#ISSUE 20

THE Aviator AFRICA

Your Number One Source of Aviation News in Africa October, 2023

11 - 12 2nd Africa Airforce Forum 2023 Recap

20 - 21 Sustainable Aviation Fuel

56 - 57 Duties of a Cabin Crew

6 162567 745900

UAE VOICE

Dubai Airshow 2023

DUBAI AIRSHOW

is returning once again in November

with the participation of aviation pioneers and innovators

EAST AFRICAN Airshow

www

Contents

EDITOR IN CHIEF
Ssemawere Oscar
Email: chairman@theaviator. co.ug

MANAGING EDITOR
Vincent Mwesigye Mupenzi
Email: v.mupenzi@theaviator.co.ug

EDITORIAL & PHOTOGRAPHIC CONSULTANTS
Ssemawere Oscar, Daniel Bakalangudde, Vincent Mwesigye Mupenzi

AFRICA CORRESPONDENTS
Paul Mwangi - East Africa
Evans Kimani - East Africa
Harriet James - East Africa

DESIGN & LAYOUT
Daniel Bakalangudde
B.Daniel@theaviator.co.ug

CREDITS
- Airbus
- Cirium
- Africa Airforce Forum
- ACI Africa
- Aviation Africa
- KATA

Advertising and Editorial Equiries

+256 393 515 148
info@theaviator.co.ug
www.theaviator.co.ug
The Aviator Africa
@theaviatorafrica
@aviatorafrica
The Aviator Africa

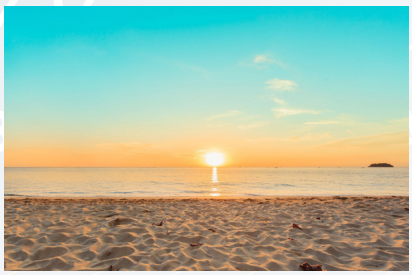
AFRICA:
The 2nd Africa Airforce Forum 2023 recap **P: 11 to 12**

AFRICA:
Aviation Africa Summit and Exibition 2023 review **P: 16 to 17**

AFRICA:
SUSTAINABLE AVIATION FUEL:
The Future Of Greener Skies For Africa
P: 20 to 21

GLOBAL:
Airbus c295 Tactical airlifter
P: 39 to 41

GENERLA AVIATION:
Cheapest European cities to fly into
P: 45 to 46



INFORMATION:
How a flight simulator works
P: 58 to 59

www.ugandairlines.com

Fly Charter, Fly Convenience

Charter a flight to any destination with ease.

ugandairlines

BOOK NOW

Tel: +256 (0)200 406400
WhatsApp: +256 754 355 860
Email: reservations@ugandairlines.com

Uganda Airlines
Fly the Crane to the Pearl of Africa

70TH ACI AFRICA BOARD MEETINGS REGIONAL CONFERENCE & EXHIBITION

"Resilience through Innovation"

ACI Africa President Emanuel Chaves

Airports Council International, an international association of African airports held the 70th ACI Africa Board and Committee Meetings, Regional Conference and Exhibition from the 14th to 21st October 2023 in Dakar, Senegal under the theme "Resilience through Innovation"

ACI Africa has played a significant role in enhancing the quality and depth of discussions among professionals in the aeronautical sector in Africa. AFCAC expresses its gratitude to ACI Africa Team, Partners & Stakeholders for the exceptional organization of the 70th ACI Africa Board and Committee Meetings Regional Conference & Exhibition

During her meeting with H.E Mr. Antoine Mbengue, the new Minister of Air Transport & Development of Airport Infrastructure of Senegal, the Secretary General of AFCAC Madam Adeyemi Adefunke mentioned the way SAATM PIP represents AFCAC's steadfast commitment to advancing the Air Transport industry &creating a prosperous future for Africa H.E Mr. Antoine Mbengue, in turn, expressed optimism about the future of Air Transport in Senegal & Africa, affirming his dedication to advancing the industry for the benefit of the continent's connectivity.

About AFCAC

The African Civil Aviation Commission (AFCAC) is an agency of the African Union headquartered in Dakar. Its purpose is to develop and regulate civil aviation in Africa.

AFCAC was founded as a specialized agency of the Organization of African Unity on 17 January 1969. The Yamoussoukro Decision was written in 1999 and became binding in 2002. AFCAC is now the executing agency of the Single African Air Transport Market, which implements the Yamoussoukro Decision. Its cooperation with the International Civil Aviation Organization includes promoting the application of ICAO's Standards and Recommended Practices.

About ACI Africa

ACI Africa is the international association of African airports. ACI Africa as the voice of African Airports, has as prime objective to represent and advance the collective interests of African airports, while promoting professional excellence in airport operations and management, through the provision of effective and quality programs and services, to achieve a safe, secure and sustainable development of the air transport industry in Africa.

IN THE NEWS

USOAP preliminary results released on UCCA

Following the recently concluded Universal Safety Oversight Audit Program (USOAP) on the state of Uganda, Uganda's Aviation safety system and the entire International Aviation Community has been given a boost of confidence in meeting ICAO standards.

The Universal Safety Oversight Audit Program was carried out on-sight from 6th to 18th September 2023. The Audit was undertaken to evaluate the effectiveness of Uganda's safety oversight systems against the compliance of the ICAO Standards and Recommended Practices (SARPs).

In his letter addressed to Uganda Civil Aviation Authority (UCAA) staff, UCAA's Director General Mr. Fred K. Bamwesigye noted that at the closing meeting on September 18th 2023, the lead Auditor issued the preliminary results with a score of 72.1%.

The results indicated an overall improvement on the safety performance of the state of Uganda, ranking the state above the regional and global average. The Director General reiterated that the score gives confidence to the safety system of Uganda and the entire International Aviation Community in meeting

ICAO standards.

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

Mr. Fred. K. Bamwesigye took the opportunity to congratulate the entire USOAP team who tirelessly prepared for and successfully executed the audit program to its conclusion.

The team will immediately embark on resolutions of the Audit findings as will be contained in the Collective Action Plans (CAPs). UCAA Director General in his memo to his staff noted that the final report with details will be issued after six months.

Emirates & United Airlines expand Codeshare Partnership

Emirates, a subsidiary of the Emirates group, has announced a significant expansion in its codeshare partnership with United, to include nine destinations in Mexico. The codeshare agreement will enable Emirates customers access eight new destinations in the country, in addition to Mexico City, which the airline also serves.

The expansive codeshare network between Emirates and United currently includes a host of US cities and Mexico becomes the first country outside of the US to be added to the growing network. The codeshare partnership enables customers to enjoy

flexibility and choice with smooth connections, allowing passengers flying on Emirates to two points in the US, either Chicago or Houston, to connect onwards to exciting leisure destinations in Mexico. The New Mexican points include Cancun, Cozumel, Monterrey, Puerto Vallarta, Guadalajara, San Jose Del Cabo, Leon/Guanajuato, and Queretaro.

Furthermore, the codeshare partnership also provides more flexibility on flight timings, giving Emirates customers flying to Mexico City more options when choosing flights.

ADB commits over $23 million to Rwanda's new Aviation Centre of Excellence

The project will boost Rwanda's ambition to become a regional aviation hub and draw international investment from the aviation industry

The Board of Directors of the African Development Bank group has approved a $23.6 Million loan for the construction and equipment of a new aviation training facility in the Rwandan Capital, Kigali.

The proposed Centre of Excellence for Aviation Skills (CEAS), including an aircraft hangar, will partner with higher learning institutions to produce a skilled workforce to meet global aviation training standards and industry demands.

The project will boost Rwanda's ambition to become a regional aviation hub and draw international investment from the aviation industry.

It aligns with the country's Vision 2050 to improve human capital by providing high-quality training, upskilling labour, and transforming the workforce for higher productivity.

The Centre is expected to enrol up to 500 students starting from 2025 when it becomes partly operational. It will offer training for pilots, maintenance and cabin crew. There will also be dispatch and ancillary courses, including in airport emergency operations services.

The facility will also provide drone piloting training, flight simulator recurrent training, and other advanced pilot training for specialized missions.

Air Senegal and Royal Air Maroc sign a memorandum of understanding

The strategic MOU signed by the two sister airlines aims at strengthening bilateral, cooperation, social, cultural and economic exchanges between the two countries.

According to a joint statement, The MoU, was signed on Wednesday 27th September 2023 at the headquarters of the Moroccan national carrier in Casablanca by Hamid Addou, Chairman and CEO of Royal Air Maroc, and Alioune Badara Fall, CEO of Air Sénégal,
Under the agreement, air connectivity capabilities will be "increased and choices will be diversified in terms of days and times of flights" between the two countries.

Customers will also be able to "purchase travel tickets from the commercial distribution network of both companies, and then travel on board the two companies' aircraft," according to the joint statement.

The agreement will also ensure cooperation in areas of aircraft maintenance and leasing, as well as human capital, in addition to technical and administrative training.

Both aircraft hope that this memorandum of understanding will help grow and expand their networks both in Africa and beyond and will also ease passengers' travel experience.

Fahari aviation increases its Agricultural services with Introduction of drones

The additional 14 drones will increase capacity to enhance precision farming, by up to 300 hectares per day up from 70 hectares per day

The expansion of Fahari Aviation's agricultural services is in response to the growing demand for precision agriculture solutions such as: spraying and spreading of farm inputs aerial surveillance, crop monitoring, crop health surveillance and land inspection.

This strategic move enhances Fahari Aviation's position as a market leader in the use of drone technology for precision farming.

The additional 14 high-capacity drones provide Fahari Aviation with the capacity to cover larger areas, efficiently completing agricultural tasks of up to 300 hectares per day up from its previous capacity of up to 70 hectares per day.

The additional drones will offer Fahari Aviation customers a wide range of functionalities, including spraying, spreading, seeding, and data collection on crop health and soil conditions. By integrating multispectral drones, precise variable spraying and spreading operations can be conducted based on farmland prescription maps.

This technology is ideal for activities such as fertilising, nutrient solutions spraying, and afforestation through the seeding of small seedballs.

Fahari Aviation is responsible for launching and implementing future aviation technologies and is part of the airline's strategy of contributing to the sustainable development of Africa by championing new dimensions within the industry with the use of drones and unmanned aircraft.

Wins big at World Travel Awards

- Wins Middle East's Leading Cabin Crew for the fifth year in a row
- Also sweeps awards for Middle East's Best Business Class, Inflight Entertainment, Customer Experience and First Class Lounge and Spa
- Golden Loyalty Awards winner for Best use of Technology

Etihad Airways took home a sweep of awards in the World Travel Awards Middle East which took place during a glamorous gala dinner at Atlantis the Royal in Dubai on Sunday night, and the Global Loyalty Awards which took place in Rio de Janeiro.

"On behalf of the entire Etihad family, we're truly proud to be recognised in the prestigious World Travel Awards.
Our dedicated Cabin Crew are committed to giving our guests the world's best inflight experience and winning the Middle East's Best Cabin Crew for the fifth year in a row is proof that they're delivering", said Antonoaldo Neves, CEO, Etihad.

Graham E. Cooke, Founder, World Travel Awards, said: "Congratulations to Etihad Airways for winning 'Middle East's Leading Airline - Business Class', 'Middle East's Leading Airline - Customer Experience', 'Middle East's Leading Cabin Crew', 'Middle East's Leading Airline Inflight Entertainment' and 'Middle East's Leading Airline Lounge - First Class'.

This is a remarkable achievement, reflecting how the brand is setting the benchmark in aviation. The commitment of the entire team at Etihad Airways serves as an inspiration to us all."

THE 2ND AFRICA AIRFORCE FORUM RECAP:

By Vincent M. Mupenzi
v.mupenzi@theaviator.co.ug

The 2nd Africa Air Force Forum took place on 25 - 26 October 2023 and was hosted by the Senegalese Air Force. The two-day international conference and exhibition was held at the King Fahd Palace Hotel Dakar, with the aim of strengthening regional cooperation to enhance air operations to counter asymmetrical threats.

The forum brought together a distinguished audience, including Air Force Chiefs of Staff, aerospace industry leaders, and government officials from across Africa and the globe. The opening ceremony was notably attended by the Senegalese Minister of Defense, the Chief of Staff of the Armed Forces, and the Chief of Staff of the Air Force. Their presence underscored the forum's significance in shaping the future of air force capabilities in Africa.

El Hadj Oumar Youm - Minister of Defence – Senegal was the guest of honour. Brigadier General Papa Souleymane Sarr, the Chief of Air Force Staff of the Senegal Air Force opened the event with his welcome remarks. Senegal's Minister of Defence, Sidiki Kaba addressed the

participating delegation as the Guest of Honor for the forum. The two days event assembled leading Air Force Chiefs from across Africa, senior dignitaries from international Air Forces, executives from security agencies along with global partners and advanced solution providers to improve and enhance collaborative approaches to combat regional security challenges.

The conference was staged under the theme "Adapting Air Force Capabilities and Drone Deployment to Combat Modern Conflicts". The discussions tackled complex security challenges, emphasizing the role of drones in modern warfare. Brigadier General Papa Souleymane Sarr, Chief of Staff, Senegalese Air Force, highlighted the event's importance by saying, "Together, we will shape a future where our Air Forces are not just reactive but proactive, ensuring stability and security across our great continent by fostering bilateral partnerships and promoting

stability."

The forum explored air operations for counterterrorism and counterinsurgency, intelligence capabilities, and personnel training, among other critical issues. The event also featured an exhibition that showcased the latest technologies and equipment in aerospace and defense.

The 2023 second Africa Airforce Forum Advisory Board included; Colonel Papa Aliou Cisse- Deputy Chief of Staff of the Airforce- Senegal, Colonel Alimbaye G. A. Manga -Commander of the Airbases of Linguere and Kaolack – Senegal, Phillip J. Heyl- Ceo The Heyl group.

The 2023 conference VIP speakers included;, Lieutenant General Emanuel Mendes De Vasconcelos Deputy Commander Air Force – Angola, Major General Angel Rojo, Director General of Administration of the Joint Chiefs of Staff of the Armed Forces Argentina, Lieutenant Colonel Jacob Agbohouto - Chief of Division Logistics Benin, Major General Hendric Thuthu Rakgantswana- Commander of the Air Force Botswana, Lieutenant Colonel Tsafack Etsiaze Morel- Head of Employment and Coordination Office at the Air Force General Staff Cameroon, Lieutenant General Yu Qingjiang- Deputy Commander China, Major General Ahmed Abdel Fattah Mohamed -Assistant Commander of the Air Force for Navigation Egypt, Lieutenant General Laurent Rataud - Commander Air Defence and Air Operations France, Air Commodore Eric Agyen-Frempong Base Commander Air Force Base Accra Ghana.

Brigadier General Aerienne Yaghouba Toure - Chief of Staff Guinea, Air Vice-Marshal M.S. Deswal -Assistant Chief of Air Staff (Inspection) India, Commander Giuseppe Addesa- Commander of 46th Air Brigade Italy, Air Brigadier General Toure Famma - Commander Abidjan Air Force Base Ivory Coast, Brigadier General Hamady Mohamed Ely Maouloud - Chief of Air Force Staff Mauritania, Air Vice-Marshall Sayo Olatunde - Chief of Policy and Plan Head Quarters Nigeria.

Brigadier General Godfrey Gasana- Deputy Chief of Staff Rwanda, Major General Altulyan Majed Saudi Arabia, Brigadier General Papa Souleymane Sarr- Chief of Staff Senegal Air Force, Major Général Joseph Mamadou Diop- Chairman Air Senegal Company, Major General Sipiwo Dlomo - General Officer Commanding Air Command South Africa, Major General Guillermo Cavo Muñoz - Deputy Commander Air Combat Command Spain, Colonel Gnassingbe Bagoubadi -Niamtougou Air Base Commanding Officer Togo, Major General Kemal Turan- Chief of Staff Operations Turkey.

Brigadier General Rashid Sultan Mohamed-United Arab Emirates, Lieutenant General John D. Lamontagne - Deputy Commander U.S. Air Forces in Europe and Air Forces Africa, Air Vice-Marshal Biltim Chingono - Chief of Staff Operations Zimbabwe.

