SALVATORE SCIACCHITANO

President of the ICAO Council

INDEX

INDEX

EDITORIAL

Dr Kostas Iatrou
Director General
Hermes - Air Transport Organisation

Dear Hermes member,

Air Transport is currently facing the biggest challenge ever. Hermes - Air Transport Organisation will host its 2020 Hermes AGM & Leaders Forum online on Thursday 30 April. The theme this year focuses on the recent developments and is entitled: Air Transport Re-imagined and Re-invented.

Hermes participated in the Digitally Connected Airports conference co-organized by EUROCONTROL and ACI Europe. The conference topic is closely related to the theme of this year's Hermes recommendations.

We have the pleasure and honour to host the interview of Mr Salvatore Sciacchitano, President of the ICAO Council.

Enjoy reading

Kostas Iatrou

9/01/2020

INTERNATIONAL AIRLINES GROUP (IAG) ANNOUNCES THAT WILLIE WALSH HAS DECIDED TO RETIRE AS CHIEF EXECUTIVE

International Airlines Group (IAG) announces that Willie Walsh has decided to retire as chief executive. Luis Gallego, currently Iberia chief executive, will succeed Willie.

Antonio Vazquez, IAG chairman, said: "Willie has led the merger and successful integration of British Airways and Iberia to form IAG. Under Willie's leadership IAG has become one of the leading global airline groups. "Willie has been the main driver of this unique idea that is IAG. I hugely admire his commitment, strong leadership and clear vision, always ready to take on whatever challenges lay ahead of him. I am deeply respectful of what he has achieved as CEO of this Group, of his sense of fairness, his transparency and his capacity to integrate people regardless of nationalities or backgrounds.

Willie Walsh said: "It has been a privilege to have been instrumental in the creation and development of IAG. I have had the pleasure of working with many exceptional people over the past 15 years at British Airways and at IAG. Luis has been a core member of the team and has shown true leadership over the years and I have no doubt he will be a great CEO of IAG".

13/01/2020

STUDY ON THE PROTECTION OF EU AIR PASSENGER RIGHTS

A fact-finding study published, along the Eurobarometer survey on EU passenger rights, sheds light on the main developments in air passenger rights since the Commission tabled a proposal to amend the legislation in 2013. The findings of the study will therefore also support to relaunch the on-going discussions.

The study takes on a fresh look at the topic, reflecting the evolution of the air travel market in recent years. To be effective, EU rules on passenger rights need to be easily understandable and provide legal certainty to passengers, the industry and the competent authorities. The study focused on the disruptions faced by passengers, especially from the perspective of the passengers, airlines and airports. The study also analysed monitoring and enforcement, general consumer protection, international developments as well as cases of airline insolvencies.

The study shows that the need for reform has become even more urgent since 2013: the level of flights disrupted, in terms of cancellations and delays over two hours, has increased significantly, and for passengers it is still rather difficult to enforce their rights, due to the complexity of the regulatory setting and the lack of information. For airlines the burden has increased, driven by increased levels of disruptions and rising claim rates.

In terms of priorities, passengers ranked care and assistance to be provided in the event of travel disruption as the most important. Re-routing, making sure passengers arrive at their destination as soon as possible, was ranked second, and the reimbursement and/or compensation to be paid (where relevant) third.

13/01/2020

DAVID L. CALHOUN BEGINS ROLE AS BOEING PRESIDENT AND CEO

David L. Calhoun assumed the role of president and chief executive officer of The Boeing Company.

«With deep industry experience and a proven track record of performance, Dave is the right leader to navigate Boeing through this challenging time in our 104-year legacy,» said Lawrence W. Kellner, chairman of the Boeing Board of Directors. «We're confident Dave will take Boeing forward with intense focus on our values, including safety, quality and integrity.»

15/01/2020

WELCOME TO THE NEW ALTA ERA

16/01/2020

AIRBUS DEMONSTRATES FIRST FULLY AUTOMATIC VISION-BASED TAKE-OFF

Airbus has successfully performed the first fully automatic vision-based take-off using an Airbus Family test aircraft at Toulouse-Blagnac airport. The test crew comprising of two pilots, two flight test engineers and a test flight engineer took off initially at around 10h15 on 18 December and conducted a total of 8 take-offs over a period of four and a half hours.

Source: Airbus

25/01/2020

NEW BOEING 777X COMPLETES SUCCESSFUL FIRST FLIGHT

The new Boeing (NYSE: BA) 777X jetliner took to the skies today, entering the next phase of its rigorous test program. Based on the popular 777 and with proven technologies from the 787 Dreamliner, the 777X took off in front of thousands at Paine Field in Everett, Washington, at 10:09 a.m. local time for a three hour, 51 minute flight over Washington state before landing at Seattle's Boeing Field.

Source: Boeing

27/01/2020

AIRPORT DATA SHARING AND COLLABORATION KEY TO IMPROVING PASSENGER SATISFACTION

Airports Council International (ACI) World has today published new guidance for airports collecting data to improve passenger satisfaction and operational efficiency. The Passenger Facilitation Performance Metrics Handbook provides key tools for airports as they manage the flow of passengers and baggage in a safe and secure way, while meeting and exceeding passenger expectations. The handbook will help airports identify and employ different types of key performance metrics in passenger facilitation and will describe how they can benefit from emerging trends in the use of airport data to improve communication between airports, airlines, and government agencies.

28/01/2020

ICAO SECRETARY GENERAL CONTRIBUTES TO WEF2020 DISCUSSIONS ON 21ST CENTURY MOBILITY, UNMANNED AIRCRAFT APPLICATIONS, AND CLEANER SKIES

Addressing the World Economic Forum (WEF) in Davos this week, ICAO Secretary General Dr. Fang Liu contributed to a range of WEF sessions on topics relating to drones and urban air mobility, medical applications for unmanned aircraft including emergency supply deliveries and epidemic control, and current and future aviation emissions reduction efforts. A main theme highlighted throughout her contributions was the critical importance of numerous aviation benefits to governments' successful achievement in ten years' time of the Agenda 2030 UN Sustainable Development Goals.

Source: ICAO

30/01/2020

IATA: STRENGTHENING COOPERATION ON STANDARDS FOR INTERMODAL TRAVEL

The International Air Transport Association (IATA) announced it signed a Memorandum of Understanding (MoU) with the International Union of Railways (UIC), to strengthen their cooperation in standard setting and interoperability initiatives, with a focus on data exchange standards supporting intermodal travel.

Under the MoU, the collaboration opportunities will be explored from the dual perspectives of existing distribution processes and standards as well as transformative retail-based "offer-order" processes and standards, typified by the New Distribution Capability and ONE Order initiatives. These activities offer significant opportunity for value-creation within intermodal partnerships.

Specific areas for dialogue and cooperation around standards and interoperability include:

- Journey planning and shopping
- Reservations and servicing
- Ticketing, including irregular operations processes
- Industry coding, including location codes
- Check-in and validation control
- Accounting and settlement
- Legal aspects

Source: IATA

30/01/2020

EASYJET'S PARTNER WRIGHT ELECTRIC BEGINS ENGINE DEVELOPMENT PROGRAM FOR 186 SEAT ELECTRIC AIRCRAFT

easyJet today welcomed the announcement by its partner Wright Electric on its engine development program for its flagship 186 seat electric aircraft, named Wright 1.

Wright is engineering electrical systems at the megawatt scale which will be necessary for commercial flight for its 186 seat electric aircraft. It is building a 1.5 MW electric motor and inverter at 3 kilovolts. These components will form the powerplant of Wright's revolutionary Wright 1 aircraft and move towards aiming to pave the way for a future of zero emissions flight in Europe and worldwide.

Wright Electric is in discussions with BAE Systems relating to flight controls and energy management systems. Wright intends to conduct ground tests of its motor in 2021 and flight tests in 2023. At an event the company held in New York City on January 30, Wright demonstrated a preview of its motor and fan. Wright also announced that it is moving its headquarters to Albany, NY to take advantage of the world-class engineering talent there.

Source: easyJet

31/01/2020

LATAM TO LEAVE ONEWORLD EFFECTIVE 1 MAY 2020

LATAM Airlines Group will end its membership in the oneworld® alliance effective 1 May 2020, following the group's decision to leave the alliance.

oneworld benefits for LATAM customers will be offered on oneworld flights up to and including 30 April 2020. LATAM Pass members will not receive oneworld frequent flyer benefits offered by Royal Air Maroc, which joins oneworld effective 1 April. LATAM will not offer oneworld frequent flyer member benefits to Royal Air Maroc Safar Flyer members.

3/02/2020

ACI WORLD APPOINTS LUIS FELIPE DE OLIVEIRA AS NEW DIRECTOR GENERAL

The Airports Council International (ACI) World Governing Board has today announced that Luis Felipe de Oliveira will be the new Director General of ACI World.

Mr. de Oliveira will succeed Angela Gittens who has successfully led the global voice of the world's airports for twelve years, working collaboratively with the leadership of ACI's five Regional Offices: Africa, Asia-Pacific, Europe, Latin-America/Caribbean and North America. Ms. Gittens earlier announced her intention to retire at the end of June 2020. Mr. de Oliveira is well known throughout the aviation industry. He is currently the Executive Director and CEO of the Latin American and Caribbean Air Transport Association (ALTA). Mr. de Oliveira will officially take up the role of Director General in June, with a 30-day formal transition.

"Felipe is an aviation leader with decades of experience in business development and strategic planning, and has led international teams, in the private and non-profit sectors," ACI World Governing Board Chair Martin Eurnekian said. "Throughout his career in the aviation industry, he has established a strong record of building relationships at a global level and in the Americas, Middle East and Africa regions to advocate on behalf of the organizations he has represented".

Source: Airbus

3/02/2020

VIRGIN ATLANTIC, DELTA, AIR FRANCE AND KLM LAUNCH WORLD'S LEADING PARTNERSHIP

Virgin Atlantic, Delta, Air France and KLM have launched their new expanded joint venture offering a greater choice of routes and loyalty options when travelling between Europe, the U.K. and North America. The new partnership provides customers with more convenient flight schedules and a shared goal of ensuring a smooth and consistent travel experience, whichever airline people fly. The partnership also provides the flexibility to book flights on any of the four carriers through their respective mobile apps, websites, or via travel agents. Customers will enjoy award-winning service, top-tier premium cabin products and complimentary food, drink and seat-back in-flight entertainment in all cabins on all trans-Atlantic flights.

5/02/2020

EUROPEAN COMMISSION - IMPROVED COMMUNICATION TECHNOLOGY FOR AIRCRAFT

Today, new legal requirements enter into force for aircraft operators flying at high altitudes in the European airspace: the capacity to operate data link services. The deployment of this interoperable technology in Europe will improve the efficiency of communications between pilots and controllers. Ultimately, air traffic control safety and capacity will increase. Data link services are communications between aircraft and ground conveyed through data links, complementing the traditional voice communications of air traffic control.

To provide concrete capacity increase, at least 75% of flights should be capable of operating data link services at high altitudes. Operational use of data link has increased steadily over the last years thanks to all stakeholders' efforts to accelerate deployment and with substantial EU financial support.

11/02/2020

AIRBUS REVEALS ITS BLENDED WING AIRCRAFT DEMONSTRATOR

Airbus has revealed MAVERIC (Model Aircraft for Validation and Experimentation of Robust Innovative Controls) its «blended wing body» scale model technological demonstrator. At 2 metres long and 3.2 metres wide, with a surface area of about 2.25mÇ, MAVERIC features a disruptive aircraft design, that has the potential to reduce fuel consumption by up-to 20 percent compared to current single-aisle aircraft. The "blended wing body" configuration also opens up new possibilities for propulsion systems type and integration, as well as a versatile cabin for a totally new on-board passenger experience.

Source: Airbus

11/02/2020

ACI LAUNCHES NEW GUIDANCE FOR ADDRESSING CYBERSECURITY THREATS

Airports Council International (ACI) World has today launched a new resource to help airports establish a programme of cyber resilience and maintain robust and efficient cybersecurity defences.

The Cybersecurity Implementation Handbook provides airports with a comprehensive overview on how to implement an all-inclusive cybersecurity programme, complete with cybersecurity best practices and case examples, drawing on the experience of experts in both cybersecurity and airport systems.

It explores the current global threat in this area, and offers a range of different measures and solutions that can be tailored to the unique local conditions and challenges faced by airports around the world. It also helps airports to understand their own cybersecurity risk exposure.

This includes cyber risk management and a seven-factor cybersecurity scorecard to help airports evaluate their defensive strategies encompassing key issues of confidentiality, integrity, and availability.

14/02/2020

DELTA COMMITS $1 BILLION TO BECOME FIRST CARBON NEUTRAL AIRLINE GLOBALLY

Starting March 1, 2020, Delta Air Lines is committing $1 billion over the next 10 years on its journey to mitigate all emissions from its global business going forward. The airline will invest in driving innovation, advancing clean air travel technologies, accelerating the reduction of carbon emissions and waste, and establishing new projects to mitigate the balance of emissions.

Delta's approach to tackling carbon reduction and sustainability reflects the focus and rigor it has become known for, and that it used to build a financially secure airline. This announcement comes as Delta pays $1.6 billion in profit sharing to employees this Valentine's Day, and reflects its longstanding approach to placing a high value on supporting all stakeholders and communities worldwide.

