have trouble fitting one inside your flight bag.

GoPro Camera

It's hard to enjoy the incredible views from above when you have to focus on flying your plane, which is why a GoPro camera is a great accessory to have with you in the cockpit. Many pilots mount the camera behind them so they can capture a pilot's view from the cockpit.

Motion Sickness Medicine

Any pilot can develop a case of motion sickness while in the air, so it's best to keep a packet of motion sickness medicine with you at all times. However, be sure that you choose the type of motion sickness medicine carefully. You will need to read the label to ensure you don't choose a product that makes you drowsy.

There are many non-drowsy motion sickness medicines available, so finding one shouldn't be an issue. Keep a few packets of this medicine in your flight bag so you can easily reach them if you do start to feel nauseous while in flight. If you have a severe motion sickness problem, you want to bring a few motion sickness bags to have at your disposal as well.

Flashlights

Do you plan on flying at night? If so, it's important that you bring a flashlight with you in the cockpit. Even if there's a light inside your aircraft, it's often not strong enough for you to clearly read charts or checklists. These lights can also fail if the bulbs burn out or if your plane has an electrical problem. Instead of straining to see what's in front of you or worrying about what to do when the lights won't turn on, bring a flashlight so you have a back-up.

The type of flashlight that you bring is also important. It's recommended that pilots bring a red LED flashlight as opposed to a white LED flashlight. White LEDs do provide a lot of light, but white light can interfere with a pilot's vision.

When pilots or plane owners are equipped with the above mentioned accessories and equipments, pilots are assured of both a safe and enjoyable flight experience.

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The C-5M Super Galaxy is a strategic transport aircraft and is the largest aircraft in the US Air Force inventory. Its primary mission is to transport cargo and personnel for the Department of Defense. The C-5M is a modernized version of the legacy C-5 designed and manufactured by Lockheed Martin.

Currently the U.S. Air Force owns and operates 52 C-5B/C/M. They are stationed at Dover Air Force Base, Delaware; Travis AFB, California; Lackland AFB, Texas; and Westover Air Reserve Base, Massachusetts.

Features
The C-5M Super Galaxy is equipped with five sets of landing gear, 28 wheels, four General Electric CF6-80C2-L1F (F-138) commercial engines, and a state-of-the-art maintenance diagnostics system.

It can carry oversized cargo over intercontinental ranges and can take off and land on relatively short runways. Both the nose and aft doors open, allowing ground crews to simultaneously load and off-load cargo from both ends, reducing cargo transfer times. The full-width drive-on ramps at each end enable double rows of vehicles to be transported.
The maintenance diagnostics system has the ability to record and analyze data from more than 7,000 test points, reducing maintenance and repair time.

The C-5M, with a cargo load of 281,001 pounds (127,460 kilograms), can fly 2,150 nautical miles, offload, and fly to a second base 500 nautical miles away from the original destination all without aerial refueling. With aerial refueling,

the aircraft's range is limited only by crew endurance.

History
Lockheed-Georgia Co. delivered the first operational C-5A Galaxy to the 437th Airlift Wing, Charleston AFB, South Carolina, in June 1970.

In March 1989, the last 50 C-5Bs was delivered, adding to the already existing 76 C-5As in the Air Force's airlift inventory. The C-5B included more than 100 additional system modifications to improve reliability and maintainability. Additionally, in fiscal year 1989, two space cargo modified (SCM) C-5Cs were delivered.

The modification included removing the troop compartment, redesigning the aft pressure door and bulkhead, and widening the aft doors so the aircraft could carry the space shuttle's large cargo container. The two SCM C-5Cs were assigned to Travis AFB, California.

Based on a study showing 80 percent of the C-5 airframe service life remaining, Air Mobility Command began an aggressive program to modernize the C-5s in 1998. The C-5 Avionics Modernization Program included upgrading the avionics to improve communications, as well as upgrading the navigation, surveillance and air traffic management systems to maintain compliance with national and international airspace requirements. It also added new safety equipment and installed a new autopilot system.

Another part of the C-5 modernization plan was a comprehensive Reliability Enhancement and Re-engineering Program. The last of the Air Force's 52 C-5s are scheduled to complete the RERP modification in fiscal year 2018. The rest of the C-5 fleet entered retirement by September 2017.