Guest Speakers included;
Dr. Andrea Montobbio- Marketing & Sales Area Manager Africa Leonardo Electronics, Colonel Chad D. Mcadams, Division Chief of ISR Plans and Capabilities - U.S. Air Forces in Europe Air Forces Africa, Fernando Ciria- Marketing Director (Airborne ISR and Tactical Transport)-Airbus Defence and Space, General-Engineer, Fouad El Khatib- Special Adviser Middle East and Africa-French Ministry of Armies / DGA (Armament) Air Marshal Idi Gamso Lubo Ofr (Rtd) Nigeria.

José Mba Abeso, Executive Secretary Gulf of Guinea Commission, Kaval Shah- Regional Sales Manager Pratt & Whitney Canada, Kerem Özkan - Business Development Manager Aselsan, Mauro Calvano- CEO Airways Aviation Europe & Africa and Advisory Board Member- Airways Aviation Group, Colonel Engineer Nader Yehia Hammad CEO Jordan Aeronautical Systems Company, Phillip J. Heyl- CEO The Heyl Group, Şevket Ünal - Vice President International Business Development and Marketing Havelsan.

Sogui Diop - Sales Manager West Africa EOS Technologie - Senior Colonel Qi Lijian- Director of PLAAF Military Vocational Training Center China. Captain Navy Raphael Gustavo Frischgesell - Defence Attache Brazil Romy HawattFounder and Executive – Chairman Airways Aviation Group, Tommaso Arianna, Vice President Marketing (Western & South Africa) Leonardo Aircraft, Brigadier General Ousmane Kane (Rtd) Senegal Air Force.

In his closing remarks, - Senegal's Chief of Air Force Staff Brigadier General Papa Souleymane Sarr noted that the forum was very important as it has created a platform for air force chiefs from across Africa to deliberate on the importance of air force in low intensity conflicts and that across the world, we have seen what asymmetric warfare is doing and how the use of air power could be an opportunity to solve the region's problem in such kind of conflicts.

In hosting the conference, Senegal demonstrated its commitment to regional security and its leadership role in enhancing air force capabilities, particularly in support of regional counterinsurgency and upcoming oil exploration activities. The forum boasted over 350 regional and international attendees, and over 35 sponsors and exhibitors, providing an unparalleled platform for networking and knowledge sharing. Main sponsors included A.D. Con Ltd, Foreign Asset Trade Company, Ortho International, Airbus, ESMA Aviation Academy, Diamond Aircraft, Jet Aviation, and Go Beyond. The Aviator Africa was one of the forum's Media Partners.

PROFILING AFRICA'S TOP FEMALE PILOTS

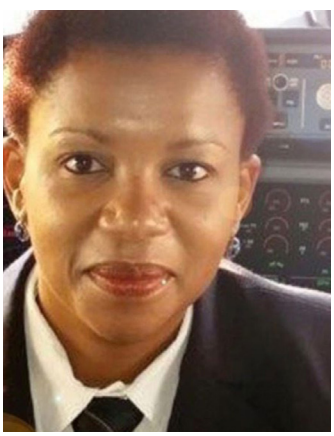
Africa got its first female pilot in 1964 but for many years thereafter women did not rise to take on the mantle. Instead women filled the ranks of flight attendants, leaving the men to dominate the role of pilot. However, with the number of educated and empowered women rising, so do their numbers in male-dominated fields. Here are some of the women who are breaking barriers in African skies.

Asli Hassan Abade

Asli Hassan Abade was the first African woman Air Force pilot. She is a Somali Air force pilot, military figure, and civil activist. She was the first and so far the only female pilot in the Somali Air Force.

Asnath Mahapa

Asnath Mahapa is a South African pilot. She has flown for United Nations Red Cross and World Food Programme in Central and West Africa. Recently, she was appointed as a spokesperson for Cell C Take a Girl Child to Work Day campaign. Asnath Mahapa became the first black female pilot trainee in South Africa in 2003. She is the founder of the African College of Aviation (Pty) Limited.



Captain Amsale Gualu

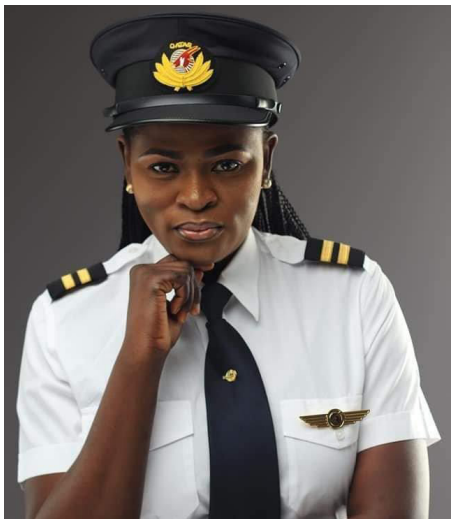
Captain Amsale Gualu is an Ethiopian pilot. In 2010 she became the first female captain in the history of Ethiopia. She is also the first female captain on the Boeing 767, Boeing 777 and Boeing 787 in Ethiopia. Additionally Captain Amsale Gualu became the second African female pilot to command a Boeing 787.

Irene Koki Mutungi

Captain Mutungi was the first female on the African continent to receive certification as captain of the Boeing 787 Dreamliner aircraft. She was also the first female pilot at Kenya Airways and stayed the only female pilot at the airline for the next six years. She has received several awards in this male-dominated category.

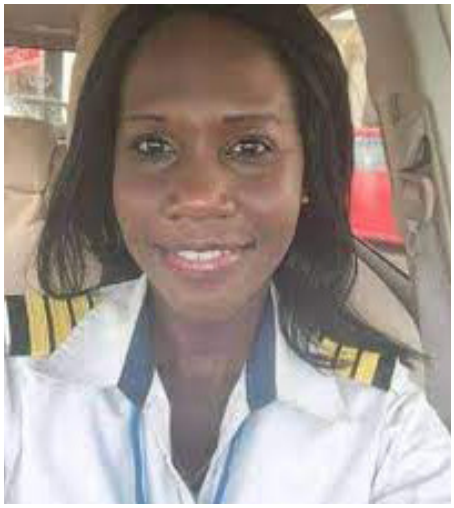
Adeola Ogunmola Sowemimo

Nigerian Sowemimo is the first female of her nationality to pilot the gigantic Boeing 787 Dreamliner at Qatar Airways and to fly the Boeing 767 Aircraft across the Atlantic. She joins Kenya's Captain Irene Koki, Ethiopia's Captain Amsale Gulau and a few other African women who fly the Boeing 787 Dreamliner.



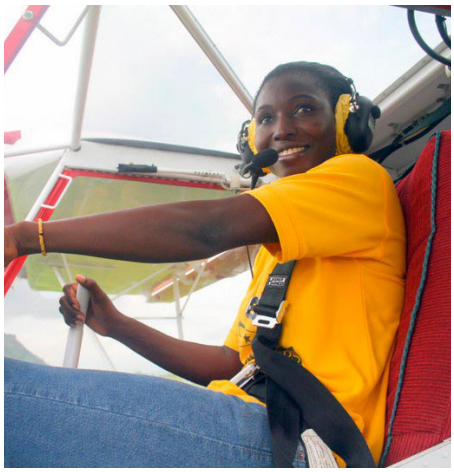
Aluel Bol Aluenge

South Sudan's first female pilot Aluel Bol Aluenge rose to the position of captain with major American airline company Delta Air Lines after working with Ethiopian Airlines and Fly Dubai in 2018. She hails from South Sudan's Lakes State and is the daughter of the late Justice James Bol. She was a refugee in Kenya during her country's ethnic and political conflict.



Lieutenant Ouma Laouali

In 2015 Laouali became the first female Nigerien pilot at the age of 28. She was one of the Nigerien Airforce members trained by the United States as part of a programme to help fight the Islamist terrorist group Boko Haram.



Patricia Mawuli

In 2009 Mawuli became Ghana's first female civilian pilot and the first woman in West Africa certified to build and maintain Rotax engines. She was also the co-founder of now-defunct Medicine on the Move (MoM), a local NGO that worked with the Aviation Academy to transport doctors, deliver medical supplies and services and take health education to rural communities across the length and breadth of Ghana.

Esther Mbabazi

Mbabazi became the first female Rwandese pilot in 2012 at the young age of 26 and flies for RwandAir, the national airline of Rwanda. Her career choice was greatly influenced by the tragedy of her father dying in a plane crash.

Vanita Kayiwa

Vanita Kayiwa, is a Ugandan airline transport pilot, who serves as a first officer at Uganda National Airlines Company, Uganda's national carrier airline, on the A330-841 aircraft, since February 2021. Before that, effective April 2019, she served as a first officer on the CRJ 900 equipment, at the same airline. As of February 2021, she was one of the five female pilots at Uganda Airlines, out of a total of 50 aviators. She is the one of the only two female pilots who were part of the cockpit crew on the A330-841 equipment at Uganda Airlines. She is the first Ugandan woman to make captain at Air Serv Limited, since that airline was founded in 1987.

AVIATION AFRICA 2023

SUMMIT & EXHIBITION Review:

By Vincent M. Mupenzi
v.mupenzi@theaviator.co.ug

The seventh event of the Aviation Africa summit and Exhibition 2023, was a 2 day summit and exhibition held at the International Conference Centre in Abuja, Nigeria on 13 & 14th September 2023 and was hosted by the by Times Aerospace, in association with the Nigerian Civil Aviation Authority and was the first to be hosted in West Africa.

The event was officially opened by Dr. Emmanuel Meribole, permanent undersecretary Ministry of Aviation and Aerospace Development, Federal Republic of Nigeria. The two-day conference, which was organized under the theme 'Stepping up for business' hosted over 1,500 aviation leaders from across 75 global countries.

The two day summit addressed the question of whether African carriers are ready to meet IATA's forecast that passenger numbers on the continent will double by 2040. It also looked at whether governments will support the infrastructure and the environment to change the current situation where Africa accounts for 18% of the global

population but provides just over 2% of the global air transport market.

Alan Peaford, chairman, and editor-in chief of Times Aerospace, noted during his opening remarks that is was the first time the summit was hosted in West Africa, but it's not before it's time. Nine years ago, when the first summit was planned it was impossible to hold it on the continent.

There were too many examples of visa restrictions for intra-African connectivity, hence the first summit being hosted in Dubai. But a year later and Rwanda had completed the process for visas on arrival thus paving the way for hosting the event for where it needed to be. Mr. Peaford added that: "There is no doubt that Nigeria is serious about its plans to finally develop a cohesive and competitive aviation industry."

He also highlighted that despite geo-political challenges, poor connectivity, a lack of investment in infrastructure and a shortage of maintenance, repair and overhaul (MRO) facilities, Africa and West Africa in particular is stepping up its intent to recognise the value that aviation can bring to each country's economy.

"We've seen many new and often repeated initiatives and great ideas on the African continent but they've stumbled through inertia or strong resistance," he said. "We have to find a way to change this, but it has to be the African way. There are shared goals but we have to recognise these can be achieved in a different way. For those outside the continent we must recognise we benefit from learning the African way."

A special symposia programme also addressed areas including aviation finance; MRO and business aviation. The plenary stage was a platform for airports, regulators and airlines to address issues such as sustainability, diversity, future talent and competitiveness. The summit also featured a dedicated exhibition and networking space for delegates.

Aviation Africa 2023 summit hosted CAA director generals from across the continent and over 200 senior African airline executives. Director Generals from the Civil Aviation Authorities of Nigeria, Ghana, South Africa, Rwanda, Egypt, Togo, Sierra Leone, Kenya, Mozambique, South Sudan, Gambia and Somali participated at the event.

Senior aviation delegations amongst over 200 registered airline attendees from the region's major airline operators including: EgyptAir, RwandAir, Ethiopian Airlines, Dragonfly, Kenya Airways, South African Airways and ValueJet also attended the two day summit. The conference featured a panel discussion from Africa's airline CEOs from Air Zimbabwe, RwandAir, Ethiopian Airlines and TAAG Angolan Airlines, and focused on the challenges each face in a pan-continental situation.

Cargo operators discussed how they are building their businesses flying the flag for Africa. The topic of sustainability was given an ample time of panel discussions and presentations to ensure that Africa and the aviation industry are meeting the world's sustainability expectations.

The associated exhibition featured Gold Sponsors Airbus, Boeing & Ivory Jet Services, alongside a further 100 sponsors and exhibitors from across the world showcasing their varied products and services as solutions for MRO, Business Aviation, Training, Manufacturing, Avionics, AAM and Drone technology and much more in aviation technology.

The role of partnerships in boosting the airline industry in Africa

Lufthansa officials during KATA event

By Harriet James

Airline partnerships have for ages been the best way through which airlines boost business and expand their network. Airways are seeking to enlarge their community and offer higher connectivity to their clients, which is even greater crucial inside the modern aviation panorama as many companies are still recuperating from the pandemic after having had their schedules and networks tormented by the crisis. Additionally, there is a growing need for airways to cater to the developing needs of passengers to provide new and tailor-made tour options.

At the Kenya Association of Travel Agents (KATA) Annual Convention and General Meeting, participants from the travel industry gathered to discuss the future of the travel and aviation industry. The theme was "New Normal, New Thinking, New Rules," and delegates engaged in thought-provoking discussions, exchanging insights, and exploring innovative approaches to tackle the challenges facing the travel industry and be more resilient. One of the form of partnerships that was discussed is the SAATM arrangement and the benefits of its implementation. So far, its 19 states that have signed and ratified SAATM but the industry players believe that much more needs to be done to accelerate the process.

However, the growth of aviation in Africa has been hampered by restrictive government policy, especially bilateral air service agreements (BASAs). In 1999, the Yamoussoukro Decision (YD) was adopted out of recognition that restrictive regulatory controls on air travel between African States (codified in Bilateral Air Service Agreements – BASAs) were detrimental to intra-Africa connectivity and the holistic development of the African air transport industry (especially safety and security). Bilateral agreements have been seen as the way to move the industry forward.

"SAATM is stuck where Yamasoukro was stuck. Collaboration between different airline with different countries within Africa because the fear has been that if you fly into a state that doesn't have a national flag career that state loses its ability to develop a national career. Once the approach is more collaborative, it will fasten implementation as it will eliminate that protectionist approach," he continues.

As a solution, airlines propose partnerships as a solution to implement open skies faster. "It is sad that we are still held up in the past thinking where we think about the borders that identify countries in Africa and still think of protecting their airlines instead of how to get more from collaborations. As a result, we see a lot of growth in Africa being driven by foreign currency.

While there is nothing wrong with that, we need to do more as carriers in Africa. That is why in Kenya airways, our main aim is to set up a pan African airline in Africa because we see the opportunity to collaborate and compete. While we need to compete for the sake of the industry and the growth of our consumers but we need more of collaborations happening," said Julius Thairu
Chief Commercial & Customer Officer at Kenya Airways.

To fight back foreign carriers dominance in intercontinental traffic, Kenya Airways (KQ) and South Africa Airways (SAA) are considering a Pan-African Airline Group, a revisit of a similar plan

eight years ago that sought to bring together KQ, SAA and Ethiopian Airways during the 44th annual meeting of the African Airlines Association (AFRAA) in South Africa.

"This will enhance customer benefits by availing a larger combined passenger and cargo network, fostering the exchange of expertise, innovation and adopting home-grown solutions to technical and operational challenges," said KQ chief executive Allan Kilavuka.

The partnership came at the right time when KQ was experiencing financial turmoil as it posted an Sh11.5 billion loss for the half-year to June with turnover during the period dipping nine per cent to Sh27.3 billion compared to Sh30.2 billion same period last year. This year, the National carrier Kenya Airways PLC (KQ) has reaffirmed its recovery progress after recording a 120 percent improvement in operating profit from a loss of Kshs 5 billion reported in 2022 to Kshs 998 million in 2023.

Thairu believes that there are opportunities that come with collaborations since airlines are so closely linked to all opportunities in the country.
"An airline is a bridge connecting a country and it drives the prosperity of the country. They work closely with the bigger agenda in the country. We need to do more consolidation. On our part as Kenya Airways, we have launched the pan African airline concept as a solution," he continues.
The pan African airline is not a new concept as it has been done in many regions successfully. Kenya Airways is in the process of identifying other countries to partner with in this.