25/02/2020

ICAO CALLS FOR INNOVATIVE SOLUTIONS FOR DRONE AIRSPACE MANAGEMENT

Drone deliveries, drone inspections and even flying taxis are now near term realities for societies all over the world. As the development of unmanned aircraft systems (UAS) and UAS traffic management (UTM) continues to advance, governments and operators need to focus on how the next evolution of aircraft, both manned and unmanned, can safely integrate into finite airspace.

26/02/2020

AIR NEW ZEALAND TO PUT ECONOMY TRAVELLERS TO SLEEP

The Economy Skynest is the result of three years of Air New Zealand research and development, with the input of more than 200 customers at its Hangar 22 innovation centre in Auckland. The airline has today filed patent and trademark applications for the Economy Skynest which provides six full length lie-flat sleep pods.

Source: Air New Zealand

27/02/2020

ATM AND AIRPORTS JOIN FORCES TO REDUCE AVIATION NOISE AND EMISSIONS

The Civil Air Navigation Services Organisation (CANSO) and Airports Council International (ACI) have partnered to launch new guidance material for reducing aviation noise and emissions.

CANSO and ACI, in collaboration with aviation industry partners, have worked to identify opportunities to enhance operational efficiency and capacity while maintaining the highest level of safety. New guidance material developed by CANSO's Performance Based Navigation Workgroup and international contributors from ACI brings together extensive expertise and experience from across the industry, and explores the role of operational improvements like performance-based navigation in reducing aircraft noise and emissions.

5/03/2020

EUROPEAN PARTNERS DELIVER FIRST 'FLY AI' REPORT ON THE CURRENT USE AND FUTURE POTENTIAL OF ARTIFICIAL INTELLIGENCE IN AVIATION

This first edition of the 'FLY AI' report provides a timely review of the current use of artificial intelligence (AI) in aviation, and assesses its future potential to transform the sector. Produced by the European Aviation High Level Group on AI, a group set up after EUROCONTROL's inaugural conference on AI in May 2019, the report pools the expertise of EUROCONTROL and a wide range of key representatives from all aviation sectors (airlines, airports, Air Navigation Service Providers, manufacturers, EU bodies, military and staff associations). It aims to advance understanding among aviation and air traffic management (ATM) actors of AI and its potential, to "demystify AI", and to help accelerate its uptake in aviation. It concludes that there are a number of practical actions that could be taken to accelerate the development of AI in European aviation and ATM, which form the basis of a 'FLY AI Action Plan'.

EUROPEAN AVIATION ARTIFICIAL INTELLIGENCE HIGH LEVEL GROUP

The FLY AI Report

Demystifying and Accelerating AI in Aviation/ATM

5th March 2020
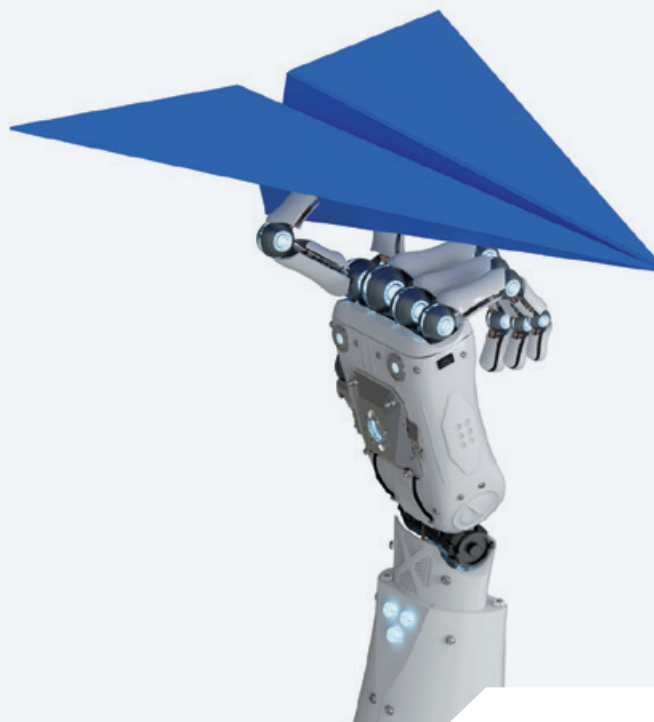
WITH INPUTS FROM EDA MILITARY EXPERTS AND NATO ATTENDING IN AN OBSERVING CAPACITY

6/03/2020

NEARLY ONE YEAR AFTER LAUNCHING ITS BOEING 737 MAX INVESTIGATION, HOUSE TRANSPORTATION COMMITTEE ISSUES PRELIMINARY INVESTIGATIVE FINDINGS

Today, nearly one year after launching its investigation into the design, development, and certification of the Boeing 737 MAX, the House Committee on Transportation and Infrastructure Majority Staff released its preliminary investigative findings. The Boeing 737 MAX, which was certified by the FAA and entered revenue service in 2017, was involved in two fatal crashes within five months of each other that killed a total of 346 people, including 8 Americans. The aircraft remains grounded worldwide.

The Committee's preliminary findings, titled "The Boeing 737 MAX Aircraft: Costs, Consequences, and Lessons from its Design, Development, and Certification," outlines technical design failures on the aircraft and Boeing's lack of transparency with aviation regulators and its customers as well as Boeing's efforts to obfuscate information about the operation of the aircraft.

The Committee's investigation, as detailed in the preliminary findings, focuses on five main areas:

- Production pressures on Boeing employees that jeopardized aviation safety;
- Boeing's faulty assumptions about critical technologies, most notably regarding the Maneuvering Characteristics Augmentation System, or MCAS;
- Boeing's concealment of crucial information from the FAA, its customers, and pilots;
- Inherent conflicts of interest among authorized representatives, or ARs, who are Boeing employees authorized to perform certification work on behalf of the FAA; and
- Boeing's influence over the FAA's oversight that resulted in FAA management rejecting safety concerns raised by the agency's own technical experts at the behest of Boeing.

9/03/2020

ICAO COUNCIL ADOPTS COVID-19 DECLARATION

Affirming the urgent need to reduce the risks of the spread of COVID-19 by air transport, and to protect the health of air travellers and aviation personnel, the ICAO Council adopted a special Declaration on COVID-19 today during the fourth meeting of its 219th Session.

The Declaration:

Recalled Articles 14 and 44 of the Convention on International Civil Aviation; Affirmed the urgent need to reduce the public health risk of the spread of COVID-19 by air transport and protect the health of air travellers and aviation personnel;

Stressed the importance of:

a) ensuring that response actions and measures are based on science and facts;

b) cross-sector collaboration and the principles of multilateralism, strong international cooperation and coordination among all entities involved in the joint action against this public health emergency of international concern (PHEIC); and

c) providing reliable and timely information to aviation authorities, airlines and other aircraft operators, airports and the public to help control the further spread of the virus.

Expressed strong support for the calls by the World Health Organization (WHO) for States to perform their own risk assessments and adapt their response measures accordingly, taking into account the International Health Regulations (IHR 2005);

Expressed concern at the economic impact of the COVID-19 outbreak on air transport and civil aviation;

Expressed appreciation for the cooperation of airlines, airports and other industry participants in working with governments and international organizations to help implement these response measures;

Urged ICAO Member States and stakeholders to:

d) apply existing regulations and guidance, particularly the Standards and Recommended Practices (SARPs) of Annex 9 (Facilitation) and other relevant international standards contained in the other Annexes to the

9/03/2020

ICAO COUNCIL ADOPTS COVID-19 DECLARATION ▶*cont'd*

Convention on International Civil Aviation, when addressing outbreaks of communicable diseases that pose a public health emergency of international concern;

e) apply existing recommendations and guidance provided by the WHO, in accordance with each country's risk assessment and unique circumstances;

f) foster and implement a culture of collaboration and information sharing among public health and civil aviation authorities through the establishment of National Facilitation Committees comprising all relevant entities, in line with ICAO provisions;

g) proactively join, contribute to and assist the Collaborative Arrangement for the Prevention and Management of Public Health Events in Civil Aviation (CAPSCA);

h) take the necessary actions to maintain the sustainability of air transport and the highest level of safety;

Reaffirmed that ICAO would continue to support the aviation sector by working with Member States, other relevant agencies of the United Nations system, and industry partners such as the International Air Transport Association (IATA) and Airports Council International (ACI); and

Further reaffirmed that the Council will continue to closely monitor the situation, supports Member States in their response measures as appropriate, and stands ready to take further action as circumstances develop. ICAO Council President Mr. Salvatore Sciacchitano together with the Secretary General, Dr. Fang Liu, highlighted the strong commitment of ICAO to supporting its Member States in implementing response measures and expressed their deep appreciation for WHO's cooperation with ICAO on COVID-19 throughout this Public Health Event of International Concern (PHEIC).

Source: ICAO

10/03/2020

ICAO SAFETY AUDIT PROGRAMME CELEBRATES 20-YEAR ANNIVERSARY

During a special ceremony conducted at the fourth meeting of the ICAO Council's 219th Session, ICAO Council President Salvatore Sciacchitano accepted a framed gift from the UN agency's Secretary General, Dr. Fang Liu, commemorating the 20th Anniversary last year of ICAO's Universal Safety Oversight Audit Programme (USOAP).
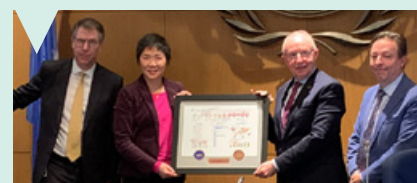
Source: ICAO

11/03/2020

COVID19 CONFIRMED AS PANDEMIC BY WORLD HEALTH ORGANIZATION

"*We have therefore made the assessment that #COVID19 can be characterized as a pandemic*" WHO chief Dr Tedros Adhanom Ghebreyesus said.

Dr Tedros Adhanom Ghebreyesus
Director-General
World Health Organization

27/03/2020

PRESIDENT TRUMP SIGN THE CORONAVIRUS AID, RELIEF, AND ECONOMIC SECURITY (CARES) ACT

President Trump signed the Coronavirus Aid, Relief, and Economic Security (CARES) Act, which includes provisions intended to assist the U.S. airline industry to continue making payroll and protect the jobs of pilots, flight attendants, gate agents, mechanics and others.

13/03/2020

ICAO COUNCIL ADOPTS IMPORTANT ENVIRONMENTAL STANDARD

The ICAO Council adopted a new standard which will reduce civil aviation impacts on local air quality and human health.

Applicable to engine designs of rated thrust greater than 26.7 kN, the new non-volatile Particulate Matter (nvPM) mass and number engine emission standard will govern both new and in-production engines from 2023 onwards.

ICAO Council adopts CORSIA emissions units
The ICAO Council approved the eligible emissions units for the Carbon Offsetting and Reduction Scheme for International Aviation (CORSIA) today, reaching another important milestone toward CORSIA global implementation supporting worldwide efforts against climate change.

27/03/2020

ACI URGES FINANCIAL ASSISTANCE TO SAFEGUARD MILLIONS OF AIRPORT JOBS

In response to the massive impact COVID-19 is having on the industry, Airports Council International (ACI) World has today called for measures to protect the livelihoods of millions of employees who work at airports around the world.

ACI data shows that airports employ – either directly or indirectly – more than 6.1 million people globally which makes up 60% of all employment in the aviation sector. Indeed, the typical hub airport has as many as 40,000 employees either working for the airport operator or for other employers on the airport site.

As a result of the COVID-19 pandemic and the travel restrictions which have been introduced to limit the virus's spread, current estimates indicate airport industry losses of up to $70 billion (all figures in US Dollars) as compared to a projected pre-COVID-19 baseline for 2020.

HERMES
AIR TRANSPORT ORGANISATION

Hermes participates in the EUROCONTROL Digitally Connected Airports conference

Hermes's Director General, Dr Kostas Iatrou, participated in Digitally Connected Airports conference co-organized by EUROCONTROL and ACI Europe. The conference topic is closely related with the theme of this year's Hermes recommendations.

Hermes attendance is part of the MoU signed in September last year which called for a closer cooperation between the two parties.

From left: Eamonn Brennan Director General of Eurocontrol and Dr Kostas Iatrou, Director General of Hermes.