The C-5 aircraft engines were upgraded from four General Electric TF-39 engines to General Electric CF6-80C2-L1F (F-138) commercial engines. This engine delivers a 22 percent increase in thrust, a 30 percent shorter take-off roll, a 58 percent faster climb rate, and will allow significantly more cargo to be carried over longer distances. With its new engines and other system upgrades, the RERP modified C-5A/B/Cs became C-5M Super Galaxies.

This modernization program also made the C-5 fleet quieter (Federal Aviation Administration Stage 4 Compliant), enhanced aircraft reliability, maintainability, maintained structural and system integrity, reduced cost of ownership and increased operational capability well into the 21st century.

Looking to the future, modernization efforts include incorporating advanced weather radar, mission computing, communication systems and air traffic management to meet FAA mandates and survivability in theater.

General Characteristics
Primary Function: Outsize cargo transport
Prime Contractor: Lockheed Martin-Georgia Co.
Power Plant: Four F-138-GE100 General Electric engines
Thrust: 51,250 pounds per engine
Wingspan: 222 feet 9 inches (67.89 meters)
Length: 247 feet 10 inches (75.3 meters)
Height: 65 feet 1 inch (19.84 meters)

Cargo Compartment:
Height: 13 feet 6 inches (4.11 meters)
Width: 19 feet (5.79 meters)
Length: 143 feet, 9 inches (43.8 meters)
Pallet Positions: 36
Maximum Cargo: 281,001 pounds (127,460 Kilograms)
Maximum Takeoff Weight: 840,000 pounds (381,024 kilograms)

Speed: 518 mph
Unrefueled Range of C-5M: Approximately 5,524 statute miles (4,800 nautical miles) with 120,000 pounds of cargo; approximately 7,000 nautical miles with no cargo on board.
Crew: Pilot, co-pilot, two flight engineers and three loadmasters.

The C-5M Super Galaxy is an upgraded version with new engines and modernized avionics designed to extend its service life to 2040 and beyond.

The C-5 Galaxy was a major supply asset in the international coalition operations in 1990–91 against Iraq in the Gulf War. C-5s have routinely delivered relief aid and humanitarian supplies to areas afflicted with natural disasters or crisis; multiple flights were made over Rwanda in 1994.

Source: Airforce.mil

Fairchild Republic A-10 Thunderbolt II

The Fairchild Republic A-10 Thunderbolt II is a single-seat, twin-turbofan, straight-wing, subsonic attack aircraft developed by Fairchild Republic for the United States Air Force (USAF).

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The first production A-10A was delivered to Davis-Monthan Air Force Base, Arizona, in October 1975. It was designed specifically for the close air support mission and had the ability to combine large military loads, long loiter and wide combat radius, which proved to be vital assets to the United States and its allies during Operation Desert Storm and Operation Noble Anvil.

In the Gulf War, A-10s had a mission capable rate of 95.7%, flew 8,100 sorties and launched 90% of the AGM-65 Maverick missiles.

The Thunderbolt II can be serviced and operated from bases with limited facilities near battle areas. Many of the aircraft's parts are interchangeable left and right, including the engines, main landing gear and vertical stabilizers.

Avionics equipment includes communications, inertial navigation and GPS, fire control and weapons delivery systems, target penetration aids and night vision goggles.

Their weapons delivery systems include heads-up displays that indicate airspeed, altitude, dive angle, navigation information and weapons aiming references; and a low altitude safety and targeting enhancement system (LASTE) which provides constantly computing impact point freefall ordnance delivery.

The aircraft also have armament control panels, and infrared and electronic countermeasures to handle surface-to-air-threats, both missile and anti-aircraft artillery.

The Thunderbolt II's 30mm GAU-8/A Gatling gun can fire 3,900 rounds a minute and can defeat an array of ground targets to include tanks.

Some of their other equipment include electronic countermeasures, target penetration aids, self-protection systems and an array of air-to-surface weapons, including laser and GPS guided munitions, AGM-65 Maverick and AIM-9 Sidewinder missiles.