"Every country has its own flagship career that is very fragmented and they don't have the scale to make a consolidation successful. We now have one of the partners South African airways where we have a common vision. We are also looking at connecting both Nairobi and South Africa hubs and also looking for a west African partner to open up the region. We are really focusing on opening up interconnectivity in Africa where we remove the notion of borders and embrace bilateral ties which are creating gaps in the struggle. It is slow but we are ready to push this forward and we have great support from both governments," adds Thairu.
Other continents are already reaping dividends of consolidation.

For International airlines inside the continent, collaboration is essential in certain aspects.
"There are certain aspects where we partner like in safety. All of us when it comes to safety procedures and other things. While we are not allowed to connect to destinations within Africa as an international airline, we work with partners in that sense. We are with the star alliance with Egypt air, Ethiopian and with South African and we have various other partners with whom we cooperate on a smaller scale including KQ and Airlink. As far as working with our compatriots, it is safety bodies that we have common interest and IATA topics. But we are competitors when it comes to commercial bits but we maintain cordial relationships," explains Kevin Markette, General Manager East Africa at Lufthansa Group.

Airline to airline is not the only form of partnership that airlines engage in to gain. Airlines like Lufthansa are engaging in collaboration with government and tour agents in driving sales. For instance, through regular workshops, the airline has trained tour agents on their brand and the products they have to increase the sales and improve the relationships.

"Travel agents are the first contact for our clients and we want to ensure that they are familiar with our products. Recently, we hosted the travel agents in their catering facility at the airport to show them how the airline catering is done. We want to make sure that they can see what they are selling through education and brand awareness.

It's the agents that help us to sell to the brand customer. We want to make sure that the whole chain works smoothly," he explains
When it comes to tourism bodies, the airline too has ways of partnering with them in boosting their business.
"Tourism bodies are an integral part of the business travel into any country. For the Lufthansa airline and all the other groups within, it is extremely important to engage with the stakeholders on a regular basis. Tourism bodies promote the country and we work hand in hand. We engage with our colleagues in tourism in Kenya but also within the region in Tanzania and Rwanda and other countries as we find that as an integral part of our strategy but to grow mutually beneficial in the entire sector," he concludes.

SUSTAINABLE AVIATION FUEL

The future of greener skies for Africa

By Harriet James

The expansion of the commercial aviation industry has resulted in the rise of global carbondioxide (CO2) emissions from total passenger and cargo aviation since 2004. By 2019, according to IATA, the industry had omitted over 900 million metric tons of CO2 something that has made the industry look for ways to be more sustainable in a world that is shifting towards being more concerned about such emissions.

The solution is SAF which has been said to be better and more sustainable than conventional jet fuel but with a smaller carbon footprint. According to the IATA Net Zero Emission initiative, SAF has the potential to account for 65 per cent of the reduction in greenhouse gas (GHG) emissions required for the aviation industry to reach net zero by 2050.
There are few airlines that have began the use of SAFs. For instance, in 2016, South African Airways and Mango Airlines flight between Johannesburg and Cape Town became the first on the continent to refuel with SAF.

This marked a milestone in the aviation sector. It was part of project solaris, which was given support by SunChem SA, a local feedstock developer and fuel supplier, SkyNRG.

This year, Kenya Airways (KQ) became the first African airline to use Sustainable Aviation Fuel (SAF). The fuel came from Eni Sustainable Fuel where the airline operated a Boeing B787-8 Dreamliner for the return flight between Nairobi and Amsterdam. KQ was among the 22 airlines that participated in the Sustainable Flight Challenge designed to challenge the aviation industry by stimulating and accelerating innovation.
Kenya Airways Group Managing Director and Chief Executive Officer, Allan Kilavuka said Kenya Airways is committed to leading the way in sustainable aviation and reducing its carbon footprint.

"Our participation in this challenge for the second time demonstrates our commitment as an airline towards sustainable aviation. This allows us to develop and strengthen our business and change and improve the lives of the people we serve," he stated.
Kivaluka further adds that the data and practices

Uganda Airline CEO Mrs. Jennifer Bamuturaki

from the flights competition will be used to develop and implement sustainable solutions for the aviation industry, while the use of Sustainable Aviation Fuel (SAF) on the flight will generate valuable data and insights that can inform policy decisions, regulatory frameworks, and industry best practices related to SAF.

Despite all the efforts, the SAF journey in the continent has stalled. During a panel discussion on adopting fossil fuels at AviaDev Africa, industry leaders highlighted some of the challenges that they face in adopting SAF. From the discussions, there is need to overcome the challenges to affordability and access. "African airlines say SAF is expensive, it's three times the cost of Jet A1 fuel." The financial limitations faced by African carriers pose a significant obstacle to their transition to more sustainable fuel options.

Balancing the imperative of sustainability with the economic viability of airlines is a pressing challenge that demands collaborative solutions" said Jennifer Bamuturaki, CEO of Uganda Airlines at the event. There is also the need to address the limited availability of new aircraft in the continent in the process of shifting to a sustainable future in the industry.
"If we need 1000 aircraft in the continent, I wonder where they will be coming from, probably secondhand aircraft with old engines burning fuel and polluting." The scarcity of new aircraft puts African airlines in a position where they may have to rely on older, less fuel-efficient planes, hindering their progress toward sustainability. Overcoming this challenge requires innovative thinking and collaboration among industry players," explained Mr. Eduardo Fairen, CEO of TAAG Angola Airlines.

The panelists agreed on the need to address the cost as well as access to SAF in the continent which has hindered their adoption. their ability to adopt sustainable fuel options. Collaboration as a means of overcoming the challenges will consequently result in the aviation industry embarking on a sustainable path and a greener and more sustainable future.

There is also need for policy support and financial incentives to assist the aviation industry shift to greener fuels. To solve this, The International Air Transport Association (IATA) has launched a policy, SAF Deployment, which urges governments to facilitate the scaling up of SAF production and promote harmonized policies across countries and industries. The WTTC has also joined in the campaign and in partnership with ICF, they have launched a white paper titled "Sustainable Aviation Fuels:

The Implications & Opportunities for Tourism Destinations." This publication aims to demystify the impact and benefits of SAF for tourism destinations and outlines three critical actions destinations should take to address the challenge and embrace the opportunities associated with SAF.
"Can we get subsidies? We don't have scale, and that's a fact. Bigger emitters should be penalized at our expense. the need for policies that level the playing field and provide support for African airlines. This would ensure a fair and sustainable transition to SAF while recognizing the unique challenges faced by African carriers," notes Allan Kilavuka, CEO of Kenya Airways.

Another challenge is the fact that there is no production of the fuel in the continent. Establishing feedstock supplies will be an obstacle since there is poor infrastructure, refining capacity as well as inadequate regulations that are delaying the uptake. The other challenge is there is less production of SAF in the world. By 2021, SAF production in the world stood at just 125 million litres – or less than 0.1 per cent of the required estimated production capacity.

However, more companies like Caphenia have made plans to start their production and increase to over 100 million litres by 2030 and over one billion litres before 2035. Amadeus has acquired a minority stake in Caphenia, a future producer of synthesis gas, the feedstock of sustainable aviation fuel (SAF). The German-based company has developed an innovative approach to produce SAF in a more affordable and scalable way.

"Our process is affordable – using one sixth of the electricity needed for alternative SAF production methods – and scalable. We have an ambition to offer large scale production by 2028, aiming to fill the gap between anticipated SAF demand and current supply," said Mark Misselhorn, chief executive of Caphenia.

ADVERTISE WITH US

THE Aviator AFRICA

MEDIA PARTNERS

DUBAI AIRSHOW · AVIATION AFRICA · AVIADEV AFRICA · MEBAA SHOW · AFRICA AEROSPACE & DEFENCE · AERO SOUTH AFRICA · WORLD DEFENSE SHOW SAUDI ARABIA

We reach your target audience

Entebbe International Airport, 2nd Floor Passenger Terminal Building, P. O. BOX 6715, Kampala, Uganda

+256 393 515 148, +256 776 788 579
advertising@theaviator.co.ug
@aviatorafrica
The Aviator Africa
www.theaviatorafrica.co.ug
@theaviatorafrica
The Aviator Africa

The most on-time Middle East and Africa Airlines

According to data provided by Cirium®, an aviation analytics company, below are the most on time Airlines for the Middle East and Africa.

On Time Ranking No.1: Safair (FA)

Safair is an airline based at the O.R. Tambo International Airport in Kempton Park, South Africa. Safair is wholly owned by ASL Aviation Group Ltd based in Dublin, Ireland, a subsidiary of the Belgian group Compagnie Maritime Belge.
On time arrival 93.13%, Tracked Flights; 89.42%, Completion factor 100.00%, Total Flights 4,688

On Time Ranking No.2: Oman Air (WY)

Oman Air is the legacy airline (flag carrier) of the Sultanate of Oman. Based at Muscat International Airport in Seeb, Muscat, it operates domestic and international passenger services, as well as regional air taxi and charter flights.
On time arrival 90.39%, Tracked Flights; 98.11%, Completion factor 99.91%, Total Flights 4,556

On Time Ranking No.3: Etihad Airways (EY)

Etihad Airways is the national airline of the United Arab Emirates and one of the country's two major airlines. Its head office is in Khalifa City, Abu Dhabi, near Abu Dhabi International Airport. Etihad commenced operations in November 2003. It is the second-largest airline in the UAE after Emirates.
On time arrival 87.23%, Tracked Flights 99.75%
Completion factor 99.98%, Total Flights 5,907

On Time Ranking No.4: Royal Jordanian (RJ)

Royal Jordanian Airlines formerly known as Alia Royal Jordanian Airlines, is the flag carrier of Jordan with its head office in the capital, Amman. The airline operates scheduled international services over four continents from its main base at Queen Alia International Airport, with over 500 flights per week and at least 110 daily departures. It joined the Oneworld airline alliance in 2007
On time arrival 87.09%, Tracked Flights 99.37%, Completion factor 99.97%, Total Flights 3,360

On Time Ranking No.5: Qatar Airways (QR)

Qatar Airways Company Q.C.S.C. operating as Qatar Airways, is the flag carrier of Qatar. Headquartered in the Qatar Airways Tower in Doha, the airline operates a hub-and-spoke network, flying to over 150 international destinations across Africa, Asia, Europe, the Americas, and Oceania from its base at Hamad International Airport. Qatar Airways Group employs more than 43,000 people. On time arrival 85.77%, Tracked Flights 98.23%, Completion factor 99.94% Total Flights 17,072

On Time Ranking No.6: Gulf Air (GF)

Gulf Air is the state-owned airline and the flag carrier of Bahrain, which was founded in 1950 by British pilot Freddie Bosworth as Gulf Aviation. Headquartered in Muharraq, the airline operates scheduled flights to 59 destinations in 28 countries across Africa, Asia, and Europe.
On time arrival 83.50%, Tracked Flights 83.89%, Completion factor 99.05% Total Flights 4,399

On Time Ranking No.7: Saudia (SV)

Saudia, formerly known as Saudi Arabian Airlines, is the flag carrier of Saudi Arabia, based in Jeddah. The airline's primary hub is at King Abdulaziz International Airport in Jeddah. On time arrival 80.14%
Tracked Flights; 99.34%, Completion factor 99.87%
Total Flights 15,477

On Time Ranking No.8: Emirates (EK)

Emirates is one of two flag carriers of the United Arab Emirates. Based in Garhoud, Dubai, the airline is a subsidiary of The Emirates Group, which is owned by the government of Dubai's Investment Corporation of Dubai.
On time arrival 80.09%, Tracked Flights 99.61%
Completion factor 99.92%, Total Flights 14,568

On Time Ranking No.9: Middle East Airlines (ME)

Middle East Airlines – Air Liban S.A.L., more commonly known as Middle East Airlines, is the flag carrier of Lebanon, with its head office in Beirut, near Beirut–Rafic Hariri International Airport.
On time arrival 78.57%, Tracked Flights 88.71%, Completion factor 100.00%, Total Flights 2,515

On Time Ranking No.10: Kenya Airways (KQ)

Kenya Airways Ltd., more commonly known as Kenya Airways, is the flag carrier airline of Kenya. The company was founded in 1977, after the dissolution of East African Airways. Its head office is located in Embakasi, Nairobi. On time arrival 75.23%
Tracked Flights 88.37%, Completion factor 99.07%
Total Flights 3,759

THE INAUGURAL EAST AFRICAN Airshow

A UNIQUE UNIFIER OF AVIATION AND TOURISM

In the realm of aviation and tourism, there is an extraordinary event that is set to captivate the hearts of aviation enthusiasts, inspire industry leaders, and reshape the landscape of East Africa.

The East African Airshow, scheduled for December 5th to 7th, 2024, in the beautiful city of Entebbe, Uganda, is not merely an airshow; it is a transformative force that uniquely unifies aviation and tourism. It celebrates the synergy of these two sectors, promising unparalleled value for East Africa's regional economy and everyone involved, from stakeholders and delegates to the wider industry.

A Visionary Unification of Aviation and Tourism: The East African Airshow is pioneering a visionary concept that recognizes the intertwined destinies of aviation and tourism. It acknowledges that these two sectors are not separate entities but two wings of the same aircraft. This visionary endeavor aims to showcase the potential that lies in the harmonious convergence of aviation and tourism, as well as the economic and social benefits it can bring to the region.

The Rationale:
At the heart of the East African Airshow lies a compelling rationale. It's more than just a grand spectacle of airborne marvels and industry advancements; it's about creating a platform that fosters collaboration, innovation, and progress. The event unifies aviation and tourism stakeholders, creating a nexus where they can connect, learn, and explore the boundless opportunities within their reach. This convergence of minds and industries not only stimulates growth but also nurtures a sense of unity and shared purpose.

Economic Impact: The economic impact of the East African Airshow is immense. As it attracts a diverse audience, from aviation enthusiasts to government representatives, it simultaneously serves as a significant boost for the local economy. Hotels, restaurants, transport services, and various other businesses benefit from the influx of both domestic and international visitors. This event creates jobs and stimulates economic growth, reflecting a holistic approach that benefits everyone involved.

Benefits for Aviation and Tourism Sectors: Aviation:
For the aviation industry, the East African Airshow is a game-changer. It offers airlines, aircraft manufacturers, and service providers a unique platform to access new markets and expand their reach. It's not merely an event; it's an opportunity to demonstrate their capabilities, foster brand recognition, and forge valuable partnerships. Additionally, the event's education and scholarship opportunities for prospective aviators contribute to capacity building within the sector.

Tourism:
The tourism sector stands to gain immensely from the East African Airshow. By promoting the intersection of aviation and tourism, the event positions East Africa as a premier tourist destination. It showcases the region's natural wonders, cultural heritage, and unique offerings. The event not only contributes to the growth of tourism but also aligns with the industry's broader goals of promoting sustainable and responsible travel.

Stakeholders and Delegates:
For stakeholders and delegates, the East African Airshow offers a unique opportunity to network, explore collaborations, and access a wealth of industry knowledge. It's a place to exchange ideas, discuss future trends, and celebrate shared accomplishments. The event serves as a hub where aviation and tourism professionals can come together, interact, and learn from each other.

The Wider Industry:
The wider aviation and tourism industry stands to benefit from the ripple effect of the East African Airshow. The exposure and collaboration generated by this event have the potential to drive industry-wide innovations and advancements.

As East Africa's aviation and tourism sectors grow and develop, they, in turn, create a supportive environment that fosters progress and innovation

on a regional and global scale.

Benefits for the Next Generation and Human Capital Development: The East African Airshow extends its hand to the next generation of aviators, offering them an inspiring platform to explore the skies. Through the Career Expo and scholarship opportunities, the event not only nurtures young talent but also serves as a catalyst for human capital development. It's a place where dreams take flight and aspiring aviators are mentored, making it a cornerstone for the industry's future.

The Inaugural Aviation and Tourism Industry Awards:
A highlight of the East African Airshow is the inaugural Aviation and Tourism Industry Awards.