HERMES
AIR TRANSPORT ORGANISATION

2020
HERMES AGM & LEADERS FORUM
Air Transport Re-imagined and Re-invented

Thursday 30 April · 2020

Supporting Organisation:

ALTA

SPONSOR

ATHENS
INTERNATIONAL AIRPORT
ELEFTHERIOS VENIZELOS

HERMES
AIR TRANSPORT ORGANISATION

PROGRAM Air Transport Re-imagined and Re-invented

15:00 CET   WELCOME ADDRESS

Dr Kostas Iatrou, *Director General, Hermes – Air Transport Organisation*

15:05 CET   KEYNOTE ADRESSES

– Jeff Poole, *President, Hermes – Air Transport Organisation*

– Salvatore Sciacchitano, *President of the Council, ICAO*

– Alexandre de Juniac, *Director General & CEO, IATA*

– Angela Gittens, *Director General, ACI & Board Member, Hermes – Air Transport Organisation*

– Simon Hocquard, *Director General, CANSO*

– Henrik Hololei, *DG MOVE, European Commission & Board Member, Hermes – Air Transport Organisation*

15:40 CET   2020 HERMES AGM

– **Annual Report:** *Dr Kostas Iatrou, Director General, Hermes – Air Transport Organisation*

– **Election of the Directors for 2020–2021**

– **Honorary Member:** *Salvatore Sciacchitano, President of the ICAO Council, presented by Jeff Poole, President, Hermes – Air Transport Organisation*

– **Presentation of the 2020 Hermes Report Committee:** *Professor Martin Dresner, Chair*

– **Financial statements:** *Robert Deillon, VP & Treasurer, Hermes – Air Transport Organisation*

– **Appointment of the auditor**

16:00 CET   PANEL DISCUSSION

Moderator: Eamonn Brennan, *Director General, EUROCONTROL*

– Abdul Wahab Teffaha, *Secretary General, AACO*

– Abdérahmane Berthe, *Secretary General, AFRAA*

– Luis Felipe de Oliveira, *Executive Director, ALTA & Board Member, Hermes – Air Transport Organisation*

– Montserrat Barriga, *Director General, ERA*

16:30 CET   CONCLUSION

EUROCONTROL, SESAR JU AND ACI EUROPE LAUNCH NEW INITIATIVE FOR SUSTAINABLE AIRPORT OPERATIONS

DIGITALLY CONNECTED AIRPORTS

MEETING THE CAPACITY DEMAND 2030

Speaking to 400 delegates from airports, airlines, air navigation service providers and industry, Eamonn Brennan said "We need to be able to meet future demand through sustainable operations. We need airports to be fully connected with the rest of the European network. To achieve that, we need to integrate them digitally with the EUROCONTROL Network Manager. EUROCONTROL, ACI EUROPE, SESAR JU, along with airports, airlines, ANSPs and manufacturers, are now working together on this challenge to help meet the European Green Deal, whilst enabling airports to expand in the years ahead".

EUROCONTROL, SESAR JU AND ACI EUROPE LAUNCH NEW INITIATIVE FOR SUSTAINABLE AIRPORT OPERATIONS

Source: EUROCONTROL

Eamonn Brennan, Director General of EUROCONTROL at the Digitally Connected Airports Conference.

He announced plans for the parties to collaborate and develop innovative sustainable airport solutions that can be deployed by all airports across Europe by 2023.

The conference, which brought together high-level representatives from all parts of the aviation value chain, heard keynote interventions from a number of high-profile figures from across the aviation industry including Olivier Jankovec, Director General of ACI EUROPE, Henrik Hololei, Director General of DG MOVE, Grazia Vittadini, CTO of Airbus, Michael O'Leary, CEO Ryanair Holdings, Jost Lammers, President and CEO Munich Airport, Marc Houalla, Executive Director Group ADP & Managing Director Paris CDG Airport, Birgit Otto, Executive Vice President

EUROCONTROL, SESAR JU AND ACI EUROPE LAUNCH NEW INITIATIVE FOR SUSTAINABLE AIRPORT OPERATIONS

Source: EUROCONTROL

Henrik Hololei, Director General of DG MOVE.

and COO of Schiphol Group, Hemant Mistry, Director Global Airport Infrastructure & Fuel IATA, Jonas Abrahamsson, President and CEO Swedavia, Dalton Philips, CEO Dublin Airport, Fiona Carleton, Director of Expansion Strategy and Future Operations, London Heathrow Airport, Ismail Polat, Chief Planning Officer Istanbul Airport, Andrew Charlton, Managing Director Aviation Advocacy, and Andrew Murphey, Manager Aviation at Transport & Environment.

"*With air traffic predicted to grow by around 48% in the coming 20 years, it is crucially important that we harness the potential of digital connectivity to drive performance and change at airports and to enable an integrated European ATM network,*" Eamonn Brennan added.

4th Annual
A4E Aviation Summit
3 March 2020 / Brussels

At their annual Aviation Summit today, A4E CEOs called for joint industry efforts to make Europe's Green Deal a success while stressing the need for legislative action in four key areas:

1) The urgent implementation of Europe's long-overdue Single European Sky, which could reduce CO2 emissions by up to 10%, resulting in 25 million tonnes2 of emissions savings per year. A swift update of the SES regulatory framework by 2021 is needed to ensure future air traffic management efficiencies can be realised.

2) Legislative options to boost the development and uptake of sustainable aviation fuels. SAFs have the potential to reduce CO2 emissions from aviation by up to 85%.

3) Full implementation of the United Nations' global aviation climate protection system, CORSIA. The development of more ambitious, long-term International Civil Aviation Organisation (ICAO) goals is essential.

4) Investments and incentives for innovations such as electric and hybrid engine technologies, which would help airlines move away from fossil fuels.

"As Europe's airlines, we are united in our aim to make the European Green Deal a success. We see this as part of our commitment to European society. We look forward to working closely with industry and policy makers to make the continent's skies the most efficient and environmentally friendly in the world -- because failing is simply not an option", said Benjamin Smith, CEO of the Air France-KLM Group and A4E's 2020 Chairman.

Over the next 10 years, A4E airlines will invest €169 billion in greener aircraft technologies which are on average 25% cleaner and less noisy than their predecessors. Potential pathways towards a net-zero, or low-carbon air transport of the future are currently being explored through a cross-sector study with Europe's airports, manufacturers and air navigation service providers, led by A4E.

"The challenge of tackling climate change is considerable. Airlines are doing their share, but in some areas, like air traffic management, we need action from other parts of the industry and EU leaders in order to succeed", said Willie Walsh, CEO of International Airlines Group (IAG). "The modernisation of European airspace is both urgent and long overdue. Byredesigning our airspace and creating an integrated system with more efficient flight paths, Europe could eliminate some 25 million tonnes of CO_2 emissions per year. This responsibility now lies with the Croatian and

2020 A4E Aviation Summit

Source: A4E

3 March 2020 | Brussels

🐦 #A4ESummit

Source: A4E

German Presidencies of the EU Council. The creation of a Single European Sky has been debated for 20 years -- we cannot afford to wait any longer", Walsh added.

Boosting the production and uptake of SAFs will be essential if EU airlines are to succeed in reducing their carbon footprint. In 2012, the EU set a target of producing two million tons of SAFs in Europe. Eight years later, production is significantly behind schedule.

"*The fact is, well-designed measures to support the development of SAFs were not sufficiently considered in the 2018 Review of the Renewable Energy Directive (REDII) and are still crucially missing. A tailor-made EU industrial policy for the deployment of innovative aviation fuels through financing and balanced legislation, as foreseen by the European Green Deal, is greatly welcomed to correct the SAFs' market failure*", said Thomas Reynaert, Managing Director of A4E. "Such legislation needs to prioritise additional incentives for aviation, instead of putting in place compulsory mandates for blending irrespective of price, production volumes or competitiveness considerations", Reynaert added.

Full and swift implementation of CORSIA, whilst contributing to the development of more ambitious long-term goals at the ICAO level would ensure that carbon mitigation efforts in Europe transcend EU borders, as only globally coordinated carbon reduction measures will be effective. The EU must also step up its climate diplomacy efforts to ensure more reluctant countries such as China, Russia, India and Brazil join the CORSIA system by 2021. In parallel, legislators need to work to ensure that future changes to the Emissions Trading Scheme (ETS) avoid overlaps among both EU and global market-based measures.

Finally, EU investment and support for future technologies that can deliver meaningful emissions reductions is essential to support aviation's sustainability transformation over the long-term. Greater support is needed for research, development and innovation around electric and hybrid engine technologies that can effectively help airlines reduce their dependency on fossil fuels.

1 CORSIA-Carbon Offsetting and Reduction Scheme for International Aviation. Under CORSIA, airlines are required to compensate the increase in CO_2 emissions above 2020 levels covered by the scheme. It is forecast that CORSIA will mitigate over 2.5 billion tonnes of CO_2 between 2020 and 2035. This system will offset growth-related emissions from global air traffic and make international air traffic growth CO_2-neutral.

2020 A4E Aviation Summit

Study: Fully implementing Europe's Single Aviation Market could save the EU Economy €37 bn per year

A new study1 found that Europe's 25-year old single aviation market is incomplete, costing EU airlines, their passengers and society up to €37 billion per year due to gaps in existing legislation and inconsistencies in the way EU aviation rules and processes are applied by member states. Nearly half of these costs, (€17.4 bn) could be saved by implementing an updated Single European Sky (SES) regulatory framework.

The single aviation market is, nevertheless, one of the major achievements of the EU. It has allowed airline competition to flourish, providing travellers with better connectivity, lower fares and enabling the free movement of people and goods throughout the continent – a cornerstone of European integration.

"In 2013, the European Commission estimated that implementing the Single European Sky would yield an annual cost savings of €5 bn. Seven years later, this amount has more than tripled due to the continued absence of a seamless airspace structure and an updated SES regulatory framework. Its implementation would allow airlines to put these funds to better use, for example investing them in new aircraft technologies or sustainable aviation fuels", said Thomas Reynaert, Managing Director, Airlines for Europe (A4E).

The study looked at known bottlenecks in the current system as well as new areas that have not been previously quantified. Improvements across five key
areas would strengthen the competitiveness of Europe's aviation sector over the long term, safeguarding jobs and connectivity while generating significant socio- economic benefits.
Current gaps include:

1) Lack of a Single European Sky, due to airspace inefficiencies and their related socio-economic costs (up to €17.4 billion/year);

2) Unilateral aviation taxes which distort the EU's internal market and create an uneven playing field (up to €16.7 billion/year could be gained by abolishing them);

3) Airport charges:More effective regulation and better enforcement of the EU's Airport Charges Directive could yield up to €2bn /year in savings;

4) Reintroduction of border controls within the Schengen area and lack of adequate staffing levels, causing passenger delays and additional operational costs of up to €1 billion/year;

5) Lack of consistent implementation of new EU customs rules (Union Customs Code) causing unnecessary administrative costs and thereby impacting EU cargo carriers' competitiveness (amount undefined).

**Italian Hipster smiles
at Athens International Airport**
Ceramic, 2019 A.D.

THE ΛUTHENTIC SMILES

ATHENS
INTERNATIONAL AIRPORT
ELEFTHERIOS VENIZELOS

SALVATORE SCIACCHITANO

President of the ICAO Council

ICAO · OACI · ИКАО | ICAO

* The interview was held before Covid-19 pandemic

What is ICAO view on the potential for Artificial Intelligence (AI) in civil aviation?

New technological innovations such as AI hold significant potential for civil and commercial aviation world-wide. The differentiating factor of an AI system from a standard software system is the characteristic ability to learn, improve, and predict. Through training, an AI system can generate knowledge and apply it to novel situations not encountered before.

In ICAO today it is foreseen that these AI capabilities and other emerging areas of innovation hold the potential to drive very positive benefits in terms of aviation safety, security, efficiency, and sustainability performance.

And what about for ICAO itself and its community of national regulators?

AI innovations can also be leveraged toward more efficient and streamlined aviation regulatory processes, making it vital that the international civil aviation sector take timely action to monitor and evaluate these developments. ICAO is doing just that today through a series of partnerships and arrangements with key innovators in this area. Our goal is to maximize the potential of these innovations as rapidly as possible, and such that no country is left behind as these capabilities mature.

Can you provide some examples of the types of partnerships being explored?

One involves ICAO partnering with the Interdisciplinary Center for Mathematical and Computational Modelling of the University of Warsaw and several ICAO member States. This is endeavouring to develop algorithms that can be used to optimize global air transport connectivity given various frequency, affordability, flight time, and fuel burn (emissions) constraints.

We also partnered on the UN AI for Good Annual Global summit, where we convened a working session on AI in aviation, collaborated with the XPrize Foundation by providing AI challenges and participating in the Global Initiative on AI and Data Commons, and we are currently exploring the creation of an AI in Aviation focus group under the International Telecommunication Union (ITU) to address issues relating to compliance and certification.

The above activities are in addition to our outreach with local AI innovators and universities in the Montreal, Canada, where our HQ is based, as it is currently seen as a leading global centre for AI research and development. We are also hosting internships and developing in-house deep-learning models showcasing natural language processing techniques for aeronautical information management and document summarization.

Does ICAO foresee a role for AI with respect to the fundamental air traffic management (ATM) needs of today's global network?

Absolutely. In fact during our most recent and 13th Air Navigation Conference, during its agenda item focused on Emerging Issues, a working paper was presented specifically on AI which explored the work now underway in Singapore to develop AI-based applications for ATM.

The ATM Research Institute (ATMRI), under the auspices of the Civil Aviation Authority of Singapore's Centre of Excellence for ATM, is researching the development of an Air Traffic Control Officer (ATCO) decision-making tool that leverages AI to learn and predict traffic management strategies for en-route operations. When mature, this tool will help controllers to better organise air traffic flows, reduce interventions needed from executive surveillance controllers, and allow the planning controller to focus much more on strategic-level planning.

Are there any other initiatives which ICAO is aware of?

There is much more going on as well, of course, and even to the point last Spring where we saw how a new AI tool had landed a small plane carrying passengers by sight alone at an Austrian airfield. This university-led initiative didn't need to rely on the radio signals provided by existing Instrument Landing Systems (ILS), which as you know many smaller airports cannot often afford.

In addition to developing solutions to support en-route operations, AI can be applied in speech recognition to detect read-back errors, the synchronisation of aircraft ground movements, or predicting optimal runway configurations to maximise throughput. It also permits a substantial increase in existing airspace capacity without significantly increasing the demand on the limited number of controllers available and their respective cognitive capabilities.