General Characteristics

Primary Function: A-10 -- close air support, airborne forward air control, combat search and rescue
Contractor: Fairchild Republic Co.
Power Plant: Two General Electric TF34-GE-100 turbofans
Thrust: 9,065 pounds each engine
Length: 53 feet, 4 inches (16.16 meters)
Height: 14 feet, 8 inches (4.42 meters)
Wingspan: 57 feet, 6 inches (17.42

meters)
Speed: 420 miles per hour (Mach 0.56)
Ceiling: 45,000 feet (13,636 meters)
Maximum Takeoff Weight: 51,000 pounds (22,950 kilograms)
Range: 800 miles (695 nautical miles)

Armament: One 30mm GAU-8/A seven-barrel Gatling gun; up to 16,000 pounds (7,200 kilograms) of mixed ordnance on eight under-wing and three under-fuselage pylon stations, including 500 pound (225 kilograms) Mk-82 and 2,000 pounds (900 kilograms) Mk-84 series low/high drag bombs, incendiary cluster bombs, combined effects munitions, mine dispensing munitions, AGM-65 Maverick missiles, laser-/GPS-guided bombs, unguided and laser-guided 2.75-inch (6.99 centimeters) rockets; infrared countermeasure flares; electronic countermeasure chaff; jammer pods; illumination flares and AIM-9 Sidewinder missiles.

Crew: One
Date Deployed: March 1976
Unit Cost: $9.8 million (fiscal 98 constant dollars)
Inventory: Total Force – approximately 281
The A-10 is designed to be refueled, rearmed, and serviced with minimal equipment.

Its simple design enables maintenance at forward bases with limited facilities. An unusual feature is that many of the aircraft's parts are interchangeable between the left and right sides, including the engines, main landing gear, and vertical stabilizers.

The sturdy landing gear, low-pressure tires and large, straight wings allow operation from short rough strips even with a heavy aircraft ordnance load, allowing the aircraft to operate from damaged airbases, flying from taxiways, or even straight roadway sections.

The front landing gear is offset to the aircraft's right to allow placement of the 30 mm cannon with its firing barrel along the centerline of the aircraft. During ground taxi, the offset front landing gear causes the A-10 to have dissimilar turning radii; turning to the right on the ground takes less distance than turning left.

The wheels of the main landing gear partially protrude from their nacelles when retracted, making gear-up belly landings easier to control and less damaging. All landing gears retract forward; if hydraulic power is lost, a combination of gravity and aerodynamic drag can lower and lock the gear in place.

The A-10's future remains a subject of debate. In 2007, the USAF expected it to remain in service until 2028 and possibly later, when it would likely be replaced by the Lockheed Martin F-35 Lightning II. Director of the Straus Military Reform Project of the Project On Government Oversight Winslow Wheeler, a critic of this plan, said that replacing the A-10 with the F-35 would be a "giant leap backwards" given the A-10's performance and the F-35's high costs.

In 2012, the USAF considered the F-35B STOVL variant as a replacement CAS aircraft, but concluded that it could not generate sufficient sorties. In August 2013, Congress and the USAF examined various proposals, including the F-35 and the MQ-9 Reaper unmanned aerial vehicle filling the A-10's role.

Proponent's state that the A-10's armor and cannon are superior to aircraft such as the F-35 for ground attack that guided munitions could be jammed, and that ground commanders commonly request A-10 support.

How to prevent over-controlling your plane

By Jane Makena

Over-controlling an aircraft happens when pilots begin reacting to their own control inputs, instead of reacting only to externally-caused changes in pitch, roll, and bank.

How it happens;
When a pilot takes off or lands, they should fly the aircraft with minimal control inputs. In a perfect world, a pilot would take off, trim the controls, and only use fingertip pressure on them again until you need to turn, or climb/descend at a different speed.

Unfortunately, such perfect conditions are not always possible. Updrafts, downdrafts, gusts of winds, and changes in configuration mean that pilots are constantly adjusting controls to match a desired flight path. What happens when a pilot exceeds the required inputs? A pilot will have to correct for their mistakes.

When these mistakes start to occur in patterns, you're over-controlling, and setting yourself up for pilot-induced oscillations.

Gusty Crosswind Landings
On windy days with a large gusts, pilot induced oscillations tend to occur as the aircraft gets closer and closer to touchdown. Pilots have a tendency to correct for windy conditions by adding strong left/right, left/right aileron inputs for extended periods of time.
By moving the controls back and forth, you're attempting to fly a stable approach with the wings level. But instead of small corrections, you begin to fight your own large corrections, repeatedly.

Not only does this destabilize the approach, it simply makes it harder to touch down smoothly. And, if you have passengers that can see what's going on, it doesn't give them a lot of confidence to see you wrestling the airplane to the ground.