This is a momentous occasion that celebrates excellence, innovation, and the contributions of pioneers in both the aviation and tourism sectors. The awards recognize and honor individuals and organizations that have made significant strides in advancing these industries. By hosting these awards, the airshow underscores its commitment to acknowledging and celebrating the achievements and innovations that drive the growth of East Africa's aviation and tourism sectors.

The Unique Format: The East African Airshow's format is designed to be an immersive and educational experience. It spans three days, each packed with an array of activities:

Day 1: Inspiration and Thrills
- Aerial Displays: Breathtaking performances that capture the imagination.
- Static aircraft displays
- Conference and exhibition
- Cocktail networking reception

Day 2: Aerial Artistry and Insights
- Spectacular Displays: Thrilling aerial performances that continue to mesmerize.
- Business Conference: Industry leaders come together to discuss the future of aviation.
- Business Exhibitions: Aviation and tourism enterprises showcase their offerings.

Day 3: The Grand Finale
- Career Expo: An opportunity for the next generation to explore aviation careers.
- Awards Gala: Celebrating excellence in aviation and tourism.
- Post-Event Tourism Activities: Delegates have the opportunity to explore Uganda's natural beauty.

Inspiration for Potential Advertisers: For potential advertisers, the East African Airshow is more than a marketing opportunity; it's a chance to align with an event that is reshaping industries, fostering innovation, and inspiring the next generation.

The event's reach extends beyond borders, attracting a diverse audience of aviation enthusiasts, industry leaders, government representatives, and media from across East Africa and beyond. Advertising at this event is not just about promoting products or services; it's about becoming part of a movement that celebrates the boundless potential of aviation and tourism in East Africa.

NEW

COMPLETE GUIDE TO BRAZIL'S AVIATION GIANT

KEY Publishing

EMBRAER

INSIDE THE WORLD'S THIRD BIGGEST COMMERCIAL AIRCRAFT MANUFACTURER

EMBRAER
€8.99
22 >
9 781802 822168

E-JET AIRLINERS

C-390 MILLENNIUM

PRAETOR FAMILY

COMMERCIAL | MILITARY | EXECUTIVE

EMBRAER PHENOM 300E

The jet on every pilot's wish list

Embraer's Phenom 300E is an enhanced version of Phenom 300 and it received its certification in march 2020.

James Kamali
Jk2000@gmail.com

The Phenom 300E is the fastest and longest-ranged single-pilot jet, with a high-speed cruise of 464 knots and a five-occupant range of 2,010 nautical miles (3,724 km) with NBAA IFR reserves. With its class's best climb and field performance, the Phenom 300E costs less to operate and maintain than its peers. The aircraft is capable of flying at 45,000 feet (13,716 meters), powered by two Pratt & Whitney Canada PW535E1 engines with 3,478 pounds of thrust each.

The pilot-friendly cockpit enables single-pilot operations and offers the advanced Prodigy Touch Flight Deck, based on the acclaimed Garmin G3000 avionics suite. It is also the first and only light jet to offer Embraer's Runway Overrun and Awareness Alerting System (ROAAS), which enhances safety, and also features autothrottle, for reduced workload. The aircraft features carried from a class above include single-point refueling, an externally serviced lavatory, and an airstair.

Additionally, the Phenom 300E offers a spacious cabin with the Embraer DNA Design and a baggage compartment among the largest in its category. The largest windows in the class deliver abundant natural lighting in the cabin as well as in the private lavatory. The comfort of the seats, with reclining and full movement capability, is enhanced by the best pressurization among light jets (6,600 ft. maximum cabin altitude).

The Phenom 300E features distinct temperature zones for pilots and passengers, a wardrobe and refreshment center, voice and data communications options, and an entertainment system.

Phenom 300E new autothrottle feature

- Autothrottle will enhance the aircraft's pilot-centric cockpit featuring the advanced Prodigy Touch Flight Deck, based on the acclaimed Garmin 3000 avionics suite.
- Feature will be available as an optional item for new Phenom 300E aircraft and via a service bulletin for aircraft in operation.

Embraer in October 2023 announced a new autothrottle feature that will be available for the Phenom 300E aircraft. The optional feature is set to enhance the already single-pilot-friendly cockpit of the Phenom 300E, which includes the highly advanced Prodigy Touch based on Garmin G3000, further enhancing the aircraft's operational capabilities.

Pilots will be able to enjoy a more automated and intuitive flying experience through the autothrottle's advanced automation technology, which will assist in throttle control during various phases of flight. For passengers, this translates to even greater comfort in the cabin. The feature will be available as an optional item for new Phenom 300E aircraft, in the third quarter of 2024. Embraer is also committed to supporting in-service aircraft via a service bulletin (SB) available from the fourth quarter of 2024, for aircraft that have received factory-incorporated provisions.

Michael Amalfitano, President & CEO of Embraer Executive Jets noted that the company was excited to introduce autothrottle to the Phenom 300E's avionics suite. It is another example of Embraer's mindset of continued improvement, listening to customers feedback and elevating an industry-leading product even further. Innovations like this enhance the experience and deliver even more value to operators. And that is why an aircraft like the Phenom 300E continues to offer the ultimate experience in its category.

With this improvement, the Phenom 300 series continues to lead the way in performance, technology, and comfort. The world's best-selling light jet for 11 years in a row, it is also the most-flown private jet in the USA—with over 700 units in operation and over 2 million flight hours logged. The aircraft is capable of reaching Mach 0.80 and offers unmatched avionics—including the industry-first Runway Overrun Awareness and Alerting System (ROAAS), Emergency Descent Mode, coupled go-around, and more.

Embraer's Phenom 300E boosts of unmatched technology, superior performance and uncompromised comfort.

Busiest Airports in the World: October 2023

According to OAG's schedules analyser for the month of October 2023, the following are the Top 10 Busiest Global Airports in the World by seat capacity calculated using total frequency (domestic and international flights)

By Oscar Ssemawere
oscarsema@gmail.com

1. Atlanta Hartsfield-Jackson International Airport (ATL)

Atlanta Hartsfield-Jackson International Airport came into first position for the month of October 2023 with 5,360,834 number of seats.

2. Dubai International Airport (DXB)

Coming in second place is Dubai International Airport with 4,903,701 number of seats for the month of October.

3 . Tokyo International (Haneda) (HND)

Closely following in third place is Tokyo International (Haneda) which saw a total of 4,592,410 seats recorded for the month of October.

4. London Heathrow Airport (LHR)

London Heathrow Airport had a seat capacity of 4,365,818 in the month of October 2023 and comes in fourth place.

5. Dallas Fort worth International Airport (DFW)

In fifth place is Dallas Dallas/Fort worth International Airport with 4,219,118 recorded seats for the month of October 2023.

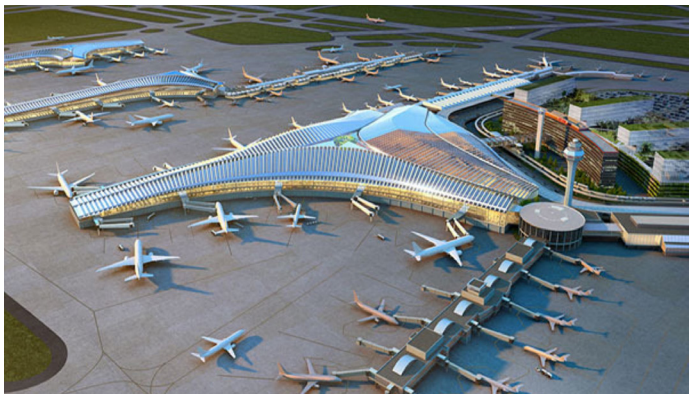
6. Denver International Airport (DEN)

Denver International Airport recorded 4,188,906 number of seats for the month of October and comes in sixth position.

7. Istanbul Airport (IST)

Istanbul Airport comes into seventh place with a total number of 4,053,521 recorded for the month of October.

8. Chicago O'Hare International Airport (ORD)



Chicago O'Hare International Airport was placed in position eight with 3,860,607 total number of seats recorded for the month of October.

9. Los Angeles International Airport (LAX)

Los Angeles International Airport recorded a total of 3,845,208 for the month of October placing it at position nine on this list.

10. Guangzhou International Airport

Guangzhou International Airport is the last on the list of top ten busiest airports in the world for the month of October coming in number ten with 3,808,088 number of seats recorded.

BELUGA XL

Flying the Airbus dream to greater heights

The Beluga XL (formally designated as the A330-700L) is the successor to Airbus' Beluga ST transporter that was designed to transport aircraft components between Airbus factories and assembly plants located across Europe.

The Beluga XL program was officially launched in November 2014 to meet challenges in the logistical transport requirements of Airbus.

The manufacturer already operated five Beluga STs in this role (based on the A300-600) but required an aircraft with even greater payload capability to carry bigger wings and other components as the Airbus family of civil aircraft has developed over time. The Beluga XL had its maiden flight five years ago (July 2018) and entered service with Airbus Transport International (ATI), the European aerospace group's logistics division) in February 2021.

Before using the Beluga STs, Airbus performed the task with a fleet of four Super Guppies - a four-engine turboprop freighter that Boeing originally developed in the 1960s.

These were replaced with the Beluga ST due to their limited cargo capability, which in turn are being replaced by the Beluga XL fleet.
Beluga XL - Unmatched capabilities
Sized at 23 ft (seven meters) longer and 3.3 ft (one meter) wider than its Beluga ST predecessor, the latest incarnation of the Airbus super transporter has a load capacity 30% higher than the Beluga ST.

Thanks to new efficiency in loading systems, the turn-around time for the Beluga XL is approximately 1 hour, reduced by almost half compared to a Beluga ST. With a fuselage length of 207 ft (63 meters) and a width of 29 ft (8.8 meters), plus a cabin height of 24.6 ft (7.5 meters), the aircraft's unique design provides a large cargo door located above the flight deck which facilitates the loading of entire wings and large sections of fuselage into its voluminous cargo compartment which runs from nose

to tail.
The Beluga XLs capacious cargo hold measures 7,247 cubic ft (2,209 cubic meters), the largest among all civil or military aircraft currently in service worldwide. According to Airbus, the Beluga XL can carry two completed wings of the A350 XWB, while the Beluga ST could only manage one. With a maximum payload of 51 tonnes, the Beluga XL freighter has a range of 4,000 km (2,200NM). All six Beluga XL aircraft are fitted with Rolls-Royce Trent 700 engines.

Joining a busy worldwide fleet

The sixth and final Beluga XL will soon take up its role within the ATI fleet, which currently operates between 11 European destinations. The Beluga XLs are gradually replacing the existing five-member-strong Beluga ST fleet, which will be retired from operations transporting Airbus airplane components.

However, this will not be the end of the line for the Beluga ST fleet. The planes are being gradually phased into another operation division of ATI - Airbus Beluga Transport (AiBT). Created in July 2022, AiBT is responsible for operating the five Beluga STs under its own Air Operators Certificate (AOC).

While operations of AiBT have so far focused on missions for other Airbus divisions (such as the space and helicopters divisions), according to Airbus, AiBT aims to take on an increasing proportion of external commercial customers as the Beluga XLs take over the primary role of transporting commercial airplane components for Airbus.

In February of this year, Reza Fazlollahi, Head of Sales at AiBT, stated that AiBT had already filled almost 50% of its slots for the rest of 2023, including many requests for outsize cargo transportation missions worldwide.

Speed and efficiency

As with the BelugaST, BelugaXLs are equipped with cargo loading systems to ensure easy and efficient handling of payloads, controlled by the trained crews of Airbus Transport International (ATI) subsidiary.
Thanks to new efficiency in systems, the turn-around time (TAT) for the BelugaXL is approximately 1 hour, reduced by almost half when compared to a BelugaST.
Flight deck

The BelugaXL is operated by two pilots, taking advantage of the modern A330 cockpit on which the latest systems and technologies developed for other programmes have been transferred – ensuring technology lead and commonality benefits.

Those include fly-by-wire flight controls, liquid crystal displays (LCDs), and the Airport Traffic Situational Awareness (ATSA) system. In late 2021, RNP AR (Required Navigation Performance Authorisation Required) will be added. This system improves access at locations with challenging surroundings.

At the end of 2022, ROPS (Runway Overrun Prevention System) and AP/FD TCAS (Autopilot/flight Director Traffic Collision Avoidance System) are to be incorporated. During landings, the ROPS predicts operational landing distance and warns crews on overrun risk during both auto-braking and manual braking operations, whereas automatic avoidance manoeuvreswith AP/FD TCAS (Autopilot/flight Director Traffic Collision Avoidance System) are performed in case of collision risk with another aircraft.

Source: Airbus

INTERVIEW:

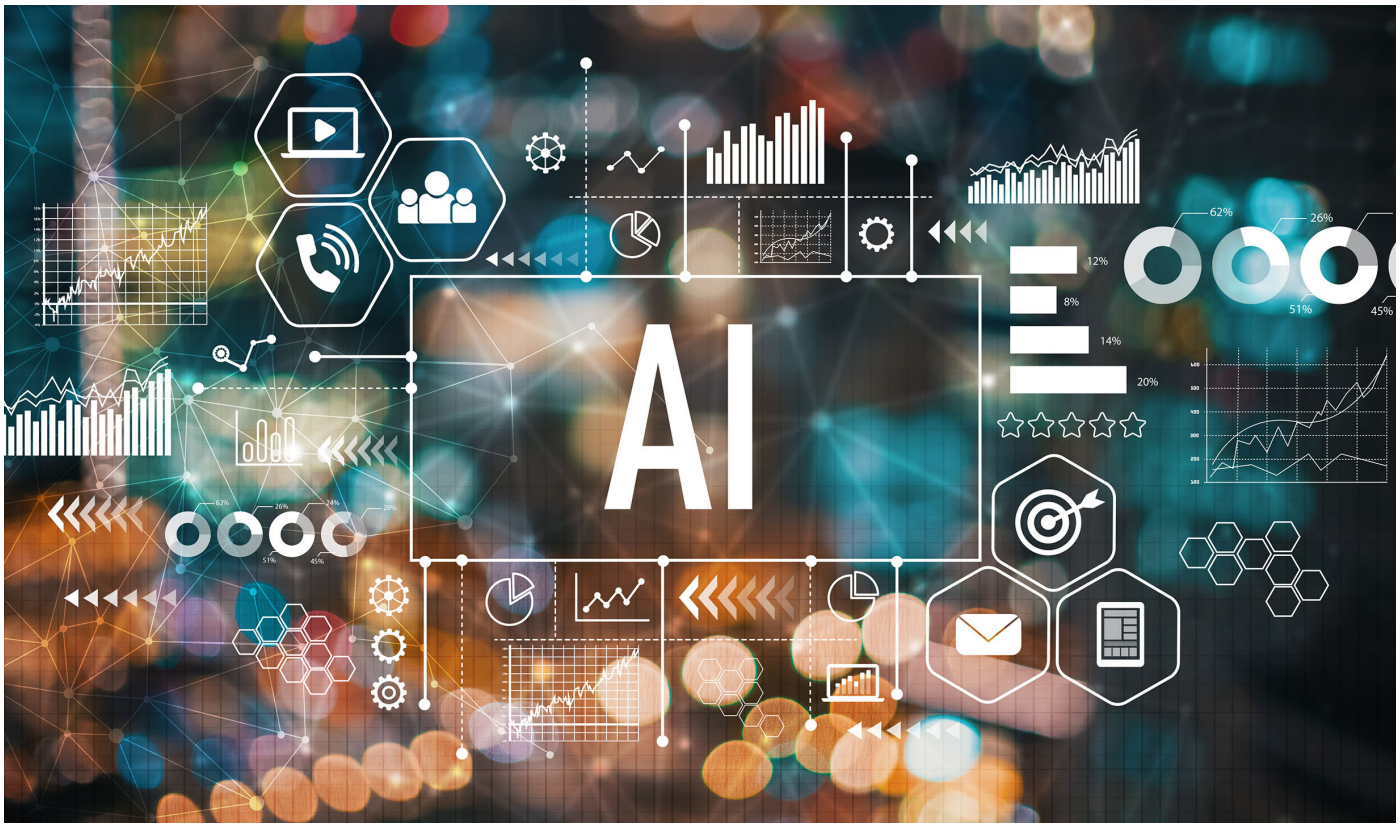
Kevin Hightower & Niha Shaikh ON AI IN AVIATION

Kevin hightower is Cirium's VP of product Management and Niha Shaikh is Cirium's VP of Air operations. In this Q&A, Kevin Hightower and Niha Shaikh, take a look at what AI is, and how it might help or hinder the aviation industry

John Isiko
jisiko@gmail.com

Qn: What is AI in simple terms?
AI is basically a series of functions performed by a computer system that typically requires human intelligence to complete. It's essentially technology that mimics human thinking and problem solving.