AI systems therefore have high potential in ATM, specifically in areas which involves decision making under uncertainty (e.g. conflict detection and resolution) and prediction

with limited information (e.g. trajectory prediction). These approaches can provide human operators with timely and dynamic information on atmospheric hazards, traffic fluctuations, and airspace utilisation.

How urgently needed are these types of solutions for global civil aviation today?

Today's air traffic system is clearly reaching its operational limits.

Simply put, accommodating future air traffic growth will be a challenging task for air navigation service providers (ANSPs) unless new capabilities are brought to the fore which permit more aircraft to be safely managed in the world's finite airspace.

What are some of the main challenges ICAO foresees as this innovation continues?

Certainly the opportunities outnumber the challenges where AI is concerned, but a very basic challenge we're confronted with, from the onset, is to develop the competencies of the specialists who must assess and ultimately certify AI-based systems for operational applications.

Another very key challenge, with AI and all digitally oriented innovations today, are the cyber vulnerabilities they present from both an information and operational security standpoint.

There is also a clear need to coordinate the researchers, academia, industry, State regulators, and service providers involved in this process,

and fortunately the Singapore example I mentioned above has taken this path and provides an important best practice for other States and regions considering similar initiatives. This function can be replicated at the global level to keep pace with other industries that are leveraging technological advancements enabled through the fourth Industrial Revolution, and I've been encouraged by how proactive the ICAO Secretariat has been in this regard.

Ultimately the promise of intelligent automation for aviation can only be realised through a globally coordinated approach, and I am confident that ICAO is very well-placed to lead that coordination among such diverse public and private stakeholders, consistent with its mission and role.

HOW A **DIGITAL TRANSFORMATION TODAY** CAN **TRANSFORM TOMORROW**

By Catherine Mayer, SITA

SITA

Prior to the COVID-19 pandemic, the aviation industry was busy transforming its business and operations leveraging digital technologies. According to the 2019 IT Insights report, 88% of airports[1] around the world were working through digital transformation plans. This included transforming the business, adapting to customers, staff, community and cultures, and leveraging existing and new technologies to meet objectives and goals[2]. Who would have thought that these efforts, along with the technologies, would be tested so quickly in order to maintain their business during this extraordinary crisis?

While the current focus is on business

and IT continuity, this will soon move to re-commissioning and growth to pre- COVID-19 levels. Airports and airlines will do well to continue evolving their digital transformation activities. There is an opportunity to leverage the massive amount of data that is being created during this crisis. The industry can learn from this event and ensure flexibility is incorporated in business plans, processes are improved and moving forward communications and information sharing among all stakeholders is more efficient and customized.

Right from the start, this pandemic tested the very foundation of digital transformation: the infrastructure. Aviation stakeholders had to quickly accommodate a remote work force, deliver safe and secure connectivity with ample bandwidth through virtual private or other networks and provide

access to cloud-based and back office programs. They had to do all this as well as provide new or enhanced communication channels between managers, staff and partners using a variety of video and conferencing services. At a time when physical, human interaction is restricted, IT is enabling stakeholders, including passengers and communities to remain in contact, share information and ideas, and ensure that personal, human relationships remain strong.

As in the recent past, digital technology continues to help. We see autonomous robots clean terminals, concierge humanoids provide information to passengers, and even supplement emergency and security staff in the terminals. One of the most successful uses of artificial intelligence during this crisis has been chatbots helping with increased volumes at call cen-

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1 Source: ACI/SITA 2019 IT Insights Survey Results

2 Source: ACI World Digital Transformation Best Practices December 2017

Chart 1 (blue bars): Virtual agents and chatbots 89%, Predictive analytics 75%, Targeted advertising/personalization 64%, Pattern recognition 51%, Brand perception improvement (e.g. social media/customer feedback analysis) 47%, Automatic scheduling (e.g. of repairs/maintenance) 44%

% of airlines with AI use cases currently implemented or planned by 2022.

Chart 2 (purple bars): Predictive analytics 73%, Virtual agents and chatbots 61%, Automatic scheduling (e.g. of repairs/maintenance) 48%, Pattern recognition 47%, Targeted advertising/personalization 38%, Brand perception improvement (e.g. social media/customer feedback analysis) 27%

% of airlines with AI use cases currently implemented or planned by 2022.

Airlines and Airports are investing in AI including predictive analytics
Source: 2019 SITA Air Transport IT Insights Report

ters and web inquiries. Drones can be used to monitor terminals, perimeters and aircraft, check runways, and deliver packages. Sensors and video are increasingly integrated into the airport network to monitor and share real-time passenger flow, temperature and health checks, and maintenance data. All of this data is critical for informed decision making, such as preventing crowds and congestion and consolidating or ramping up terminal operations based on demand.

These are just a few ways aviation is leveraging technology at the airport during this pandemic, however what is even more important, is how digital technologies will be incorporated to help in the recovery and industry growth that will come.

Aviation stakeholders have access to increasingly massive amounts of data so they are looking to artificial intelligence (AI) to help them provide the right information, to the right users, at the right time. Simply put, AI helps to highlight what issues need addressing at the moment. It also enables airports to predict what's coming, such as queues, people and baggage flow, terminal and asset demand, and delays to aircraft turnaround. When staff, and even passengers, have such enhanced information they are able to make informed and effective deci-

sions, reducing stress and anxiety of the unknown. AI applies the principles of machine learning, natural language processing, robotics and algorithms.

The autonomous robots mentioned above all have a layer of AI to help automate procedures and augment the human decision process, to better predict what-if scenarios, and avoid disruption. The machines can understand multiple languages, respond to specific questions, and automatically contact a human support person when the machine is unable to respond. Their primary function is to supplement limited human resources and capabilities, and act as an alternative to improve services and the customer experience. Airports and airlines are also providing handheld smart devices to their staff so they can access information from the cloud and other sources in order to best respond to customer needs. These activities enable workers to engage more effectively and in a personal manner with the passenger.

Sensors and Machine Learning Image Recognition video systems installed at airports also use AI to further analyze and predict events. AI can also be combined with mixed reality and digital twin technologies to pair the virtual and physical worlds, and allow analysis of system data. Real-time

data is collected from sensors located throughout landside and airside, even on the aircraft. It is then integrated with other industry data sources to enable a digital model of the real airport world. AI enables all stakeholders to interact with this holistic, digital, airport model.

SITA Lab is also exploring another way to use AI to help aviation stakeholders through enhanced 3D models used in a control center, on one large screen, controlled by gesture, voice and touch. Not only will airport systems' data be collected but any number of other systems connected via the Internet of Things (IoT) will be incorporated.

AI's real benefits come when it analyzes real-time and historical data and uses predictive technology to advise aviation stakeholders which elements require immediate attention, what to expect, and offer simulations to find best fit solutions while evaluating the impact of other actions. This is true of today's pandemic crisis as it is for other disruptions and normal operations. AI will enable staff to focus on other important activities such as safety, security, and customer service.

The aviation industry's resiliency is being tested today but technology, especially digital and AI, will help all stakeholders to recover so they can be successful tomorrow.

THE **D-DAY** FOR AIRPORTS DIGITALIZATION, DISRUPTION, "DE-COVIDIZATION"

By Ioanna Papadopoulou

Director, Communications and Marketing Athens International Airport

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It is not the strongest of the species that survives, nor the most intelligent.

It is the one that is most adaptable to change

Charles Darwin

In the BC - Before Covid - era, airports were continuously and constantly transforming to data-driven organizations. **Digitalization,** AI and the - so called- 4th Industrial Revolution were at the forefront of all discussions, the basic themes in most conferences and core strategic topics in the airport management boardrooms. With data being generated across all stages of the airport operations and the passengers' journey, an environ-ment rich for digital technology and analytics was there, waiting to be exploited and turned into insights and informed business decisions.

In the BC era, airports as data-driven, digitalized organizations were focused on delivering operational efficiency and process optimization, improving passenger experience, driving business growth and continuously exploiting new opportunities, strengthening at the same time their role in the local, regional and national economies' development.

In practice, what the airports strived for was the Data & Analytics Continuum, where data, being the raw material for each business decision, would lead to deep insights, thorough knowledge of the business partners' and consumers' needs and wants and finally to informed decisions on the way to the airports' continuous growth and development (Graph 1).

Different airports claimed different degrees of digitalization. These extended from the analysis of key metrics derived from historical and market surveys-acquired data to support and justify business decisions, to strategic and holistic approaches to data and analytics, properly integrated into the business model, coupled with a data culture, embedded into new or existing business processes.

During the BC era, **Disruption** was also often referred to as the co-efficient of Digitalization.

In dictionaries, the term Disruption is explained as "a disturbance or problem that interrupts an event, activity

The Data and Analytics Continuum
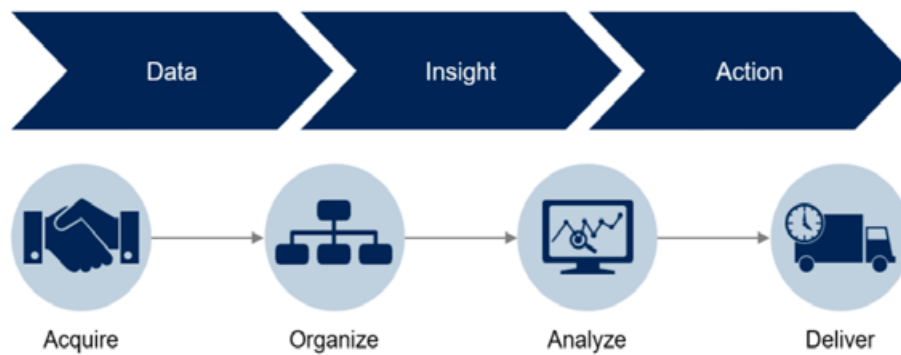
Graph 1. Source: Gartner (October 2018)
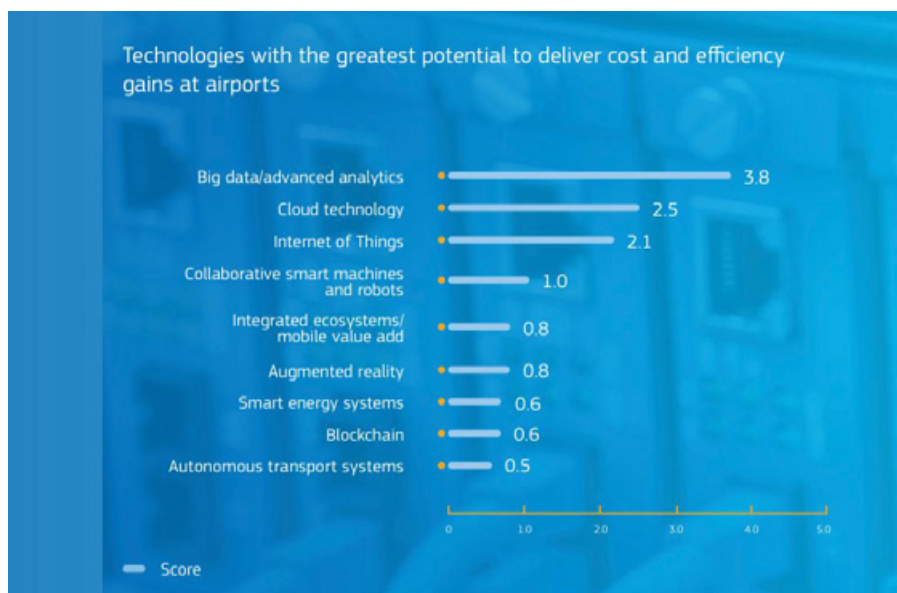
Graph 2. Source: Amadeus, Airport Digital Transformation (2018)

or process". In business use, however, the term really took off with Clayton Christensen's 1997 book "The Innovator's Dilemma", expanding also on the concept of disruptive technologies, a term that the author had coined in a 1995 article "Disruptive technologies: Catching the Wave".

In the BC era, the term "disruptive technologies" was often used by airport CEOs and executives as quasi- synonymous to the airport digitalization.

These disruptive - or game-changing technologies- would extend from Artificial Intelligence/Machine Learning,

Data Analytics (including Predictive Analytics), Cloud and Internet of Things to Immersive Experience, Cybersecurity, APIs, collaboration tools, robotics and autonomous vehicles (Graph 2).

Authentic Disruption however does occur at (rare) times, posing a real and sudden threat to business continuity, challenging, at the same time, existing business models and processes, even leading to a devaluation or belittlement of the organization's contribution to economy and society.

Authentic Disruption is what aviation is facing at the moment.

Its holistic impact on the aviation sector calls for more sophisticated and flexible use of technology, an end-to-end digital architecture, institutional transformation and new leadership skills in order for the aviation sector to ride the disruption wave, accelerate return to a new normality and navigate the "**De-COVIDisation**" era.

In specific:

- **Restoring the consumers' trust** and confidence in air travel, satisfying, at the same time, the strict prerequisites set by the health / governmental authorities for the gradual and controlled reopening of the aviation market call for technological advancements, rewriting software and re- architecting a digital ecosystem. Massive testing, app-based contact tracing and a wide range of digital tools to facilitate health-certifying processes are key to winning the battle on this front.