How to Fix It
On final approach, relatively few control inputs should be necessary to remain on glidepath and on centerline.
When corrections are made, they should be small. And when you make them, try to use fingertip pressure on the yoke or stick. When you grip the yoke tightly, you tend to over-control the aircraft, and introduce unwanted oscillations.

If a gust changes your attitude, use a small, light correction to bring your aircraft back to landing attitude.
If you find yourself swinging the controls up-down or side-to-side repeatedly, keep relaxing your grip on the control wheel. Allow yourself to find the correction angle, re-trim if you need to, and let the airplane fly itself.
It's a strategy that applies to almost all takeoffs, landings, and maneuvers.

It Takes Practice
If you find yourself over-controlling the aircraft, relax your grip, and visualize where the controls should be in order for the plane to fly itself. With some practice, you'll find it's much easier to use a few small corrections, rather than a lot of large repeated corrections that lead to over-controlling your aircraft.

F-35 LIGHTNING II

Aircraft has surpassed the speed of sound with greater ease

By Namukasa Joan
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This ultra-modern, single-seat, and single-engine fighter aircraft is designed to give pilots the upper hand in all environments and threats. With this in mind, the U.S. and Italian Air Force and Navy have embraced the aircraft since then.

The F-35 Lightning II is stealth, multirole combat aircraft developed by Lockheed Martin. It's designed for a variety of missions, including air-to-air combat, ground attack, and reconnaissance.

The F-35 Lightning II fighter jet was created as part of the Joint Strike Fighter (JSF) program. It aims to develop a family of advanced combat aircraft with stealth capabilities, versatility, and interconnectedness for the U.S. and its allies. The F-35 program involves over 1,900 suppliers across 48 U.S. states and more than ten countries.

Lockheed Martin leads the F-35 industry team, which includes Northrop Grumman, BAE Systems, and Pratt & Whitney. This program is the Department of Defense's most expensive weapon system, with a potential cost of around $1.7 trillion.

The Department of Defense's F-35 Joint Program Office actively works on the aircraft's engine performance and technological superiority. So far, the three variants have undergone significant modifications, including a 13% increase in length, 16% wingspan expansion, and a 30% increase in weight compared to their original designs.

In a recent display of aerial prowess, the F-35 Lightning II has shattered its previous speed records, setting a new benchmark for fifth-generation fighter jets. This milestone is a testament to the advanced engineering and design capabilities that define the aircraft, reinforcing its role as a critical asset in modern air forces.

The F-35 Lightning II, developed by Lockheed Martin, is a family of single-seat, single-engine, all-weather

stealth multirole combat aircraft designed for ground-attack and air-superiority missions. It is widely regarded as one of the most advanced fighter jets currently in service.

Recent reports have emerged that the F-35 Lightning II has surpassed the speed of sound with greater ease, now achieving a new maximum airspeed record. The precise parameters of this new record include a sustained speed beyond Mach 1.6, which equates to over 1,200 mph at altitude.

While the specifications of the F-35 place its top speed at Mach 1.6, pilots have observed speeds marginally exceeding this figure, indicating performance improvements or favorable conditions during the record-setting flight.

The F-35 program has been subject to rigorous testing and incremental improvements throughout its development and service. This new speed record might be attributed to several factors, including engine enhancements, airframe streamlining, or advanced flight control software updates.

Defense analysts and aviation enthusiasts have closely followed the F-35 over the years, monitoring its capabilities and service adaptability across different branches of the military. The new speed record is not just a numerical achievement, but also a demonstration of the aircraft's operational flexibility and continued evolution.
Breaking a speed record demonstrates the aircraft's performance capabilities, which can be an important factor in military operations. It also reflects the potential of the aircraft to handle demanding situations and may provide insights into the aircraft's design margins and reliability.

Replacements; Many old military planes worldwide are becoming outdated. With advanced features like stealth and enhanced technology, the F-35 will specifically replace aging fighter planes like the A-10 Thunderbolts and F-16 Fighting Falcons in the U.S. Air Force.

The goal: To use one aircraft instead of two different kinds of planes for easy maintenance and huge cost savings. It will also replace the U.S. Navy's F/A-18E Super Hornets and the U.S. Marine Corps' AV-8B Harriers, which will remain operational until 2029.

Key specifications: The wing size of fighter jets affect how they perform in flight. A bigger wingspan allows the jet to carry more fuel and weapons, enabling it to fly further and makes it more effective in combat. On the other hand, a smaller wingspan makes the jet more maneuverable and more suitable for flight in tight spaces.