Qn: AI has been spotlighted recently with the rise of generative tools such as ChatGPT, but is it a 'new' phenomenon?
No, AI as a technology is not new. Generative AI tools have become more mainstream and widely used, because of the evolution of the interfaces of tools such as ChatGPT and Google Bard, and until now we didn't have any interfaces that were commoditised or especially user friendly.
There are quite possibly many companies/industries that



haven't known they are using AI technology up to this point, such as virtual customer service tools or predictive text, and the explosion of generative AI has really put this technology as a whole on the centre stage.

Qn: In its current form, how useful is AI to the aviation industry?
Generative AI is really good at two things: getting started and answering questions about a problem the user is facing, and polishing something that one has already created but might want to add an extra layer of depth to.

So, for the aviation industry, it is great at helping the user kick off a project or answering questions about industry trends, and background research on an airline or airport, as examples. However, at the moment, models leveraging this tech doesn't have the full datasets or critical analysis capabilities needed to make more informed and analytical judgements about the industry and/or its players.

Aviation, like many other industries, is very reliant on data but generative AI tools, in their current form, aren't especially adept at handling numbers and an advanced amount of data.

Even then, like with so many other industries, this technology shows promise in reducing the time aviation professionals spend on those more analogue, day-to-day tasks.
Effectively leveraging this for the right type of tasks could greatly reduce the cognitive load on humans in the loop. It isn't replacing humans, and is useful in supplementing their own capabilities to improve decision making.

Qn: Does AI represent a threat to the industry in any way?
No, it should complement and improve the industry if anything. If you can automate some of the routine tasks you're performing, then it frees up time to spend on those non-routine tasks that typically require more critical thinking and human insight.

For aviation, it will help reduce the number of tedious tasks that people have to perform and, if applied properly, it should lead to better results, better passenger experiences, safer and cleaner travel and, perhaps, more improved employee retention and recruitment.

Qn: How useful is AI to airlines and airports, in particular?
It has the potential to completely transform operations for airlines and airports. There are lots of blind spots or siloes within airline and airport operations, so effective use of this technology could really help to break these down and transform how the industry operates.

We are already seeing airlines leverage different branches of AI technology when it comes to the retail and commercial side of their operations, with tools such as AI-powered chat bots that help improve the customer experience. So, it's only a matter of time before more of these AI-powered tools are in use across wider airline

operations.
Adopting AI is like adopting any new technology though. There are good ways of doing it and bad ways of doing it. Providing the technology is implemented in the right way that suits the needs of the business, with the right due diligence and checks, it should act as a genuine business driver for airlines and airports.

Qn: What future role could AI have in the aviation and travel sectors?
The possibilities are endless, especially considering the rise of the Unmanned Aircraft System Traffic Management (UTM) market where more objects will be seen sharing the airspace that has previously only been occupied by manned vehicles. The market is only set to increase for UAVs, but the current systems are not equipped to deal with this, so there is a big opportunity here for technology like this to help upskill those systems to cope with future increases in air traffic.

Aviation is an industry that's no stranger to innovation and evolution and, in fact, has been a leader when it comes to the adoption of particular innovations such as GPS, radio communication, and radar technology. Leveraging AI could be another innovation that could change the industry for the better, making operations more efficient and optimising processes to drive better performance across the sector.

AIRBUS C295
TACTICAL AIRLIFTER

Paul Mwangi
p.mwangi254@gmail.com

Airbus' new generation C295 is a robust, reliable and highly versatile tactical transport that is tailored for missions that range from carrying troops and cargo, maritime patrol, airborne warning, surveillance and reconnaissance to signals intelligence, armed close air support, medical evacuation, VIP transport and airborne firefighting.

It is capable of carrying up to nine tonnes of payload or as many as 71 troops at a maximum cruise speed of 260 kts. Adding to its flexibility is the capability of being equipped for the air-to-air refueling of fixed-wing aircraft and helicopters.

Fitted with a retractable landing gear and featuring an unobstructed 12.69-meter-long pressurized cabin, the C295 cruises at altitudes up to 30,000 ft., while also retaining excellent low-level flight characteristics. It has remarkable short take-off & landing (STOL) performance from unpaved, soft, and sandy/grass airstrips.

The C295 is powered by two Pratt & Whitney Canada PW127G turboprop engines that provide excellent manoeuvrability, outstanding hot-and-high performance, with fuel consumption for a very long endurance of up to 13 hours aloft.

With more than 200 aircraft in operation, the C295 has an outstanding track record of reliability, demonstrating daily its worth as a highly efficient workhorse. The C295's baseline now includes winglets that provide even better performance in all phases of flight, delivering improved takeoff characteristics at hot and high airfields, enabling higher cruise altitudes (especially at higher weights), increasing endurance, and reducing overall fuel consumption by three to six percent.

C295 operators have logged a combined 500,000 flight hours in all types of environments, demonstrating the effectiveness and soundness of the aircraft and system design.

The C295 is the perfect "workhorse" offering unique versatility and proven reliability for the needs,

of military forces, governments and non-governmental agencies – today and tomorrow.

Proven with the world's armed forces

The C295 is combat proven, having been successfully used during long deployments (up to two years, flying as many as 100 hours per aircraft per month) in remote areas such as Chad, Iraq and Afghanistan. It routinely operates in the hot and humid conditions of the Brazilian jungle and Colombian mountains, in the dusty and very hot deserts of Egypt and Algeria, and in the extremely cold and icy winters of Poland, Finland and Kazakhstan.

The C295 offers optional self-protection equipment that has been in service across such hostile environments as Iraq and Afghanistan, including cockpit armour, chaff/flare dispensers, along with radar warning (RWR), missile warning (MAWS) and laser warning (LWS) systems. In-flight refuelling capability is an option for the aircraft.

Working for the benefit of society

The C295 is widely used for humanitarian and other non-military operations by a variety of governmental and non-governmental agencies. Missions include disaster relief flights; search and rescue (SAR); and such surveillance and control duties as the monitoring of illegal immigration, drug smuggling, piracy, illegal fishery; as well as maritime pollution control and deterrence, and the monitoring of deforestation.

With its short take-off and landing (STOL) characteristics and the ability to use unprepared airstrips, C295s are deployed for resupply trips into remote locations.

Fully Integrated Tactical System

Entirely conceived and developed by Airbus Defence and Space, the Fully Integrated Tactical System (FITS) is the C295's core mission system, enabling the aircraft to carry out duties that range from anti-submarine and anti-surface warfare (ASW/ASuW) to search and rescue (SAR), maritime patrol, signals intelligence and environmental protection, among others.

FITS consists of an onboard suite of networked computers and displays that directly provide the crews with the required information in a processed manner, allowing them to perform missions much easier and more efficiently. In the complex arena of surveillance operations, the design challenge for FITS was not just to gather data from today's sophisticated multiple sensors, but to process and present the information in an "intelligent" way to let the crew act on it.

This modular, flexible and adaptable system collects, classifies and displays the various types of sensor data gathered in different types of surveillance missions and provides it to the crew via a highly intuitive interface. The result is maximised operational effectiveness, thanks to the enhanced level of information integration and reduced workload onboard the aircraft.

FITS consists of multi-function crew consoles, connected to central processors via a high-speed local area network (LAN) and also linked to the aircraft navigation and communication systems. The airborne segment is complemented by a ground-based support centre for mission analysis and training.

Typical FITS configurations vary from two consoles on the C295 Maritime Surveillance Aircraft (MSA) to five consoles on versions for maritime patrol (MPA), anti-submarine warfare (ASW) and signals intelligence (SIGINT) missions. Sensors currently integrated with FITS include radar, electro-optic/infrared (EO/IR), acoustics, magnetic anomaly detector (MAD), automatic identification system (AIS), identification friend or foe (IFF) interrogator, communications and electronic intelligence (COMINT/ ELINT), and sea pollution detection systems.

FITS also is integrated with the aircraft's navigation and communications systems, including VHF/UHF/HF radios, satellite communications (SATCOM), and high-frequency Link 11 and Link 16 datalinks. In the anti-submarine warfare role, it additionally integrates sonobuoy and armament inventory management, plus launch pattern control.

FITS' flexibility and modularity give it excellent growth capability, allowing the system to handle new and updated sensors, along with additional consoles as technology and operational requirements evolve. As such, it will be an integral part of the C295's Airborne Early Warning (AEW) version.

Advanced cockpit technology

The C295's state-of-the-art cockpit allows a full range of operations to be performed by a crew of two members (one captain and one co-pilot). It is fitted with Collins Aerospace's Pro Line Fusion®, which is a Commercial-Off-The-Shelf (COTS) avionics system that complies with current and future airspace regulations.

The avionics system includes four 14.1-inch multifunctional touchscreen displays with a very large surface area and an intuitive and redundant human-machine interface for improved situational awareness, lower pilot workload and enhanced mission effectiveness. Other features include reconfigurability for the screens, electronic charts and checklists, as well as system status reports. The cockpit is compatible with night vision goggles (NVGs).

System functionality supports the requirements for both civil andmilitary tactical environments: ADS-B Out, TCAS II v7.1, RNAV routes, RNP approaches, controller pilot data link communications (CPDLC), weather radar with wind shear and turbulence prediction, etc. The autopilot and flight director system are fully integrated with the flight management subsystem through LNAV (lateral navigation) and VNAV (vertical navigation) operational modes.

AIRBUS A400M Atlas

Vincent M. Mupenzi
v.mupenzi@theaviator.co.ug

The Airbus A400M Atlas is a European four-engine turboprop military transport aircraft. It was designed by Airbus Military (now Airbus Defence and Space) as a tactical airlifter with strategic capabilities to replace older transport aircraft, such as the Transall C-160 and the Lockheed C-130 Hercules.The A400M is sized between the C-130 and the Boeing C-17 Globemaster III; it can carry heavier loads than the C-130 and can use rough landing strips. In addition to its transport capabilities, the A400M can perform aerial refueling and medical evacuation when fitted with appropriate equipment.

The A400M's maiden flight, originally planned for 2008, took place on 11 December 2009 from Seville Airport, Spain. Between 2009 and 2010, the A400M faced cancellation as a result of development programme delays and cost overruns; however, the customer nations chose to maintain their support for the project. A total of 174 A400M aircraft had been ordered by eight nations by July 2011. In March 2013, the A400M received European Aviation Safety Agency (EASA) certification. The first aircraft was delivered to the French Air Force in August 2013.

Development

The project has its origins in the Future International Military Airlifter (FIMA) group, which was established in 1982 as a joint venture between Aérospatiale, British Aerospace (BAe), Lockheed, and Messerschmitt-Bölkow-Blohm (MBB)

with the goal of developing a replacement for both the C-130 Hercules and Transall C-160.
Varying requirements and the complications of international politics meant that progress on the initiative was slow. In 1989, Lockheed decided to withdraw from the grouping; it went on to independently develop an upgraded Hercules, the C-130J Super Hercules. With the addition of Alenia of Italy and CASA of Spain, the FIMA group became Euroflag.

Project management evaluated twin and quad turbofan engine configurations, a quad propfan configuration, and a quad turboprop configuration, eventually settling on the turboprop option. Since no existing turboprop engine in the western world was powerful enough to reach the projected cruise speed of Mach 0.72, a new engine design was required.

Originally, the SNECMA M138 turboprop (based on the M88 turbofan core) was selected, but this powerplant was found to be incapable of satisfying the requirements. During April 2002, Airbus Military issued a new request for proposal (RFP), which Pratt & Whitney Canada with the PW180 and Europrop International answered.

In May 2003, Airbus Military selected the Europrop TP400-D6. United Technologies alleged that the selection was a result of political interference.A Europrop partner executive said on 16 April that Airbus was close to selecting the P&WC offer, claiming it was more than €400 million (US$436.7 million) cheaper than Europrop's bid. Then as the original deadline for the engine decision passed, Airbus CEO Noel Forgeard said P&WC's bid was nearly 20 percent less expensive and declared that "As of today Pratt and Whitney is the winner without doubt, a much lower offer could make us change our minds." inviting Europrop to revise its offering, which it reportedly reduced in price by 10 or 20 percent.A later report described the revised bid as exceeding P&WC's bid by €120 million.

The original partner nations were France, Germany, Italy, Spain, the United Kingdom, Turkey, Belgium, and Luxembourg. These nations decided to charge the Organisation for Joint Armament Cooperation (OCCAR) with the management of the acquisition of the A400M. Following the withdrawal of Italy and revision of procurement totals, the revised requirement was for 180 aircraft.

The first flight was forecast to occur during 2008 and the first delivery was to be in 2009. On 28 April 2005, South Africa joined the programme with the Denel Saab Aerostructures receiving a contract for fuselage components.Malaysia is the second country outside Europe to be involved. Malaysia through CTRM is responsible for manufacturing composite aero components for the aircraft.

The A400M is positioned as an intermediate size and range between the Lockheed C-130 and the Boeing C-17, carrying cargo too large or too heavy for the C-130 while

able to use rough landing strips.

Flight testing

Before the first flight, required airborne test time on the Europrop TP400 engine was gained using a C-130 testbed aircraft, which first flew on 17 December 2008. On 11 December 2009, the A400M's maiden flight was carried out from Seville. On 8 April 2010, the second A400M made its first flight.

In July 2010, the third A400M took to the air, at which point the fleet had flown 400 hours over more than 100 flights. In July 2010, the A400M passed ultimate-load testing of the wing.On 28 October 2010, Airbus announced the start of refuelling and air-drop tests. By October 2010, the A400M had flown 672 hours of the 2,700 hours expected to reach certification. In November 2010, the first paratroop jumps were performed; Enders and A400M project manager Bruno Delannoy were among the skydivers.

In late 2010, simulated icing tests were performed on the MSN1 flight test aircraft using devices installed on the wing's leading edges. These revealed an aerodynamic issue causing horizontal tail buffeting, resolved via a six-week retrofit to install anti-icing equipment fed with bleed air; production aircraft are similarly fitted. Winter tests were done in Kiruna, Sweden during February 2011. In March 2012, high altitude start and landing tests were performed at La Paz at 4,061.5 m (13,325 ft) and Cochabamba at 2,548 m (8,360 feet) in Bolivia.

By April 2011, a total of 1,400 flight hours over 450 flights had been achieved. In May 2011, the TP400-D6 engine received certification from the EASA. In May 2011, the A400M fleet had totaled 1,600 hours over 500 flights; by September 2011, the total increased to 2,100 hours and 684 flights. Due to a gearbox problem, an A400M was shown on static display instead of a flight demonstration at the 2011 Paris Air Show. By October 2011, the total flight hours had reached 2,380 over 784 flights.

In May 2012, the MSN2 flight test aircraft was due to spend a week conducting unpaved runway trials on a grass strip at Cottbus-Drewitz Airport in Germany. Testing was cut short on 23 May, when, during a rejected takeoff test, the left side main wheels broke through the runway surface. Airbus Military stated that it found the aircraft's behaviour was "excellent". The undamaged aircraft returned to Toulouse.