   The technological race has already begun: On April 10th, Apple and Google announced plans to combine their assets to assist the tracking of the COVID19 pandemic. On April 15th, EMIRATES was the first airline to announce the conduct of on-site rapid COVID19 tests for passengers. Airports in Far- East Asia are continuously introducing the use of technology and establish new processes to minimize the COVID19 risks for travelers and airport personnel, while aviation industry organizations are looking for immediate, trusted and innovative technological solutions.

   Advanced technology, new sophisticated tools in place and digitalization will prove to be "the

license to re-operate" for aviation in total. Both in the minds (and travel decisions) of the consumers, as well as in the minds (and policy decisions) of governmental authorities.

- **Repositioning of the Human Factor:**

  i. *At the work place* - it has already commenced, abruptly overturning - and, at the same time, modernizing - established practices at the workplace. A new distance office work culture is emerging through the work-from-home digital platforms, interactive dashboards and connected multiple devices. A sense of flexibility and "freedom" is apparent, it seems however that eventually, creative, solid practices and a new "toolkit" for the reinvention of the work culture that will keep the employees involved in and connected to the company, will be needed.

  In terms of operational efficiency and front-line work, Machine Learning and Robotics will be instrumental. Robots are already hard at work in hospitals, sterilizing rooms, delivering medication and supplies and assisting medical staff to work much safer and more efficiently. Robots are also already in place at airports for passenger assistance, security or cleaning and it seems that the need for contactless processes and minimization of health risks as well as operational efficiency and subsequent cost-cutting gains are pointing the way to further exploitation of this model at the airport's working environment, changing, at the same

time, the end-to-end passenger experience.

ii. *At the Retail Stores* - a new airport Retail Realit(y) seems to be emerging. Restoring consumers' confidence to air travel will also entail the restoration of the consumer's trust to the airport retail. The need for the minimization of risk, possible introduction of social-distancing measures and the establishment of contactless processes will probably point the way to the expansion of digital, online platforms and transformation of the overall retail experience.

In the De-COVIDisation era, the three main 'R's of the airport retail reality, ie. Relationship with the consumer, Resetting expectations and Recovering the customer experience will have to be "reinvented" mainly through the digital ecosystem.

- During the De-COVIDisation era and the rough course to the new normality, **growth in data will be massive and it will be exponential**; the need of an end-to-end digital architecture and the creation of data culture within the organizations will be direly needed. The "Digital Ready" airport will be once more a core strategic topic discussed in the airport boardrooms (Graph 3).

This time, however, focus will shift to the enabling technologies that will not merely support the "Sense of a -Digital- Place" but also, the "Sense of a Safe -in terms of Public Health- Digital Place", the data-generating sources being, among others, virus-tracking apps and innovative technology that will:

- facilitate health certifying processes,
- respond to the public health and safety challenges where analytics can make a difference
- analyze factors influencing travel decisions and
- predict travel patterns and passenger behaviors.

During the BC era, depending on the degree of each airport's digitalization, strategies, efforts - and budgets - mainly supported Descriptive and Diagnostic analytics, trying to respond to the What happened? and Why did it happen? questions.

The De-COVIDisation era will be mainly pointing to Predictive and Prescriptive analytics.

What will happen? and What should I do? will be part of every day's digital agenda and quasi-normal operations.

- **Institutional transformation** will also be further accelerated and dictated by the inevitable involvement of health/ governmental authorities to the decision-making procedures during the De-COVIDisation era. The gradual reopening of the markets, the time and pace of this reopening, operational terms, business issues even, will be considered and decided by the health/governmental authorities for an undefined period of time and data will have to be shared with a number of institutional players outside the organizational structure; information producers and information consumers will not be part of the same organization's ecosystem, a fact which stresses even more
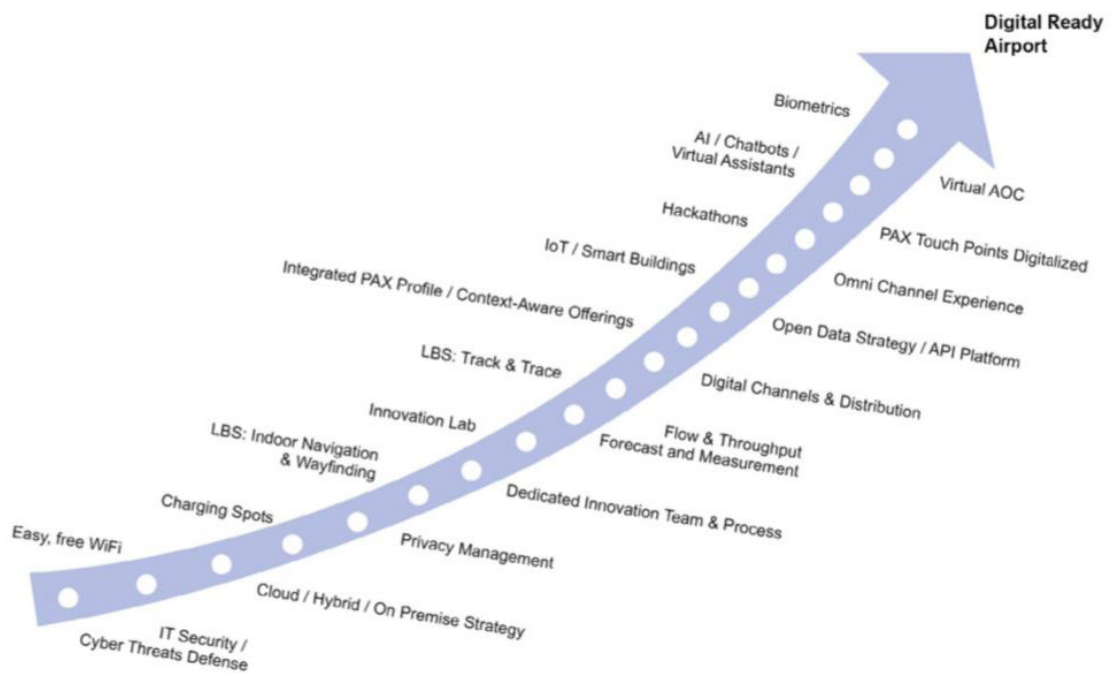
Graph 3. *Source: ACI World (2017)*

the need for a digital architecture based on the principles of transparency, accountability and security.

- Finally, **Leadership**; at this stage, no one knows how long the De-COVIDisation era will last and what will be the shape of aviation -regulatory and business models, players, operational status- in a couple of months from now, let alone, a year or two.

While timely, informed decisions are imperative for the successful management of airport businesses, all three key elements (time, data and information that could lead to business decisions, as well as the decisions themselves) will now be determined, at a great extent, by factors and agents that will not be within the organizations' influence and reach.

At the same time, the roles and responsibilities of business leaders have dramatically changed during the last few weeks, along with the business and corporate priorities. Maintaining liquidity, controlling costs and balancing complicated labor and legal issues are - and will be for quite some time- the main priorities, amidst health and safety concerns.

The road to a new normality and full De-COVIDisation will be a long and winding one, with recurrent disruptions along the way.

Now more than ever, new leadership qualities and behaviors are needed in this battle for survival: Deciding with speed over precision, Re-Inventing solutions, Communicating openly and frankly, Taking care of people, Engaging for impact.

And Adapting boldly.

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STATISTICS

DEC 2019:
Air Passenger Market Analysis

IATA

Chart 1 – Air passenger volumes and latest trend

Industry RPKs (billion per month)

Sources: IATA Economics, IATA Monthly Statistics
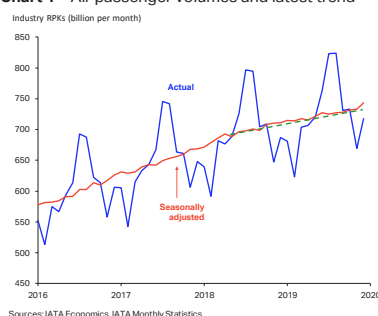
Chart 2 – Economic conditions (monthly data from composite PMIs, selected regions and countries)
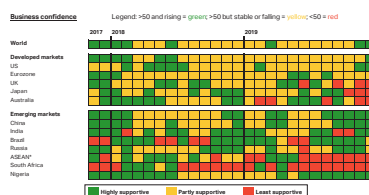
Chart 3 – Contribution to annual RPK growth (airline region of registration)
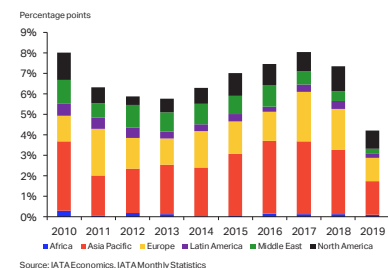
Percentage points

Source: IATA Economics, IATA Monthly Statistics

Chart 4 – Passenger load factors by region

Sources: IATA Economics, IATA Monthly Statistics   *Data from 1990 onwards

Chart 5 – International RPK growth, yearly (airline region of registration basis)
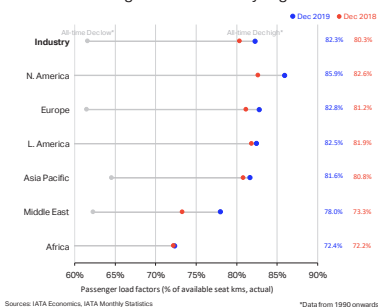
Sources: IATA Economics, IATA Monthly Statistics
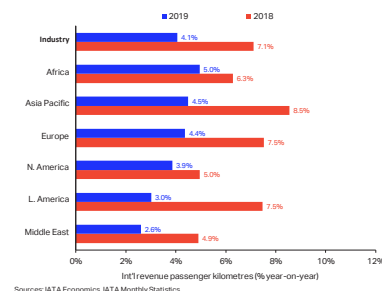
Chart 6 – Domestic RPK growth by market, yearly

Sources: IATA Economics, IATA Monthly Statistics
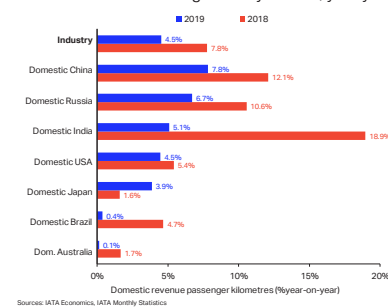
Air passenger market detail - December 2019

	World share[1]	December 2019 (% year-on-year)				2019%			
		RPK	ASK	PLF (%-pt)[2]	PLF (level)[3]	RPK	ASK	PLF (%-pt)[2]	PLF (level)[3]
TOTAL MARKET	100.0%	4.5%	2.1%	1.9%	82.3%	4.2%	3.4%	0.7%	82.6%
Africa	2.1%	5.4%	5.1%	0.2%	72.4%	4.9%	4.7%	0.1%	71.7%
Asia Pacific	34.7%	3.5%	2.5%	0.8%	81.6%	4.8%	4.5%	0.2%	81.9%
Europe	26.8%	2.5%	0.5%	1.6%	82.8%	4.2%	3.6%	0.5%	85.2%
Latin America	5.1%	1.5%	0.8%	0.6%	82.5%	4.2%	2.9%	1.0%	82.6%
Middle East	9.0%	5.9%	-0.4%	4.7%	78.0%	2.4%	0.1%	1.7%	76.2%
North America	22.3%	8.6%	4.4%	3.3%	85.9%	4.1%	2.8%	1.0%	84.9%
International	63.8%	3.8%	1.0%	2.2%	81.8%	4.1%	3.0%	0.8%	82.0%
Africa	1.8%	5.1%	4.2%	0.6%	72.1%	5.0%	4.5%	0.3%	71.3%
Asia Pacific	19.1%	3.9%	2.4%	1.2%	81.8%	4.5%	4.1%	0.3%	80.9%
Europe	24.0%	2.6%	0.2%	1.9%	83.5%	4.4%	3.7%	0.6%	85.6%
Latin America	2.7%	-1.1%	-2.8%	1.4%	82.3%	3.0%	1.6%	1.1%	82.9%
Middle East	8.7%	6.4%	-0.3%	4.9%	78.1%	2.6%	0.1%	1.8%	76.3%
North America	7.5%	5.2%	2.0%	2.6%	84.6%	3.9%	2.2%	1.3%	84.0%
Domestic	36.2%	5.8%	3.9%	1.5%	83.1%	4.5%	4.1%	0.4%	83.7%
Dom. Australia[4]	0.8%	0.8%	1.1%	-0.2%	80.6%	0.1%	0.1%	0.0%	80.1%
Domestic Brazil[4]	1.1%	1.6%	2.0%	-0.3%	84.0%	0.4%	-1.4%	1.5%	82.7%
Dom. China P.R.[4]	9.8%	3.7%	3.6%	0.0%	81.8%	7.8%	8.2%	-0.3%	84.6%
Domestic India[4]	1.6%	1.7%	1.0%	0.6%	88.2%	5.1%	4.2%	0.7%	87.4%
Domestic Japan[4]	1.1%	1.8%	1.8%	0.0%	69.8%	3.9%	2.8%	0.8%	73.8%
Dom. Russian Fed.[4]	1.5%	3.0%	5.1%	-1.5%	77.7%	6.7%	7.1%	-0.3%	83.2%
Domestic US[4]	14.0%	10.5%	5.7%	3.8%	86.7%	4.5%	3.5%	0.8%	85.5%

[1]% of industry RPKs in 2019   [2]Year-on-year change in load factor   [3]Load factor level

[4] Note: the seven domestic passenger markets for which broken-down data are available account for 30% of global total RPKs and approximately 82% of total domestic RPKs

Note: The total industry and regional growth rates are based on a constant sample of airlines combining reported data and estimates for missing observations. Airline traffic is allocated according to the region in which the carrier is registrated; it should not be considered as regional traffic.