Both F-35A and F-35B have wingspans measuring 35 feet. The latter is slightly smaller in overall dimensions for operations on ships and short runways, vertical landing, and take-off in a short distance. Moreover, the wingspan measurement fits the requirements inside USN amphibious assault ship parking areas and elevators.

Length: 15.70 m – 51.4 ft; The F-35A and F-35C are 51.4 feet (15.7 meters) long, while the F-35B is shorter at 51.2 feet (15.6 meters). The length of these aircraft is custom-built to provide enough internal storage of fuel and weapons, and maintain good aerodynamic performance.

Maximum speed: Mach 1.6; All F-35 types have a top speed of Mach 1.6, equal to 1,200 mph and attainable even with a full load of weapons. What makes it possible is the powerful engine, aerodynamic design, and lightweight composite materials. These factors work together to minimize drag and maximize thrust, allowing them to reach high velocities.

Furthermore, its low acoustic signature and speedy performance make them undetectable. This significantly reduces the risk of being spotted on any surveillance equipment and enhances protection against enemy fire.

Credit: Jake Hardiman - Simple Flying

EMBRAER PRAETOR 600 EXECUTIVE JET

By Paul Mwangi

The Embraer Praetor 600 is among a family of mid-size and super mid-size business jets built by Brazilian aircraft manufacturer Embraer.

The Praetor 600 is an improvement of the Legacy 500 introduced in October 2018 offering more range. The Praetor 600 has a range of 4,018 nmi (7,440 km; 4,620 mi.

The Praetor 600 is the most disruptive and technologically advanced aircraft to enter the super-midsize category, delivering the ultimate customer experience with an unparalleled combination of performance, comfort and technology.

The Praetor 600 is the farthest-flying super-midsize business jet, which allows nonstop flights between London and New York. With four passengers and NBAA IFR Reserves, the Praetor 600 has an intercontinental range of 3,900 nautical miles (7,223 km) with the highest payload capacity in its class, delivering maximum range capability.

Being the only midsize business jet with full fly-by-wire technology and active turbulence reduction, passengers enjoy the smoothest possible flight in a best-in-class 6-foot-tall flat-floor cabin, complemented by an unmatched 5,800-foot cabin altitude for ultimate passenger comfort.

The Embraer DNA Design of the cabin includes eight fully reclining club seats may be berthed into four beds for complete rest. The cabin includes a refreshment center at the entrance, a rear private lavatory with a vacuum toilet and an in-flight-accessible baggage area.

The total baggage space is the largest in the super-midsize category. Advanced technology also abounds throughout the cabin beginning with the industry-exclusive Upper Tech Panel that displays flight information and offers cabin management features also available on personal devices through Honeywell Ovation Select.

Gogo AVANCE L5 and high-capacity high-speed connectivity for all aboard is available through Viasat's Ka-

band with speeds of up to 16Mbps and IPTV, another industry-exclusive among midsize business jets.

An optional in-flight entertainment system consists of a high-definition video system, surround sound, and multiple audio and video input options.

The Praetor 600 features the state-of-the-art Rockwell Collins Pro Line Fusion avionics suite with four 15.1-inch high-resolution LCD displays, and paperless operations capability, with graphical flight planning and industry-first vertical weather display, air-traffic-control-like situational awareness with ADSB-IN, and predictive wind shear radar capability, in addition to Jeppesen charts and maps as well as an Inertial Reference System (IRS) and a Synthetic Vision Guidance System (SVGS).

The optional Embraer Enhanced Vision System (E2VS) features a Head-up Display (HUD) and an Enhanced Video System (EVS).

About Embraer Executive Jets

Embraer is one of the world's leading executive jet manufacturers, having entered the business aviation market in 2000 with the Legacy jet, which led to the launch of Embraer Executive Jets in 2005.

Its portfolio, among the broadest in the market, consists of the entry-level Phenom 100 and the light Phenom 300E jet, the medium cabin Legacy 450 and Legacy 500, the midsize Praetor 500 and super-midsize Praetor 600, the large Legacy 650E, and the ultra-large Lineage 1000E.

Embraer Executive Jets' global fleet exceeds 1,200 aircraft, which are in operation in more than 70 countries and are supported by the Company's global Customer Support and Services network of over 70 owned and authorized service centers, complemented by a 24/7 Contact Center, at its headquarters, in Brazil.

Source: Embraer