At Royal International Air Tattoo 2012 the aircraft was officially named "Atlas"
On 14 March 2013, the A400M was granted type certification by the EASA, clearing its entry to service

Specifications

General characteristics

- Crew: 3 or 4 (2 pilots, 3rd optional, 1 loadmaster)
- Capacity: 37,000 kg (81,600 lb)
- 116 fully equipped troops / paratroopers
- up to 66 stretchers accompanied by 25 medical personne
- cargo compartment: width 4.00 m (13.12 ft) x height 3.85 m (12.6 ft) x length 17.71 m (58.1 ft) (without ramp 5.40 m (17.7 ft))
- Length: 45.1 m (148 ft 0 in)
- Wingspan: 42.4 m (139 ft 1 in)
- Height: 14.7 m (48 ft 3 in)
- Wing area: 225.1 m2 (2,384 sq ft)
- Empty weight: 78,600 kg (173,283 lb)
- Max takeoff weight: 141,000 kg (310,852 lb)
- Fuel capacity: 50,500 kg (111,300 lb) internal fuel
- Max landing weight: 123,000 kg (271,000 lb)
- Powerplant: 4 × Europrop TP400-D6 turboprop, 8,200 kW (11,000 hp) each
- Propellers: 8-bladed Ratier-Figeac variable pitch propellers with feathering and reversing capability, 5.3 m (17 ft 5 in) diameter

Performance

- Maximum speed: Mach 0.72
- Cruise speed: 781 km/h (485 mph, 422 kn) at 9,450 m (31,000 ft)
- Initial cruise altitude: 9,000 m (29,000 ft) at MTOW
- Range: 3,300 km (2,100 mi, 1,800 nmi) at max payload
- Range with 30-tonne payload: 4,500 km (2,450 nmi)
- Range with 20-tonne payload: 6,400 km (3,450 nmi)
- Ferry range: 8,700 km (5,400 mi, 4,700 nmi)
- Service ceiling: 12,200 m (40,000 ft)
- Wing loading: 637 kg/m2 (130.4 lb/sq ft)
- Tactical takeoff distance: 980 m (3,215 ft)
- Tactical landing distance: 770 m (2,530 ft)
- Turning radius (ground): 28.6 m

Cheapest European cities to fly into

Daniel Bakalangudde
B.Daniel@theaviator.co.ug

Shoulder season is a prime time to save on flights and these destinations saw the biggest drop in prices.
European travel was all the rage this summer, but we think this fall and winter might be better times to travel across the pond. Why? Prices including airfare are going down.

To help you get started with your search, Expedia has shared with us the 10 cheapest European cities to fly into right now, with the cost percentage difference as compared to this summer. And while this list is tied to seasonal data, many of these destinations are typically among the cheapest European cities to fly into throughout the year.

OSLO - Norway
Norway's capital city is a cultural hub with a thriving urban core but plenty of easy access to nature. That makes it a prime fall getaway spot. If you find it a bit too chilly to be outside (in October, temperatures usually hover around 50 degrees Fahrenheit during the day), head inside one of Oslo's remarkable museums, like the Munch Museum or the Museum of the Viking Age. If you're willing to bundle up, you might be rewarded with natural wonders ranging from whale sightings to northern lights appearances.

The best Balearic Island in Spa in to vist for every traveller

STOCKHOLM - Sweden
Like Oslo, Stockholm has perfect sweater weather in the fall. And that means there's no better time to take a stroll through the autumnal foliage in one of the many urban parks in the capital city. Of course, Stockholm has its fair share of indoor activities, too, including top museums: visit the Vrak Museum of Wrecks (shipwrecks, that is) or ABBA The Museum, depending on your interests. And if you're brave enough, you can even partake in the

Brussel's best city park - Lonely Planet

classic sauna tradition — that includes a plunge into the chilly waters after a sweat.

OKTOBERFEST - Munich

Oktoberfest might be over, but there's still plenty to do in the fall and winter in Hamburg. In fact, the city has many of the classic fall activities you might expect at home, from apple picking to Halloween celebrations. If you're in search of winter coziness, we recommend popping into a café for a hot coffee. Or you can sample global cuisine in Hamburg's vibrant multicultural culinary scene. Fancy a bit of history? Take a day trip to any of the nearby castles and palaces, including Ludwigslust Castle, which is known as the "Versailles of the North."

IBIZA in Spain

Sure, Ibiza is perhaps best known as a summer destination thanks to its over-the-top clubs and parties. But visiting the Balearic island in the autumn or winter allows you to enjoy a different side of Ibiza. With fewer crowds, it's easy to snag restaurant reservations to enjoy fine dining — plus, Ibiza hosts the annual Ibiza Sabor food festival throughout October. It's also an ideal time to go hiking or biking across Ibiza, as the temperatures have cooled down (but it's still warm enough for a beach day here and there, too).

Copenhagen – Denmark

Copenhagen is a vibrant city all throughout the year, but fall is a particularly lovely time to walk its picturesque streets. It's also a great time to visit the nearby Dyrehaven, or Deer Park, a UNESCO World Heritage Site where more than 2,000 free-range deer roam some four square miles of woods and lakes. Chilly weather is synonymous with hygge season in Denmark, so if you simply want to curl up in your hotel room or vacation rental with a good book, that's also an option.

With an average temperature between 60 and 70 degrees, fall is a fabulous time to explore this historic city. Besides visiting typical main attractions, consider celebrating one of the city's many fall festivals, like Fiesta de la Almudena, a celebration of Madrid's patron saint, the Virgin of Almudena.

Dublin, Ireland

Ireland may be associated with the color green, but in the fall, it's all about autumnal hues. Go for a walk in Phoenix Park, Europe's largest enclosed city park at 1,750 acres, to enjoy fall foliage. Afterward, head to one of the city's many pubs — they're open year-round, of course. One of Dublin's more unique fall activities is the annual Bram Stoker Festival, which celebrates the famous Irish writer, his works, and all things Gothic and spooky.

Brussels, Belgium

There's no better time for a walk in a Brussels park than in the fall, so long as you've brought your rain jacket, just in case. Pick from the Park Royale, built in the 18th century; the Park of Tervuren, known for its fall foliage; or Bois de la Cambre, an English-style park. And during the colder months, and you can't go wrong with a hot chocolate at one of the many chocolate shops or a Belgian beer at a bar in town.

Geneva, Switzerland

Fall is the start of a new cultural season in Geneva, so there's likely a new exhibit at many of the city's museums, from the Musée D'Art Et D'Histoire to the Patek Philippe Museum. Autumn is also a great time for day trips to Chamonix — you'll be visiting before the ski season starts, so plan on hiking, golfing, or just strolling through the charming town.

Edinburgh, Scotland

Though it gets chilly, Edinburgh is an ideal off-season destination for travelers looking for a charming city vacation. Edinburgh has a special kind of fall foliage. In autumn, some of the ivy that creeps up its historic buildings turns a beautiful red — pair that with the frequently gloomy weather, and you've got the makings for a cozy getaway. Afternoon tea sounds like the perfect way to warm up after a brisk day of sightseeing.

Florence, Italy

Late summer into fall is the harvest season in Tuscany, so you can use Florence as your home base for forays into the countryside. It's all about grapes, truffles, olives, and grains, so you can expect delicious meals just about everywhere in the region (though the food is great year-round).

Since the crowds are smaller at this time of year, you should visit some of Florence's most famous sites, from the Uffizi Gallery to the Duomo.

Credit: Stefanie Waldek

TOP FIVE HEAVIEST AIRLINERS IN THE WORLD

As creative innovations and modern engineering collide, aircraft manufacturers consistently push the envelope on how big, long, and heavy new aircraft can be to redefine the marvel of air travel. To gauge just how heavy these aircraft can be, here are the top five.

1. Antonov An-225 Mriya

With a maximum take-off weight of approximately 640 tonnes or 640,000 kilograms, the Antonov An-225 Mriya continues to hold onto the crowned record of being the heaviest aircraft ever built.

Powered by six turbofan engines, the super-sized aircraft was previously used to transport odd-sized cargo like space orbiters and space shuttles.

After the suspension of the Soviet space program following the collapse of the Soviet Union, the Antonov An-225 Mriya was eventually used to transport oversized cargo for Antonov Airlines.

Unfortunately, the only completed aircraft was destroyed last year after Russia invaded Ukraine, and even as Antonov announced rebuilding plans last November, progress on this still remains stale.

2. Airbus A380

Following rather far behind in second place is none other than the double-decker superjumbo, the Airbus A380.
This four-engined aircraft is often hailed as the King of the Skies due to its sheer size and stunning maximum capacity of carrying over 850 passengers, making it a true icon in its time for modern air travel and the largest commercial airliner worldwide - also hailing as the only passenger aircraft to be categorized as 'Super' by the Federal Aviation Administration.

Given its significantly colossal size, the Airbus A380 unsurprisingly has a maximum take-off weight of 560 tonnes or 560,000 kilograms. Despite being such a unique marvel, the superjumbo faced untimely challenges that eventually led to its premature discontinuation in production.

But even though the aircraft's production lifespan was superbly short-lived, the Airbus A380 remains a genuine symbol of pushing the unlimited boundaries in the aviation industry.

3. Boeing 747-8F

As the undisputed Queen of the Skies, the Boeing 747 jumbo jet certainly earned a place in this list - although it will be the last-ever designed and largest freighter variant closing off the podium.

Known as the extended and final freighter version of the iconic Boeing 747 program, the 747-8F boasts a maximum take-off weight of approximately 447.7 tonnes or about 447,700 kilograms.

In comparison, the passenger version of the Boeing 747-8 has a slightly lesser maximum take-off weight of about 443.6 tonnes or 443,600 kilograms, and it can transport over 460 passengers in a typical three-class cabin configuration. Then the Boeing 747-400ER lags slightly behind with a maximum take-off weight of about 412.7 tonnes or 412,770 kilograms.

4. Antonov An-124

Coming in as a powerful fourth ranker is yet another Antonov aircraft, the four-engined cargo freighter known as Antonov An-124.

In its early years, this aircraft scored several pointers for the Soviet Union during the Cold War by achieving world records, such as the largest aircraft at the time, the heaviest commercial load carried by air, and many more.

And like the Boeing 747, this uniquely designed aircraft has gone through numerous versions, with the newest variant - the AN-124-100M-150, boasting a maximum take-off weight of about 402 tonnes or 402,000 kilograms - making it one of the world's biggest civil cargo freighters.

5. Lockheed C-5M Super Galaxy

Finishing off this short list of the top five heaviest airliners in the world will be the giant military transport aircraft well-known as the Lockheed C-5 Galaxy. Given its capabilities to transport oversized loads, unlimited endurance with in-flight refueling, and other factors, this quad-engined aircraft is exceptionally useful for heavy intercontinental-range strategic airlift missions.

With upgrades featured over the years, Lockheed Martin modernized the legacy of the C-5 Galaxy and extended its service life to 2040 and beyond by introducing the C-5M Super Galaxy. Featuring new engines and better avionics, the latest version makes this list by offering an improved maximum take-off weight of approximately 381.1 tonnes or about 381,100 kilograms.

Air Expo
india

AIR EXPO INDIA

6-7-8 DECEMBER 2023

INDIRA GANDHI INTERNATIONAL AIRPORT - NEW DELHI

ASIA'S BIGGEST GENERAL & BUSINESS AVIATION EXHIBITION

www.airexpo.in

Understanding a Flight Management System

Jane Makena

A Flight Management System (FMS) is an on-board multi-purpose navigation, performance, and aircraft operations computer designed to provide virtual data and operational harmony between closed and open elements associated with a flight from pre-engine start and take-off, to landing and engine shut-down.

Most modern commercial and business aircraft are equipped with Electronic Flight Instrument System, which replaces conventional systems and flight deck displays.

An FMS comprises of four main components:

- The Flight Management Computer (FMC);
- The Automatic Flight Control or Automatic Flight Guidance System (AFCS or AFGS) ;
- The Aircraft Navigation System;
- An Electronic Flight Instrument System (EFIS) or equivalent electromechanical instrumentation.

The FMC is a computer system that uses a large data base to allow routes to be pre-programmed and fed into the system by means of a data loader. The system is constantly updated with aircraft position by reference to available navigation aids. The most appropriate aids are automatically selected during

information update.

The AFCS or AFGS receives sensor information from other aircraft systems. Dependent upon whether the aircraft is under Autopilot or manual control, AFCS mode selections made by the crew will either automatically move and control the aircraft flight control surfaces or display Flight Director commands for the pilot to follow to achieve the desired status.

The Navigation System is an integrated package which calculates continuously the aircraft position. It may include Inertial Reference System (IRS) and

Global Positioning System (GPS) (GPS) inputs in addition to receivers for ground based aids. In the case of an EFIS, the display of these navigational inputs is predicated on the Attitude and Heading Reference System(AHRS).

Display of aircraft status is provided on either EFIS or conventiomal instrumentation and is where the effect of FMS aircraft control is principally visible.

Navigation Database

All FMSs contain a navigation database. The navigation database contains the elements from which the flight plan is constructed. These are defined via the ARINC 424 standard. The navigation database (NDB) is normally updated every 28 days, in order to ensure that its contents are current. Each FMS contains only a subset of the ARINC / AIRAC data, relevant to the capabilities of the FMS.
The NDB contains all of the information required for building a flight plan, consisting of:

- Waypoints/Intersection
- Airways
- Radio navigation aids including distance measuring equipment (DME), VHF omnidirectional range (VOR), non-directional beacons (NDBs) and instrument landing systems (ILSs).
- Airports
- Runways
- Standard instrument departure (SID)
- Standard terminal arrival (STAR)
- Holding patterns (only as part of IAPs-although can be entered by command of ATC or at pilot's discretion)
- Instrument approach procedure (IAP) Waypoints can also be defined by the pilot(s) along the route or by reference to other waypoints with entry of a place in the form of a waypoint (e.g. a VOR, NDB, ILS, airport or waypoint/intersection).

Flight plan

The flight plan is generally determined on the ground, before departure either by the pilot for smaller aircraft or a professional dispatcher for airliners. It is entered into the FMS either by typing it in, selecting it from a saved library of common routes (Company Routes) or via an ACARS datalink with the airline dispatch center.

Special flight plans, often for tactical requirements including search patterns, rendezvous, in-flight refueling tanker orbits, calculated air release points (CARP) for accurate parachute jumps are just a few of the special flight plans some FMSs can calculate.

Position determination

Once in flight, a principal task of the FMS is obtaining a position fix, i.e., to determine the aircraft's position and the accuracy of that position. Simple FMS use a single

sensor, generally GPS in order to determine position. But modern FMS use as many sensors as they can, such as VORs, in order to determine and validate their exact position. Some FMS use a Kalman filter to integrate the positions from the various sensors into a single position. Common sensors include:

- Airline-quality GPS receivers act as the primary sensor as they have the highest accuracy and integrity.
- Radio aids designed for aircraft navigation act as the second highest quality sensors. These include;

Scanning DME (distance measuring equipment) that check the distances from five different DME stations simultaneously in order to determine one position every 10 seconds.[2]

- VORs (VHF omnidirectional radio range) that supply a bearing. With two VOR stations the aircraft position can be determined, but the accuracy is limited.
- Inertial reference systems (IRS) use ring laser gyros and accelerometers in order to calculate the aircraft position. They are highly accurate and independent of outside sources. Airliners use the weighted average of three independent IRS to determine the "triple mixed IRS" position.

The FMS constantly crosschecks the various sensors and determines a single aircraft position and accuracy.

The accuracy is described as the Actual Navigation Performance (ANP) a circle that the aircraft can be anywhere within measured as the diameter in nautical miles. Modern airspace has a set required navigation performance (RNP). The aircraft must have its ANP less than its RNP in order to operate in certain high-level airspace.

Source: SKYbrary

Runway Light Colors and Light Spacing Explained

Jane Makena

According to the FAA's most recent Airfield Standards publication, there are approximately 9 color combinations of lighting you'll find around the edges of runways.