JAN 2020:
Air Passenger Market Analysis

IATA

Chart 1 – Air passenger volumes and latest trend

Industry RPKs (billion per month)

Actual

Seasonally adjusted

Sources: IATA Economics, IATA Monthly Statistics

Chart 2 – Contribution to annual RPK growth (airline region of registration)
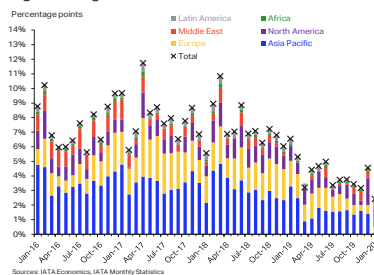
Percentage points

Latin America · Africa · Middle East · North America · Europe · Asia Pacific · ✕ Total

Sources: IATA Economics, IATA Monthly Statistics

Chart 3 – Economic conditions (monthly data from composite PMIs, selected regions and countries)

Business confidence

Legend: >50 and rising = green; >50 but stable or falling = yellow; <50 = red

World

Developed markets
US
Eurozone
UK
Japan
Australia

Emerging markets
China
India
Brazil
Russia
ASEAN*
South Africa
Nigeria

Highly supportive · Partly supportive · Least supportive

Sources: IATA, Markit, Thomson Reuters Datastream · * Manufacturing PMI
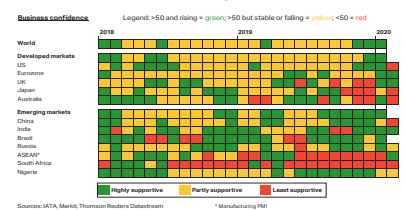
Chart 4 – Exposure to APAC and China RPKs (airline region of registration)

% of total RPKs, YE Nov 2019

% of RPKs from Domestic China
% of RPKs from International China
% of RPKs from International Asia Pacific (excl. China)

Airlines' region of registration

Source: IATA Economics using DDS
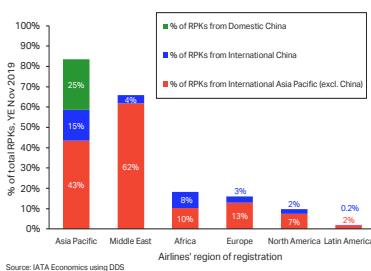
Chart 5 – Passenger load factors by region

● Jan 2020 ● Jan 2019

All-time Jan low* All-time Jan high*

	Jan 2020	Jan 2019
Industry	80.3%	79.7%
L. America	82.6%	82.3%
Europe	81.6%	79.9%
N. America	81.2%	79.6%
Asia Pacific	79.9%	81.3%
Middle East	78.5%	74.6%
Africa	70.2%	70.8%

Passenger load factors (% of available seat kms, actual)

Sources: IATA Economics, IATA Monthly Statistics   *Data from 1990 onwards

Chart 6 – International RPK growth, yearly (airline region of registration basis)

● Jan 2020 ● Dec 2019

	Jan 2020	Dec 2019
Industry	2.5%	3.7%
Middle East	5.4%	5.8%
Africa	5.3%	5.1%
N. America	2.9%	5.2%
Asia Pacific	2.5%	3.9%
Europe	1.6%	2.7%
L. America	-3.7%	-1.3%

International revenue passenger kilometres (% year-on-year)

Sources: IATA Economics, IATA Monthly Statistics

Chart 7 – Domestic RPK growth by market

● Jan 2020 ● Dec 2019

	Jan 2020	Dec 2019
Industry	2.3%	6.0%
Domestic USA	7.5%	10.1%
Domestic Russia	3.9%	3.0%
Domestic Japan	3.8%	2.1%
Domestic India	2.5%	2.8%
Domestic Brazil	2.1%	1.6%
Dom. Australia	0.1%	1.9%
Domestic China	-6.8%	4.6%

Domestic revenue passenger kilometres (% year-on-year)

Sources: IATA Economics, IATA Monthly Statistics

Air passenger market detail - January 2020

	World share[1]	January 2020 (% year-on-year)				2019 calendar year (% year-on-year)			
		RPK	ASK	PLF (%-pt)[2]	PLF (level)[3]	RPK	ASK	PLF (%-pt)[2]	PLF (level)[3]
TOTAL MARKET	100.0%	2.4%	1.7%	0.6%	80.3%	4.2%	3.4%	0.6%	82.6%
Africa	2.1%	5.2%	6.1%	-0.6%	70.2%	4.9%	4.7%	0.1%	71.7%
Asia Pacific	34.7%	0.4%	2.2%	-1.5%	79.9%	4.8%	4.6%	0.2%	81.9%
Europe	26.8%	1.6%	-0.5%	1.7%	81.6%	4.3%	3.6%	0.6%	85.2%
Latin America	5.1%	0.4%	0.0%	0.3%	82.6%	4.2%	3.0%	1.0%	82.6%
Middle East	9.0%	5.9%	0.6%	3.9%	78.5%	2.3%	0.1%	1.7%	76.2%
North America	22.2%	5.7%	3.6%	1.6%	81.2%	3.9%	2.9%	0.9%	84.8%
International	63.8%	2.5%	0.9%	1.2%	81.1%	4.1%	3.0%	0.8%	82.0%
Africa	1.8%	5.3%	5.7%	-0.3%	70.5%	5.0%	4.5%	0.3%	71.3%
Asia Pacific	19.1%	2.5%	3.0%	-0.4%	81.6%	4.5%	4.1%	0.3%	80.9%
Europe	24.0%	1.6%	-1.0%	2.1%	82.7%	4.4%	3.7%	0.6%	85.6%
Latin America	2.7%	-3.7%	-4.0%	0.2%	82.7%	3.0%	1.6%	1.1%	82.8%
Middle East	8.7%	5.4%	0.5%	3.6%	78.3%	2.5%	0.2%	1.8%	76.3%
North America	7.5%	2.9%	1.6%	1.0%	81.7%	3.9%	2.2%	1.3%	84.0%
Domestic	36.2%	2.3%	3.0%	-0.5%	78.9%	4.5%	4.1%	0.3%	83.6%
Dom. Australia[4]	0.8%	0.1%	-1.4%	1.2%	79.3%	0.2%	0.1%	0.1%	80.2%
Domestic Brazil[4]	1.1%	2.1%	0.1%	1.6%	85.7%	0.4%	-1.4%	1.5%	82.7%
Dom. China P.R.[4]	9.8%	-6.8%	-0.2%	-5.4%	76.7%	8.0%	8.4%	-0.3%	84.6%
Domestic India[4]	1.6%	2.5%	2.3%	0.1%	86.1%	5.2%	4.3%	0.7%	87.4%
Domestic Japan[4]	1.1%	3.8%	1.9%	1.3%	68.1%	3.9%	2.8%	0.8%	73.8%
Dom. Russian Fed.[4]	1.5%	3.9%	8.3%	-3.1%	72.2%	6.7%	7.1%	-0.3%	83.2%
Domestic US[4]	14.0%	7.5%	4.9%	1.9%	81.1%	4.3%	3.5%	0.6%	85.3%

[1]% of industry RPKs in 2019   [2]Year-on-year change in load factor   [3]Load factor level

[4]Note: the seven domestic passenger markets for which broken-down data are available account for 30% of global total RPKs and approximately 83% of total domestic RPKs

Note: The total industry and regional growth rates are based on a constant sample of airlines combining reported data and estimates for missing observations. Airline traffic is allocated according to the region in which the carrier is registered; it should not be considered as regional traffic.

FEB 2020:
Air Passenger Market Analysis

Chart 1 – Air passenger volumes and latest trend
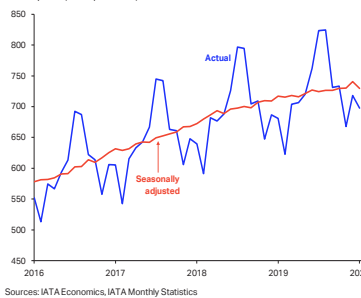
Industry RPKs (billion per month)

Actual

Seasonally adjusted

Sources: IATA Economics, IATA Monthly Statistics

Chart 2 – OE global GDP growth forecast

% change year-on-year

COVID-19

Source: Oxford Economics March 2020 forecast

Chart 3 - Economic conditions (monthly data from composite PMIs, selected regions and countries)

Business confidence   Legend: >50 and rising = green; >50 but stable or falling = yellow; <50 = red

World
Developed markets
US
Eurozone
UK
Japan
Australia
Emerging markets
China
India
Brazil
Russia
ASEAN*
South Africa
Nigeria

Highly supportive   Partly supportive   Least supportive

Sources: IATA, Markit, Thomson Reuters Datastream   * Manufacturing PMI

Chart 4 – Passenger load factors by region

Passenger load factors (% of available seat kms, actual)

Sources: IATA Economics, IATA Monthly Statistics   *Data from 1990 onwards

Chart 5 – International RPK growth, yearly (airline region of registration basis)

International revenue passenger kilometres (% year-on-year)
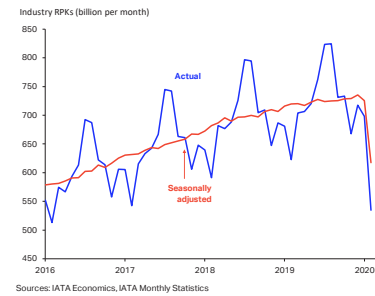
Sources: IATA Economics, IATA Monthly Statistics

Chart 6 – RPK growth in international segment based RPKs, selected routes

Feb 2020 year-on-year RPK growth by selected int'l routes

Share of total global RPKs (Year ended Feb 2020)

Sources: IATA Economics, IATA Monthly Statistics by Route

Chart 7 – Domestic RPK growth by market

Domestic revenue passenger kilometres (% year-on-year)

Sources: IATA Economics, IATA Monthly Statistics
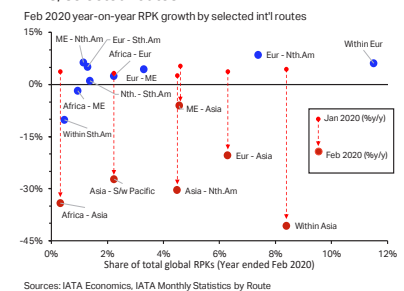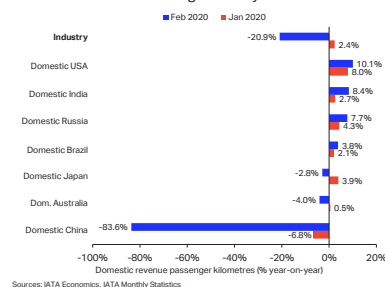
Air passenger market detail - February 2020

	World share [1]	February 2020 (% year-on-year)				% year-to-date			
		RPK	ASK	PLF (%-pt)[2]	PLF (level)[3]	RPK	ASK	PLF (%-pt)[2]	PLF (level)[3]
TOTAL MARKET	*100.0%*	**-14.1%**	**-8.7%**	**-4.8%**	**75.9%**	**-5.4%**	**-3.3%**	**-1.8%**	**78.4%**
Africa	*2.1%*	-0.7%	5.1%	-3.9%	66.8%	2.6%	5.7%	-2.0%	68.7%
Asia Pacific	*34.7%*	-41.3%	-28.2%	-15.1%	67.8%	-19.6%	-12.3%	-6.9%	75.2%
Europe	*26.8%*	0.7%	1.2%	-0.5%	81.3%	1.1%	0.3%	0.7%	81.5%
Latin America	*5.1%*	3.1%	3.5%	-0.3%	81.2%	1.7%	1.7%	0.1%	82.0%
Middle East	*9.0%*	1.7%	1.5%	0.1%	72.5%	3.9%	1.0%	2.1%	75.6%
North America	*22.2%*	5.5%	4.7%	0.6%	81.1%	5.7%	4.1%	1.2%	81.3%
International	*63.8%*	**-10.1%**	**-5.0%**	**-4.2%**	**75.3%**	**-3.4%**	**-1.9%**	**-1.2%**	**78.5%**
Africa	*1.8%*	-1.1%	4.8%	-3.9%	65.7%	2.5%	5.4%	-1.9%	68.4%
Asia Pacific	*19.1%*	-30.4%	-16.9%	-13.2%	67.9%	-12.7%	-6.3%	-5.6%	76.0%
Europe	*24.0%*	0.2%	0.7%	-0.4%	82.0%	0.9%	-0.2%	0.9%	82.4%
Latin America	*2.7%*	-0.4%	-0.4%	0.0%	81.3%	-2.1%	-2.3%	0.2%	82.2%
Middle East	*8.7%*	1.6%	1.3%	0.2%	72.6%	3.6%	0.8%	2.0%	75.6%
North America	*7.5%*	-2.8%	-1.5%	-1.0%	77.7%	0.2%	0.1%	0.1%	79.8%
Domestic	*36.2%*	**-20.9%**	**-15.1%**	**-5.6%**	**77.0%**	**-9.0%**	**-5.7%**	**-2.8%**	**78.2%**
Dom. Australia [4]	*0.8%*	-4.0%	-1.2%	-2.2%	75.6%	-1.6%	-2.1%	0.5%	78.4%
Domestic Brazil [4]	*1.1%*	3.8%	4.3%	-0.4%	82.0%	2.9%	2.0%	0.7%	84.0%
Dom. China P.R. [4]	*9.8%*	-83.6%	-70.4%	-39.3%	48.5%	-45.5%	-34.4%	-14.4%	70.5%
Domestic India [4]	*1.6%*	8.4%	9.9%	-1.2%	88.1%	5.4%	5.9%	-0.4%	87.1%
Domestic Japan [4]	*1.1%*	-2.8%	3.9%	-4.7%	67.1%	0.5%	2.8%	-1.5%	67.7%
Dom. Russian Fed. [4]	*1.5%*	7.7%	9.1%	-1.0%	75.7%	6.0%	8.7%	-1.9%	74.1%
Domestic US [4]	*14.0%*	10.1%	8.3%	1.3%	82.9%	9.0%	6.5%	1.9%	82.2%

[1] % of industry RPKs in 2019   [2] Year-on-year change in load factor   [3] Load factor level

[4] Note: the seven domestic passenger markets for which broken-down data are available account for 30% of global total RPKs and approximately 82% of total domestic RPKs

Note: The total industry and regional growth rates are based on a constant sample of airlines combining reported data and estimates for missing observations. Airline traffic is allocated according to the region in which the carrier is registered; it should not be considered as regional traffic.