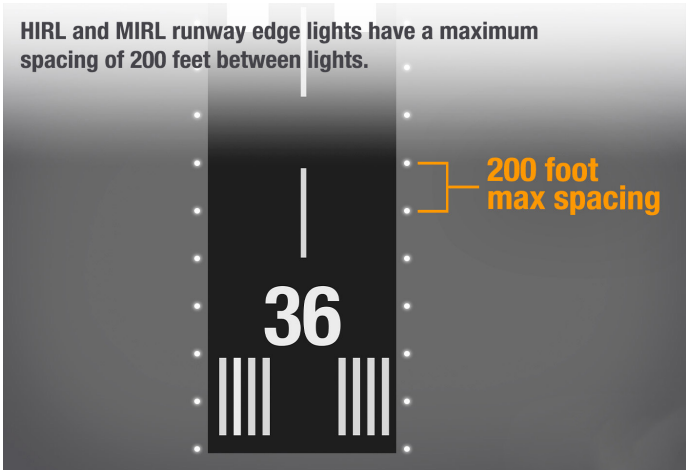
Runway Edge Light Spacing and Color

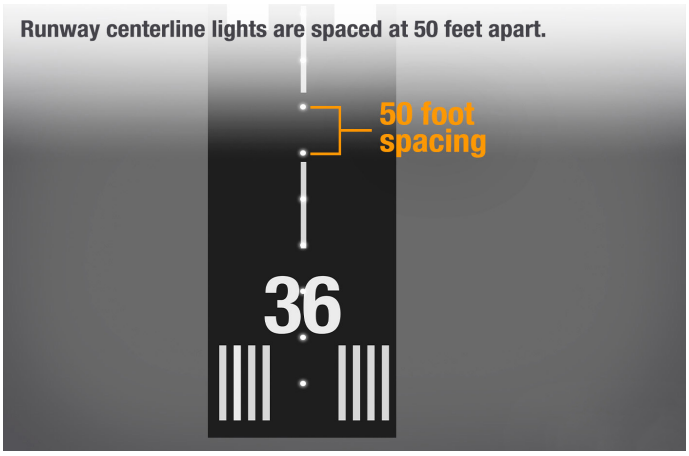
Both High Intensity Runway Lights (HIRLs) and Medium Intensity Runway Lights (MIRLs) require a maximum spacing of 200 feet between each runway edge light. For runways with intersecting taxiways or other runways, the maximum gap cannot exceed 400 feet. Additionally, the runway edge lights must be 2 to 10 feet offset from the full-strength paved runway edge.

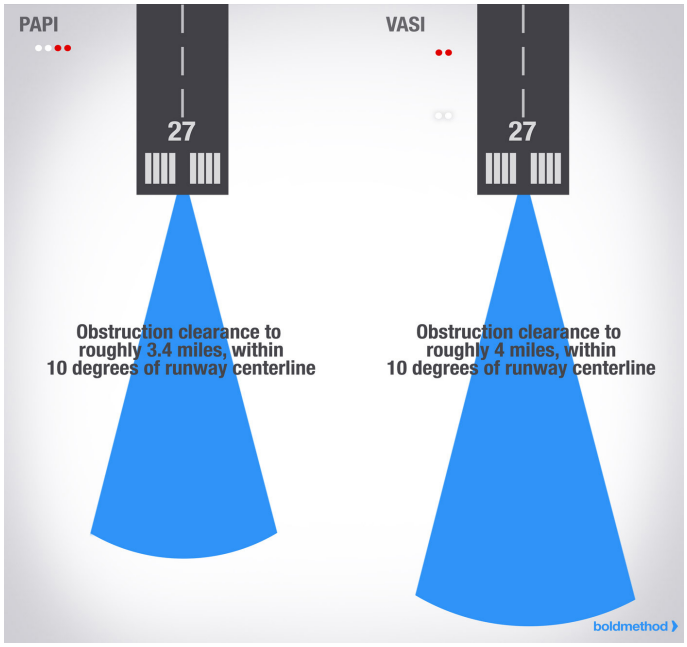
Runway edge lights are white, until you start getting close to the departure end of the runway. On instrument runways, edge lights are yellow on the last 2,000', or half the runway length, whichever is less. This forms a caution zone for landing on instrument runways at night. Keep in mind, however, that if you're not landing on an instrument runway, the edge lights are white all the way to the end of the runway.

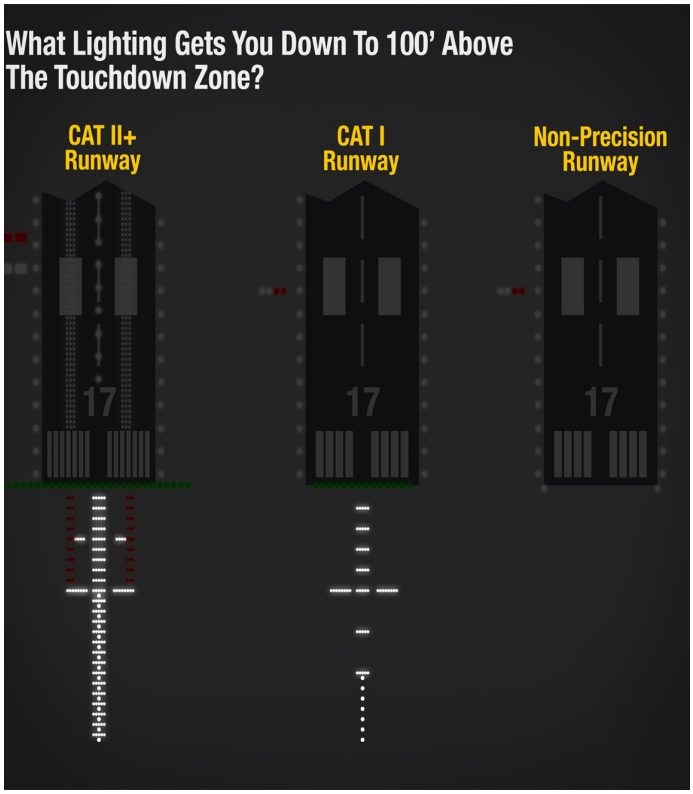
Runway Centerline Lighting and Color

Runway centerline lights and touchdown zone lights









are required for CAT II and CAT III runways, and for CAT I runways used for landing operations below 2,400 ft RVR. Runway centerline lights are also required on runways used for takeoff operations below 1,600 ft RVR unless specifically approved by the FAA in an airline operator's specification for that runway.

Runway centerline lights are spaced at 50 feet apart.
Just like runway centerline markings, knowing this distance can help you perfect landings at night and ensure you don't float too far. The line of runway centerline lights may be uniformly offset laterally to the same side of the physical runway centerline by a maximum of 2.5 feet.

When viewed from the landing threshold, runway centerline lights are white until the last 3,000 feet, where they begin to alternate red and white for 2,000 feet and eventually solid red for the final 1,000 feet.

Approach Lighting
Whether you're VFR or IFR, approach lights can help you identify and line up with the runway at night. Beyond that, approach lights help instrument pilots transition from IMC to VMC conditions. When you're flying an instrument approach, if you can see the white approach light system and nothing else, you can descend down to 100' above touchdown zone elevation, regardless of the type of approach you're flying (even if it's a non-precision approach). But at the 100' point, you need other visual references to descend lower. Here are some examples of approach light systems that get you down to 100' above the touchdown zone.

VASI and PAPI Lights
The Visual Approach Slope Indicator (VASI) is a system of lights arranged to provide visual descent guidance information during the approach to a runway for VFR and IFR pilots. These lights are visible from 3-5 miles during the day and up to 20 miles or more at night. The visual glide path of the VASI provides safe obstruction clearance within plus or minus 10 degrees of the extended runway centerline and to 4 NM from the runway threshold.

If you see two red lights over two white lights, you're on glide path. Although normal glide path angles are 3 degrees, VASI lights at some airports may be as high as 4.5 degrees to give proper obstacle clearance.
The Precision Approach Path Indicator (PAPI) is another very common visual glide path indicator light. PAPIs use lights similar to the VASI, but are installed in a single row of either two or four light units. These lights are visible from about 5 miles during the day and up to 20 miles at night.

The visual glide path of the PAPI typically provides safe obstruction clearance within plus or minus 10 degrees of the extended runway centerline and to 3.4 NM from the runway threshold.

Two white lights and two red lights mean you're on the established glide path on a PAPI.
Using Runway Lights to Make Your Flight Safer
Flying at night is challenging, but understanding the runway lighting system for your airport is a key to staying safe. Use the approach, visual glide path and runway lights at your airport, and you'll stay on-glide and clear of obstructions all the way to touchdown.

Source: Boldmethod

Radio tips from a tower controller

John Isiko
jisiko@gmail.com

The tower (TWR) controller (also referred to as "aerodrome controller") is responsible for the provision of air traffic services to aerodrome traffic. Their area of responsibility includes:

- The maneuvering area, i.e. runway(s) and taxiway(s). It should be noted that although the TWR controller communicates with aircraft on the apron(s) as well, this is not part of their area of responsibility.

The airspace in the vicinity of the aerodrome;
The TWR controllers are situated at the aerodrome control tower as they rely mostly on visual observation to do their job. By contrast, area and approach controllers work in operations (ops) rooms and their main tool is the situation display. The TWR controller may also work in an ops room in case a remote tower solution is used. However, this will visually resemble a real tower with large screens providing information from the remote cameras.

Major Traffic Served by the TWR controllers

There are three major types of traffic serverd by the TWR controller:

- Departures
- Arrivals
- Overflies, i.e. aircraft passsing through the CTR.

These are a relatively small part of the total traffic served by the TWR controller.

1) Know what you want to say before you key up the mic.

When we're busy, we don't have time for a lot of uhhhhh's and ummmm's. It takes up valuable time to

address higher priority tasks, and it increases frequency congestion, blocking out other pilots trying to reach us.

2) Let ground and tower know you are a student pilot.
Despite our sometimes-rough and tumble attitudes, we are truly there to help you out. If we know ahead of time that you are a student pilot, we know not to issue you any instructions that might make you feel uncomfortable, i.e. short approaches, etc. (NOTE: you should only need to tell each controller once that you are a student pilot.)

3) Read back instructions with your callsign in the same transmission.
If we don't get the readback AND callsign in the same transmission, we are forced to keep going back to you until we do. This takes up our time and yours.

4) Never be afraid to say "unable".
If you can't comply, speak up and we will work around it.

5) Unless otherwise informed, PLEASE acknowledge all instructions.
Certain things do not require a readback, but when issued, at least give us your callsign. NOTE: you are never wrong to read back the full instruction.

6) When tower tells you to "standby", don't read the instruction back.
We're asking you to maintain radio silence until we get an opportunity to get back to you. We may be waiting for a readback from another pilot, we may be talking to another controller, or we might be updating the weather. There are a lot of reasons we might ask you to stand by.

7) Departing VFR from a Class C or B airport?
Call Clearance Delivery with all of your information, and tell them if you want flight following all the way to your destination or just to get out of the airspace. Be patient when requesting departure from a Class C or B airport. When you call up, the controller needs to type all of your information into the NAS. This might take some time. Don't worry if you don't get a response right away.

Tower controllers normally use flight progress strips to map the traffic situation. These can be paper or electronic. The latter are used in modern systems and can be dynamically linked to the ATS system so that the controller can benefit from various safety and automation features. The use of strips by area and approach controllers, while possible, is gradually declining, as these are replaced by label-based solutions (i.e. the pertinent flight information is presented on a lablel that is attached to the track symbol of the aircraft).

The TWR controllers are equipped with additional (emergency) communication options that are not available to their colleagues in the operations rooms - Light and Pyrotechnic Signals. A Light Gun can be used to signal various instructions and a Flare Gun can fire red projectiles to inform the crews that it is not safe to land.

Source: Skybrary.aero

DUTIES OF A CABIN CREW

An airline's cabin crew represents its values and distinctive identity. The crew members are responsible for ensuring a safe, comfortable, and delightful flying experience for the passengers.

Wanyana Maureen
wanyanamm2015@gmail.com

From greeting the passengers to serving food and beverages and providing them with clear instructions and support during the flight, there are many duties the cabin crew performs.

Getting Ready for Boarding

The cabin crew has to check if the aircraft is ready for boarding, they can point out to the cleaning staff if they see some litter. They have to ensure that the technical and catering teams have addressed any issues that they were asked to deal with. Once the aircraft is ready they start boarding the passengers.

Meeting, greeting and seating the passengers

The first and foremost duty of the flight attendants is to welcome the travellers onboard and give them a courteous gesture that they are the valuable guests/customers of an airline. The flight attendants check the boarding passes and make sure that all the passengers are rightly seated and follow the safety/distance rules if and as defined by an airline.

They also help them with storing the luggage in the right compartments and resolve any complaints and issues pertaining to seating. Offering guidelines on emergency landing

and flight turbulence
The flight attendants provide instructions and demonstrate using the emergency tool kit in case of an emergency landing and other unexpected situations. They also guide the passengers on using the vomit bags and the importance of keeping the seat belts fastened during takeoff, landing, and turbulence.

Providing first aid and medical assistance
The flight attendants have first aid kits to provide the passengers with painkillers and other basic emergency medical support. Many airlines in the UK have flight physicians so the flight attendants call them for help in situations where professional medical assistance is inevitable like if there is a heart patient or a pregnant woman in her last trimester onboard.

Serving meals and drinks
The flight attendants serve the drinks, meals, and snacks to the passengers onboard. Many airlines provide a menu or in most cases, the flight attendants tell about the meat, bread, and other choices the passengers can have and cater to them according to their preferences and liking.
Removing the meal trays from every seat and ensuring that everybody has food is also the duty of the flight attendants. Most business class passengers have the privilege to get their favourite food made by the inflight chefs.

Selling food and duty-free goods
The flight attendants sell eatables like chocolates, crisps, biscuits and duty-free perfumes, cigarettes, and commercial goods to passengers on flights. The airlines give sales targets and commissions to the flight attendants for selling these products.
Keeping the passengers calm and seated
The cabin crew is trained to keep the passengers calm and seated during an emergency and unexpected situation.

Answering the passengers' questions
The passengers onboard an aircraft can have many questions regarding different topics. For instance, a passenger can ask how many hours are left for the journey or where is the airplane at the moment. The cabin crew has to provide satisfactory answers to the passengers without getting annoyed.

They need to be polite and helpful to the passengers at all times and not give any unpleasant gesture even if they are asked the same question many times.

Preparing for takeoff and landing
The flight attendants are instructed by the pilot to prepare the passengers for takeoff and landing. They check the seat belts and ensure that everyone

is seated when the aircraft takes off and lands. They have to ensure the safety of the passengers and the crew members so that nobody gets injured while standing or not properly seated during the takeoff and landing.

Producing flight reports
The cabin crew is required to produce a detailed report after every flight. They have to provide essential information regarding the different aspects of customer service, safety, catering, and other areas. Usually, the senior flight attendant is entrusted with the task of preparing and completing the fight report.

Taking criticism and suggestions positively
For many passengers, the flight may not be pleasant and they might take the liberty to voice their opinion about an airline's staff, especially the cabin crew online or in comment cards. The flight attendants and other crew members should take the suggestions and criticism positively and try their best to improve the highlighted discrepancies in customer service.
A positive attitude is important for an airline's cabin crew to make it excel.

Promoting and maintaining a unique image of an airline
The cabin crew has to promote and maintain a unique image of the airline they are a part of. They have to manifest the values and mission of the airline through their demeanor, communication, and the customer service they provide to the passengers.
The cabin crew needs to be well-trained, diplomatic, and customer-oriented in order to carry out the above-mentioned duties efficiently.

In addition to the physical appearance requirements that include height, weight, fitness and a nice/attractive personality, the qualities like empathy and understanding/respecting passengers from diverse cultural and ethnic backgrounds are the aspects that make a cabin crew better at their job.

How a flight simulator works

Jane Makena

A flight simulator is a device that artificially re-creates aircraft flight and the environment in which it flies, for pilot training, design, or other purposes. It includes replicating the equations that govern how aircraft fly, how they react to applications of flight controls, the effects of other aircraft systems, and how the aircraft reacts to external factors such as air density, turbulence, wind shear, cloud, precipitation, etc.

Flight simulation is used for a variety of reasons, including flight training (mainly of pilots), the design and development of the aircraft itself, and research into aircraft characteristics and control handling qualities.

The term "flight simulator" may carry slightly different meaning in general language and technical documents. In past regulations, it referred specifically to devices which can closely mimic the behavior of aircraft throughout various procedures and flight conditions. In more recent definitions, this has been named "full flight simulator".