STATISTICS

NOV 2019: Worldwide Traffic Results

Passenger traffic/Freight volumes
(*Summary*)

Table 1: Summary Worldwide Traffic Results, NOVEMBER 2019 (% change)	November 2019 over November 2018	Year to date 2019	12-month rolling year
PaxFlash			
International passenger	2.7	4.1	4.2
Domestic passenger	1.2	2.3	2.3
Total passenger	1.8	3.0	3.1
FreightFlash			
International freight	(1.8)	(4.4)	(4.1)
Domestic freight	(2.5)	0.4	0.2
Total freight	(2.0)	(3.0)	(2.9)

TABLE 2: PaxFlash summary – November 2019 Regions	November 2019 % YOY	YTD November 2019 % YOY	YE thru November 2019 % YOY
International passengers			
Africa	5.5	6.0	6.4
Asia-Pacific	2.3	4.0	4.0
Europe	3.1	4.4	4.6
Latin America-Caribbean	(0.9)	2.2	2.3
Middle East	6.4	3.5	3.6
North America	0.0	3.2	3.5
World	2.7	4.1	4.2
Domestic passengers			
Africa	5.8	5.5	5.7
Asia-Pacific	2.7	1.5	1.5
Europe	(1.9)	(0.1)	0.1
Latin America-Caribbean	3.5	4.4	4.4
Middle East	...	...	...
North America	0.1	3.2	3.2
World	1.2	2.3	2.3
Total passengers			
Africa	5.6	6.0	6.3
Asia-Pacific	2.4	2.3	2.4
Europe	1.7	3.3	3.5
Latin America-Caribbean	2.1	3.7	3.6
Middle East	6.6	3.1	3.0
North America	0.1	3.2	3.2
World	1.8	3.0	3.1

TRAFFIC TABLE DEFINITIONS:

PASSENGER TRAFFIC: departing + arriving passengers
INTERNATIONAL: traffic performed between the designated airport and an airport in another country/territory
DOMESTIC: traffic performed between two airports located in the same country/territory
TOTAL: international + domestic passengers + direct transit passengers counted once (when breakdown is available)
Year-over-year percentage changes (% YOY) are calculated from a representative sample.

YOY Year-over-year same month comparison
YTD Year to date, starting Jan 2019, compared to same period in previous year
YE Year end, based on a rolling 12-month period, compared to the same prior 12-month perio

ACI
AIRPORTS COUNCIL
INTERNATIONAL

NOV 2019: Worldwide Traffic Results
Passenger traffic/Freight volumes
(Summary)

TABLE 3: FreightFlash summary – November 2019			
Regions	November 2019 % YOY	YTD November 2019 % YOY	YE thru November 2019 % YOY
International freight			
Africa	(3.4)	(0.1)	1.6
Asia-Pacific	(1.7)	(6.0)	(5.8)
Europe	(0.0)	(2.7)	(2.6)
Latin America-Caribbean	(2.6)	(4.2)	(3.8)
Middle East	(1.0)	(3.1)	(2.9)
North America	(4.7)	(5.0)	(4.5)
World	(1.8)	(4.4)	(4.1)
Domestic freight			
Africa	...	...	...
Asia-Pacific	(1.0)	(3.0)	(2.8)
Europe	(4.1)	0.7	0.7
Latin America-Caribbean	(0.5)	(0.7)	(0.7)
Middle East	...	...	...
North America	(3.3)	2.1	1.8
World	(2.5)	0.4	0.2
Total freight			
Africa	(4.5)	0.2	1.7
Asia-Pacific	(1.5)	(5.1)	(5.0)
Europe	(0.2)	(2.5)	(2.4)
Latin America-Caribbean	(2.0)	(3.3)	(3.0)
Middle East	(1.0)	(2.9)	(2.7)
North America	(4.0)	(0.8)	(0.8)
World	(2.0)	(3.0)	(2.9)

TRAFFIC TABLE DEFINITIONS:

FREIGHT TRAFFIC: loaded and unloaded freight; data in metric tonnes
INTERNATIONAL: traffic performed between the designated airport and an airport in another country/territory
DOMESTIC: traffic performed between two airports located in the same country/territory
TOTAL: international + domestic freight (when breakdown is available)
Note: No domestic freight traffic is reported by airports in the Middle East and Africa regions.
Year-over-year percentage changes (% YOY) are calculated from a representative sample.

YOY Year-over-year same month comparison
YTD Year to date, starting Jan 2019, compared to same period in previous year
YE Year end, based on a rolling 12-month period, compared to same prior 12-month period

DEC 2019: Worldwide Traffic Results

Passenger traffic/Freight volumes
(*Summary*)

AIRPORTS COUNCIL INTERNATIONAL

Table 1: Summary Worldwide Traffic Results, December 2019 (% change)			
	December 2019 over December 2018	Year to date 2019	12-month rolling year
PaxFlash			
International passenger	4.9	4.1	4.1
Domestic passenger	4.9	2.8	2.8
Total passenger	4.9	3.4	3.4
FreightFlash			
International freight	(2.1)	(4.1)	(4.1)
Domestic freight	4.5	1.3	1.3
Total freight	(0.1)	(2.5)	(2.5)

TABLE 2: PaxFlash summary – December 2019			
Regions	December 2019 % YOY	YTD December 2019 % YOY	YE thru December 2019 % YOY
International passengers			
Africa	5.4	6.5	6.5
Asia-Pacific	7.6	4.0	4.0
Europe	4.4	4.4	4.4
Latin America-Caribbean	(0.6)	1.7	1.7
Middle East	4.9	3.7	3.7
North America	2.4	3.2	3.2
World	4.9	4.1	4.1
Domestic passengers			
Africa	7.3	6.8	6.8
Asia-Pacific	5.1	2.6	2.6
Europe	(1.8)	(0.2)	(0.2)
Latin America-Caribbean	4.4	4.7	4.7
Middle East	...	...	...
North America	7.3	3.5	3.5
World	4.9	2.8	2.8
Total passengers			
Africa	6.0	6.7	6.7
Asia-Pacific	6.0	3.0	3.0
Europe	2.8	3.2	3.2
Latin America-Caribbean	3.1	3.7	3.7
Middle East	4.6	3.3	3.3
North America	6.4	3.4	3.4
World	4.9	3.4	3.4

TRAFFIC TABLE DEFINITIONS:

PASSENGER TRAFFIC: departing + arriving passengers
INTERNATIONAL: traffic performed between the designated airport and an airport in another country/territory
DOMESTIC: traffic performed between two airports located in the same country/territory
TOTAL: international + domestic passengers + direct transit passengers counted once (when breakdown is available)
Year-over-year percentage changes (% YOY) are calculated from a representative sample.

YOY Year-over-year same month comparison
YTD Year to date, starting Jan 2019, compared to same period in previous year
YE Year end, based on a rolling 12-month period, compared to the same prior 12-month perio

► CONTINUED FROM PAGE 40

DEC 2019: Worldwide Traffic Results
Passenger traffic/Freight volumes
(*Summary*)

TABLE 3: FreightFlash summary – December 2019			
Regions	December 2019 % YOY	YTD December 2019 % YOY	YE thru December 2019 % YOY
International freight			
Africa	(5.2)	(0.5)	(0.5)
Asia-Pacific	(0.4)	(5.3)	(5.3)
Europe	0.5	(2.6)	(2.6)
Latin America-Caribbean	(7.8)	(4.6)	(4.6)
Middle East	(4.3)	(3.0)	(3.0)
North America	(6.0)	(4.9)	(4.9)
World	(2.1)	(4.1)	(4.1)
Domestic freight			
Africa	...	...	...
Asia-Pacific	6.4	(1.2)	(1.2)
Europe	1.1	2.1	2.1
Latin America-Caribbean	(0.2)	(0.7)	(0.7)
Middle East	...	...	...
North America	4.1	2.6	2.6
World	4.5	1.3	1.3
Total freight			
Africa	(4.7)	(0.2)	(0.2)
Asia-Pacific	1.4	(4.3)	(4.3)
Europe	0.6	(2.4)	(2.4)
Latin America-Caribbean	(5.5)	(3.5)	(3.5)
Middle East	(4.5)	(2.8)	(2.8)
North America	0.2	(0.5)	(0.5)
World	(0.1)	(2.5)	(2.5)

TRAFFIC TABLE DEFINITIONS:

FREIGHT TRAFFIC: loaded and unloaded freight; data in metric tonnes
INTERNATIONAL: traffic performed between the designated airport and an airport in another country/territory
DOMESTIC: traffic performed between two airports located in the same country/territory
TOTAL: international + domestic freight (when breakdown is available)
Note: No domestic freight traffic is reported by airports in the Middle East and Africa regions.
Year-over-year percentage changes (% YOY) are calculated from a representative sample.

YOY Year-over-year same month comparison
YTD Year to date, starting Jan 2019, compared to same period in previous year
YE Year end, based on a rolling 12-month period, compared to same prior 12-month period

JAN 2020: Worldwide Traffic Results
Passenger traffic/Freight volumes
(*Summary*)

Table 1: Summary Worldwide Traffic Results, January 2020 (% change)	January 2020 over January 2019	Year to date 2020	12-month rolling year
PaxFlash			
International passenger	2.7	2.7	3.8
Domestic passenger	1.3	1.3	2.3
Total passenger	1.9	1.9	2.9
FreightFlash			
International freight	(4.5)	(4.5)	(4.4)
Domestic freight	(4.4)	(4.4)	0.1
Total freight	(4.4)	(4.4)	(3.0)

TABLE 2: PaxFlash summary – January 2020			
Regions	January 2020 % YOY	YTD January 2020 % YOY	YE thru January 2020 % YOY
International passengers			
Africa	7.8	7.8	6.5
Asia-Pacific	1.0	1.0	3.2
Europe	3.6	3.6	4.4
Latin America-Caribbean	(1.5)	(1.5)	1.4
Middle East	6.1	6.1	3.6
North America	1.1	1.1	2.9
World	2.7	2.7	3.8
Domestic passengers			
Africa	9.9	9.9	7.3
Asia-Pacific	(3.6)	(3.6)	0.9
Europe	(1.5)	(1.5)	(0.5)
Latin America-Caribbean	5.4	5.4	4.8
Middle East	...	...	...
North America	4.8	4.8	3.7
World	1.3	1.3	2.3
Total passengers			
Africa	8.4	8.4	6.8
Asia-Pacific	(1.8)	(1.8)	1.7
Europe	2.2	2.2	3.1
Latin America-Caribbean	3.0	3.0	3.7
Middle East	7.7	7.7	3.6
North America	4.1	4.1	3.5
World	1.9	1.9	2.9

TRAFFIC TABLE DEFINITIONS:

PASSENGER TRAFFIC: departing + arriving passengers
INTERNATIONAL: traffic performed between the designated airport and an airport in another country/territory
DOMESTIC: traffic performed between two airports located in the same country/territory
TOTAL: international + domestic passengers + direct transit passengers counted once (when breakdown is available)
Year-over-year percentage changes (% YOY) are calculated from a representative sample.