The more generic term "flight simulation training device" (FSTD) is used to refer to different kinds of flight training devices, and that corresponds more closely to meaning of the phrase "flight simulator" in general English.[

Flight Simulator Applications

Pilot training;

Most flight simulators are used primarily for flight training. The simplest simulators are used to practice basic cockpit procedures, such as processing emergency checklists, and for cockpit familiarization. They are also used for instrument flight training, for which the outside view is less important.

Certain aircraft systems may or may not be simulated, and the aerodynamic model is usually extremely generic if present at all. Depending on the level of certification, instruments that would have moving indicators in a real aircraft may be implemented with a display. With more advanced displays, cockpit representation and motion systems, flight simulators can be used to credit different amount of flight hours towards a pilot license.

Other uses;

During the aircraft design process, flight simulators can be used instead of performing some flight tests. Such "engineering flight simulators" can provide a fast way to find errors, reducing both the risks and the cost of development. Additionally, this allows use of extra measurement equipment that might be too large or otherwise impractical to include during onboard a real aircraft. Throughout different phases of the design process, different engineering simulators with various level of complexity are used.

Flight simulators may include training tasks for crew other than pilots. Examples include gunners on a military aircraft or hoist operators. Separate simulators have also been used for tasks related to flight, like evacuating the aircraft in case of a crash in water. With high complexity of many systems composing contemporary aircraft, aircraft maintenance simulators are increasingly popular

Technology used in flight Simulation

Flight simulators are an example of a human-in-the-loop system, in which interaction with a human user is constantly happening. From perspective of the device, the inputs are primary flight controls, instrument panel buttons and switches and the instructor's station, if present based on these, the internal state is updated, and equations of motion solved for the new time step. The new state of the simulated aircraft is shown to the user through visual, auditory, motion and touch channels.

To simulate cooperative tasks, the simulator can be suited for multiple users, as is the case with multi-crew cooperation simulators. Alternatively, more simulators can be connected, what is known as "parallel simulation" or "distributed simulation". As military aircraft often need to cooperate with other craft or military personnel, wargames are a common use for distributed simulation. Because of that, numerous standards for distributed simulation including aircraft have been developed with military organisations. Some examples include SIMNET, DIS and HLA.

Modern high-end flight simulators

Vertical Motion Simulator (VMS) at NASA/Ames

The largest flight simulator in the world is the Vertical Motion Simulator (VMS) at NASA Ames Research Center, south of San Francisco. This has a very large-throw motion system with 60 feet (+/- 30 ft) of vertical movement (heave). The heave system supports a horizontal beam on which are mounted 40 ft rails, allowing lateral movement of a simulator cab of +/- 20 feet. A conventional 6-degree of freedom hexapod platform is mounted on the 40 ft beam, and an interchangeable cabin is mounted on the platform.

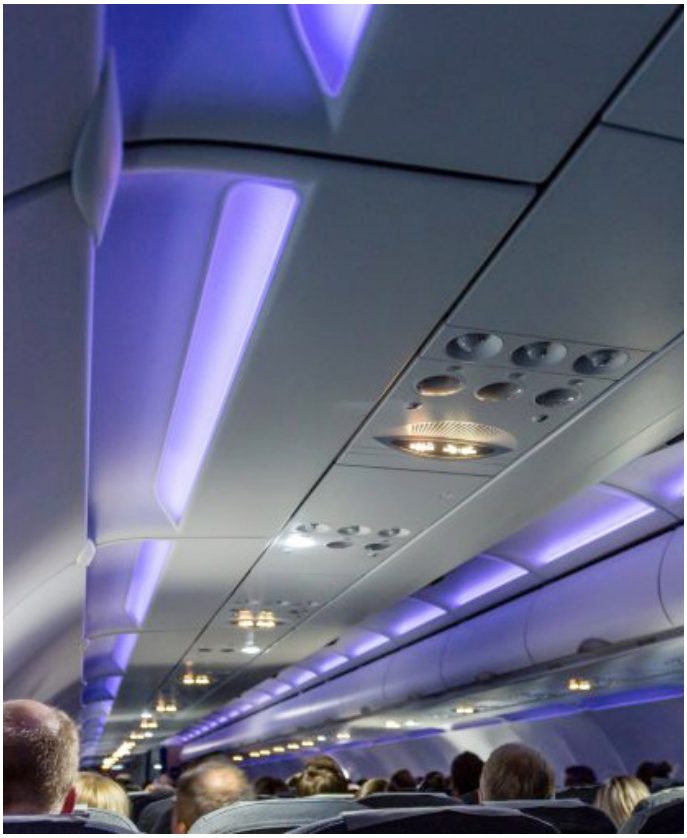
This design permits quick switching of different aircraft cabins. Simulations have ranged from blimps, commercial and military aircraft to the Space Shuttle. In the case of the Space Shuttle, the large Vertical Motion Simulator was used to investigate a longitudinal pilot-induced oscillation (PIO) that occurred on an early Shuttle flight just before landing. After identification of the problem on the VMS, it was used to try different longitudinal control algorithms and recommend the best for use in the Shuttle program.

Source: multiple sources

REASONS FOR DIMMING CABIN LIGHTS DURING TAKEOFF AND LANDING PROCEDURES

By John Isiko
jisiko@gmail.com

Dimming cabin lights during takeoff allows passengers to adjust their eyes to low-light conditions. The darker the cabin, the more visible emergency lighting and illuminated pathways become. Raising window shades during the day floods the cabin with natural light.



For those of us who have flown at night, we know that the dimming of cabin lights during taxi signifies that our departure is imminent. The process is repeated at the flight's conclusion, with the second dimming of cabin lights indicating that the touchdown is not far away.

Safety reasons

In all aspects of commercial aviation, the safety of passengers and staff is paramount. As such, it is perhaps not surprising that safety is the primary reason cabin lights are dimmed shortly before takeoff and landing procedures.

The lighting is dimmed for the same reason crew members ask passengers to raise their window shades - for safety in case of an emergency. In the event of such a circumstance, ideal visibility can make a crucial difference to one's safety.

Keeping window shades open can also help keep passengers orientated in critical situations as it allows them to be more aware of their surroundings.

It can take the human eye between ten and 30 minutes to fully adjust to a newly dark setting. However, dimming cabin lights gives passengers and crew extra time to adapt to the lower-light conditions.

This can be critical if an

aircraft must be evacuated at night. Indeed, the period of time that it can take human eyes to calibrate to low-light conditions could theoretically be the difference in one's chances to escape in an emergency.
Another reason for dimming cabin lights is that the darker the cabin is, the more visible the emergency lighting and illuminated pathways will become.

As such, everyone onboard of the aircraft will be better equipped to promptly and safely evacuate the aircraft in an emergency. As Colin C. Law shared in 2019, cabin lights are adjusted to match outside light conditions for safety reasons. For instance, in the event of an evacuation during takeoff, cabin lights should not be on the brightest mode; otherwise, it would jeopardize the evacuation process.

Lifting the window shades also raises passengers' awareness of their surroundings. Meanwhile, flight attendants benefit from a view outside of the aircraft, enabling them to detect any equipment abnormalities or hazards in the aircraft's vicinity.
A view out of the window can also be beneficial for more nervous passengers who are uncertain about the process of flying. Indeed, they may feel reassured by seeing outside the aircraft and gaining an impression of their orientation to the ground.

Window shades

Dimming the lights is also allied with raising the window shades on an aircraft. During the day, the latter measure ensures the interior is flooded with natural light. Subsequently, passengers and crew have increased visibility in the cabin.

This gives everyone onboard better chances of a prompt and safe evacuation should an emergency arise.
Of course, in the overwhelming majority of cases, the situations for which these precautions are designed do not arise. That said, as with most processes that occur on airliners, there is a rational reason for taking them anyhow. At the end of the day, passenger and crew safety must always come first.

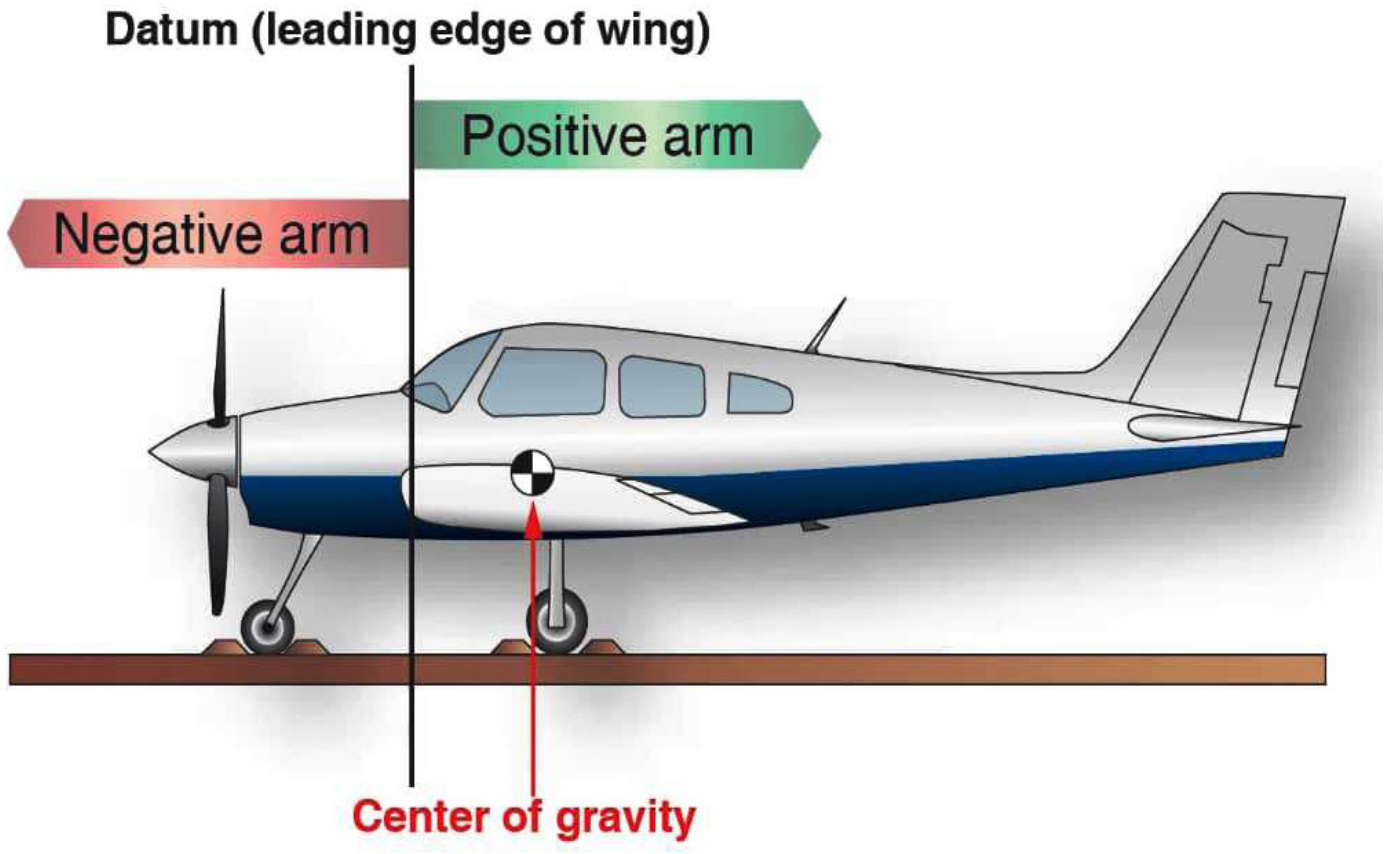
Saves energy

Another reason airlines and crews dim the cabin lights during takeoffs and landings is to lower the power consumption of aircraft, optimizing engine performance during these critical phases of the flight.

Credit: Daniel Martinez Garbuno

THE TERMINOLOGY 'HEAVY' USED IN AN AIRCRAFT'S CALL SIGN

Wanyana Maureen
wanyanamm2015@gmail.com



while the term "heavy" refers to the maximum takeoff weight of the plane, it's also used as a heads-up for other aircraft in the vicinity to give the plane some distance.

If you've ever taken the time to listen to airline radio chatter, particularly to air traffic control, you might have heard certain radio transmissions using the term "heavy." This terminology has a fairly literal meaning, as it pertains directly to the aircraft's maximum takeoff weight. However, its usage also indicates something else, namely the amount of turbulence a plane might leave in its wake.

Aircraft are categorized by their weight
In the United States of America, there are four classes of aircraft in this regard: small, large, heavy, and super. Only the terms heavy and super are commonly

used. In a 2015 document, the Federal Aviation Administration defines small aircraft as those with a maximum takeoff weight of 41,000 pounds (18,600 kg) or less.

Meanwhile, large aircraft are defined as those with a maximum takeoff weight of more than 41,000 pounds, with the category ranging up to 300,000 pounds (136,000 kg). Beyond this, the FAA defines heavy aircraft as those with a maximum takeoff weight of 300,000 pounds or more. Only the Airbus A380 (and, previously, the Antonov An-225) features the unique designation of 'super' aircraft.

According to Skybrary, the International Civil Aviation Organization (ICAO) has a slightly different way of categorizing aircraft. Light aircraft are those with a maximum takeoff weight of 15,500 pounds (7,000 kg) or less, while Medium aircraft are those weighing more than 15,500 pounds but less than 300,000 pounds. Similarly to the FAA's designations, Heavy aircraft are those weighing 300,000 pounds or more, and, once again, the Airbus A380 is currently the only aircraft type to be given the Super designator under the ICAO's present scheme.

"Heavy" also refers to turbulence

On this level, these designators are a way of classifying aircraft by their maximum takeoff weight. However, there is a practical reason for doing this as well, as, generally, the bigger the plane, the bigger the wake turbulence. Wake turbulence is rotating air produced by an aircraft's wing as it takes off or lands, and the more intense the turbulence, the greater the danger for the following aircraft.

Usually, when identifying the plane on the radio, pilots will add the heavy descriptor to their aircraft's call sign in conversations with air traffic controllers. This indicates they should put some space between their plane and the next one.

This means that if you are flying in a small commuter turboprop aircraft, you may need several miles of separation between your flight and the massive A380 preceding you. Get too close, and the wake turbulence can literally flip a light plane. On the other hand, two small commuter aircraft don't need much separation at all.

Distances vary depending on aircraft size

The aforementioned 2015 FAA document also specifies how much distance should be put between planes. If you are a small plane following a 'super' aircraft, the minimum spacing is eight nautical miles. Even a heavy aircraft, such as a Boeing 747-400, following a super aircraft gets a minimum spacing of six nautical miles.

The minimum distance reduces as the maximum takeoff weights get smaller. A large aircraft following a heavy aircraft only needs five nautical miles. A heavy aircraft following another heavy aircraft only needs a space of four nautical miles. A small turboprop following a Boeing 747 requires a minimum distance of six nautical miles.

Meanwhile, it doesn't matter what kind of plane a super aircraft follows, and they can comfortably tag along behind with a spacing of just two and a half nautical miles. There are certain exceptions, however, with Skybrary noting that "some states apply a higher category to a Boeing 757if it is the preceding aircraft."

All in all, while the term "heavy" refers to the maximum takeoff weight of the plane, it's also used as a heads-up for other aircraft in the vicinity to give the plane some distance. Like so many things in aviation, it's all about safety.

CREDIT: JACKE HARDIMAN

Entebbe Airways

FROM THE PEARL

AVIATION **LOGISTICS** **TOUR**

"With proven experience and trusted partners"

UGANDA · IASO · Petroleum Authority of Uganda · The Aviator Africa · IATA · flynas طيران ناس · Uganda Air Cargo Corporation · GLOBAL

Headquarters:
Plot 24B, Lugard Avenue, Entebbe, Uganda
Tel:+256 763 001 284

Entebbe International Airport
Office No. PTB. 115, 2nd Fllor,
Passenger Terminal Building
P. O. Box 178, Entebbe, Uganda
Tel: +256 393 515 148
Entebbe International Airport Direct line +256 312-352 000 - Ext: 3072

Email:
info@entebbeairways.com
admin@entebbeairways.com

Social Media:
www.entebbeairways.com
entebbeairways
entebbeairways
entebbeairways