YOY Year-over-year same month comparison
YTD Year to date, starting Jan 2019, compared to same period in previous year
YE Year end, based on a rolling 12-month period, compared to the same prior 12-month perio

JAN 2020: Worldwide Traffic Results
Passenger traffic/Freight volumes
(Summary)

TABLE 3: FreightFlash summary – January 2020

Regions	January 2020 % YOY	YTD January 2020 % YOY	YE thru January 20 2020 % YOY
International freight			
Africa	5.6	5.6	(0.2)
Asia-Pacific	(7.7)	(7.7)	(5.8)
Europe	(3.0)	(3.0)	(2.6)
Latin America-Caribbean	(1.2)	(1.2)	(5.2)
Middle East	0.6	0.6	(2.7)
North America	(5.2)	(5.2)	(5.2)
World	(4.5)	(4.5)	(4.4)
Domestic freight			
Africa	...	...	...
Asia-Pacific	(9.3)	(9.3)	(3.0)
Europe	2.0	2.0	2.2
Latin America-Caribbean	2.3	2.3	(0.6)
Middle East	...	...	...
North America	(2.4)	(2.4)	1.6
World	(4.4)	(4.4)	0.1
Total freight			
Africa	6.0	6.0	0.1
Asia-Pacific	(8.1)	(8.1)	(5.0)
Europe	(2.7)	(2.7)	(2.4)
Latin America-Caribbean	(0.2)	(0.2)	(3.9)
Middle East	0.5	0.5	(2.5)
North America	(3.5)	(3.5)	(1.1)
World	(4.4)	(4.4)	(3.0)

TRAFFIC TABLE DEFINITIONS:

FREIGHT TRAFFIC: loaded and unloaded freight; data in metric tonnes
INTERNATIONAL: traffic performed between the designated airport and an airport in another country/territory
DOMESTIC: traffic performed between two airports located in the same country/territory
TOTAL: international + domestic freight (when breakdown is available)
Note: No domestic freight traffic is reported by airports in the Middle East and Africa regions.
Year-over-year percentage changes (% YOY) are calculated from a representative sample.

YOY Year-over-year same month comparison
YTD Year to date, starting Jan 2019, compared to same period in previous year
YE Year end, based on a rolling 12-month period, compared to same prior 12-month period

STATISTICS

ECONOMIC DEVELOPMENT
NOV 2019: Air Transport Monthly Monitor
World Results and Analyses. Total scheduled services
(Domestic and international)

Air Transport Bureau
E-mail: ecd@icao.int

http://www.icao.int/sustainability/Pages/Air-Traffic-Monitor.aspx

GLOBAL KEY FIGURES	OCT 2019 (versus OCT 2018)	OUTLOOK* - NOV 2019 (versus NOV 2018)
	RPK ▲ +3.4% ASK ▲ +2.2% FTK ▼ -3.5% LF: 82.0% ▲ +0.1 pt	ASK ▲ +2.4% * Source OAG

PASSENGER TRAFFIC

Revenue Passenger-Kilometres - RPK

World passenger traffic grew by +3.4% YoY in October 2019, -0.4 percentage point lower than the growth in the previous month. All regions, except for Africa and the Middle East, posted a slowdown with Asia Pacific experiencing the most significant deceleration. The Middle East accelerated traffic growth notably and became the fastest growing region. Domestic traffic demand eased at the worldwide level with softening in the top domestic markets such as China and India.
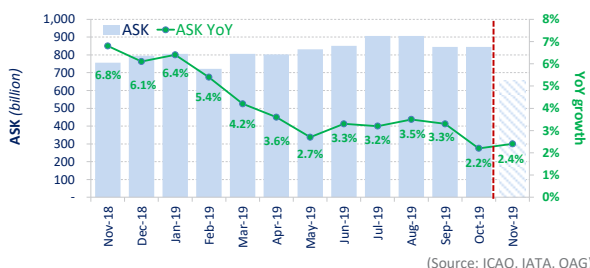

(Source: ICAO, IATA, OAG)

International Traffic vs. Tourist Arrivals

International passenger traffic grew by +3.2% YoY in October 2019, +0.2 percentage point higher than the growth in the previous month. Three regions recorded acceleration in traffic growth with the strongest pick-up in the Middle East. Latin America/Caribbean posted the weakest performance and became the only region with negative growth.

The growth of international tourist arrivals* remained relatively stable.

*UNWTO Definition

(Source: IATA, UNWTO)

CAPACITY

Available Seat-Kilometres - ASK

Capacity worldwide increased by +2.2% YoY in October 2019, -1.1 percentage points lower than the growth in the previous month (+3.3%).
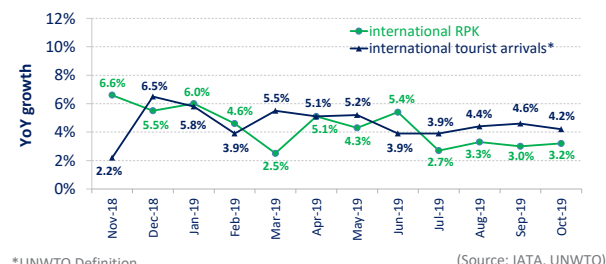
According to the airline schedules, capacity expansion is expected to be around +2.4% in November 2019.

(Source: ICAO, IATA, OAG)

Load Factor - LF

The passenger Load Factor reached 82.0% in October 2019, +0.1 percentage point higher than the previous month.

As traffic growth outpaced the capacity expansion, the October LF was +0.9 percentage point higher compared to the rate in the same period of 2018.
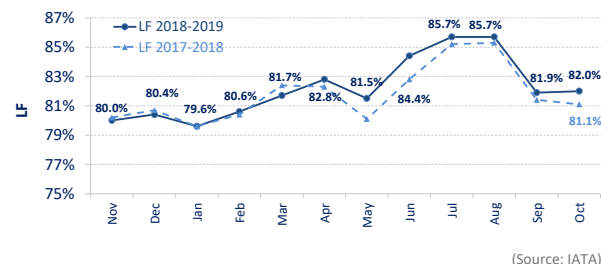
(Source: IATA)

FREIGHT TRAFFIC

Freight Tonne-Kilometres - FTK

World freight traffic reported a decline of -3.5% YoY in October 2019, +1.0 percentage point higher than the growth in the previous month. Albeit with marginal improvement in certain regions, freight traffic demand remained weak worldwide with consecutive negative growth over the last seven months. This weakness reflected the sluggish global trade development. Africa continued to be the only region growing positively and increased the momentum with a surge of double-digit growth. For the sixth month this year, the Middle East was the weakest performing region, followed by Asia/Pacific and Latin America/Caribbean.
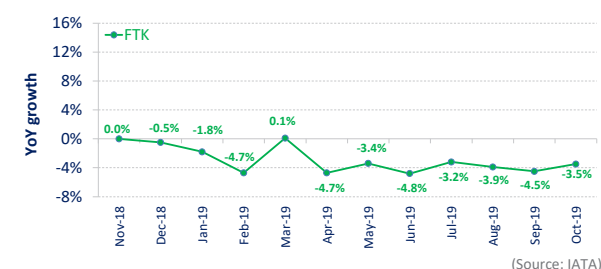
(Source: IATA)

ACRONYMS: **ACI:** Airports Council International; **ASK:** Available Seat-Kilometres; **IATA:** International Air Transport Association; **FTK:** Freight Tonne-Kilometres; **LF:** Passenger Load Factor; **OAG:** Official Airline Guide; **RPK:** Revenue Passenger-Kilometres; **UNWTO:** World Tourism Organization; **YoY:** Year-on-year; **YTD:** Year-to-date.

ECONOMIC DEVELOPMENT
ICAO | NOV 2019: Air Transport Monthly Monitor
World Results and Analyses. Total scheduled services
(Domestic and international)

TOP 15 AIRPORTS (Ranked by aircraft departures, passengers and volume of freight)

OCT 2019: +1.5%, +1.4%, and -3.5% YoY in terms of aircraft departures, passengers and freight for the Top 15

OCT 19

Airports (ranking by number of departures)	Departures	YoY	Airports (ranking by number of passengers)	Passengers*	YoY	Airports (ranking by tonnes of freight)	Freight**	YoY
Chicago IL, US (ORD)	40,770	0.8%	Atlanta GA, US (ATL)	4,756,935	2.7%	Hong Kong, CN (HKG)	419,000	-5.6%
Atlanta GA, US (ATL)	38,246	0.9%	Beijing, CN (PEK)	4,322,685	-3.5%	Memphis TN, US (MEM)	377,215	-5.0%
Dallas/Fort Worth TX, US (DFW)	31,095	10.4%	Chicago IL, US (ORD)	3,786,446	0.6%	Shanghai, CN (PVG)	321,523	2.4%
Los Angeles CA, US (LAX)	28,861	-2.7%	Los Angeles CA, US (LAX)	3,597,418	-0.9%	Incheon, KR (ICN)	239,755	-5.8%
Denver CO, US (DEN)	27,885	7.4%	Dubai, AE (DXB)	3,571,031	1.9%	Anchorage AK, US (ANC)	239,254	-4.1%
Charlotte NC, US (CLT)	25,333	3.7%	Tokyo, JP (HND)	3,550,644	-7.7%	Louisville KY, US (SDF)	237,936	12.3%
Beijing, CN (PEK)	25,096	-5.9%	London, GB (LHR)	3,496,138	0.5%	Dubai, AE (DXB)	220,216	-7.3%
Amsterdam, NL (AMS)	23,095	-1.1%	Paris, FR (CDG)	3,322,845	4.2%	Doha, QA (DOH)	196,868	-0.4%
Frankfurt, DE (FRA)	22,969	-1.3%	Frankfurt, DE (FRA)	3,216,688	1.0%	Taipei, CN (TPE)	195,040	-3.3%
Paris, FR (CDG)	22,197	3.0%	Amsterdam, NL (AMS)	3,215,722	0.3%	Los Angeles CA, US (LAX)	173,255	-8.2%
Shanghai, CN (PVG)	21,555	-1.1%	Dallas/Fort Worth TX, US (DFW)	3,188,776	11.1%	Miami FL, US (MIA)	172,789	-2.0%
Las Vegas NV, US (LAS)	21,304	7.7%	Guangzhou, CN (CAN)	3,173,712	3.3%	Chicago IL, US (ORD)	170,696	-0.8%
New Delhi, IN (DEL)	21,150	1.9%	Shanghai, CN (PVG)	3,141,775	-0.8%	Singapore, SG (SIN)	169,700	-10.6%
Guangzhou, CN (CAN)	21,002	0.9%	Istanbul, TR (IST)	3,098,615	8.4%	Beijing, CN (PEK)	169,145	-5.4%
London, GB (LHR)	20,710	-0.6%	Denver CO, US (DEN)	3,038,330	6.5%	Frankfurt, DE (FRA)	168,414	-8.2%

Note: Total scheduled and non-scheduled services

(Source: ACI)

In terms of **aircraft departures**, the Top 15 airports reported a growth of **+1.5%** YoY. Nine out of the Top 15 airports posted YoY increases. **Chicago** ranked **1st** with marginal growth of **+0.8%**. The strongest growth in operations was recorded by **Dallas/Fort Worth** at **+10.4%**, followed by **Las Vegas** at **+7.7%**.

In terms of **passengers**, the Top 15 airports reported a growth of **+1.4%** YoY. Eleven out of the Top 15 airports posted YoY increases. **Atlanta** remained at **1st** with a growth of **+2.7%**, followed by **Beijing**. **Dallas/Fort Worth** recorded the most significant growth at **+11.1%**. Decline was observed in major hubs in Asia/Pacific with **-7.7%** and **-3.5%** fall in **Tokyo** and **Beijing**, respectively.

In terms of **freight**, the Top 15 airports reported a decline of **-3.5%** YoY. All the Top 15 airports posted declines except for **Louisville (+12.3%)** and **Shanghai (+2.4%)**. The former continued to record the highest growth supported by its UPS hub position. The most significant decrease was posted by **Singapore** at **-10.6%**, followed by both **Frankfurt** and **Los Angeles** at **-8.2%**.

TOP 15 AIRLINE GROUPS (Ranked by RPK)

OCT 2019: +4.3% YoY in terms of RPK for the Top 15

In terms of RPK, the Top 15 airline groups accounted for 48.5% of the world's total RPK in October 2019 and grew by +4.3% YoY. This growth was +0.9 percentage point higher than the world's average on scheduled services. Fourteen out of the Top 15 airline groups posted YoY growth.

United ranked **1st** with moderate growth of **+2.9%**, followed closely by **Delta** which grew at **+5.2%**. **American** grew merely at **+0.8%** and dropped by 1 position to the **3rd**. **Southwest** went up one position to **11th**, albeit with a decline of **-1.0%**.

Emirates dropped one position to **7th** with a growth of **+2.2%**. **Qatar Airways** recorded the fastest growth among the Top 15 with an increase of **+17.7%** while remained at **13th**.

Lufthansa and **AF-KLM** maintained their positions at **4th** and **5th** while growing modestly at **+2.8%** and **+1.6%**, respectively. **IAG** grew at **+4.8%** and went up one position to **6th**. **Ryanair** posted a relatively slower pace compared to the previous month at **+5.0%** and dropped by one position to **12th**. **Turkish Airlines** recorded a solid growth at **+7.1%** and remained at **14th**.

China Southern, **Air China** and **China Eastern** retained their position of **8th**, **9th** and **10th** with growth of **+7.8%**, **+2.9%** and **+7.9%**, respectively. **Singapore Airlines** recorded the second highest growth among the Top 15 and ranked **15th**.

OCT 19

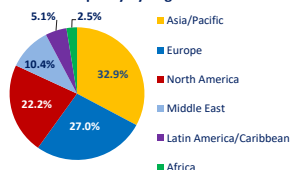|	RPK (billion)	YoY	% Share of World Total	Cumulative % Share
United[1]	32.1	2.9%	4.6%	4.6%
Delta	31.8	5.2%	4.6%	9.2%
American[1]	31.6	0.8%	4.6%	13.8%
Lufthansa Group[2]	26.5	2.8%	3.8%	17.6%
AF-KLM	25.2	1.6%	3.6%	21.3%
IAG[3]	25.0	4.8%	3.6%	24.9%
Emirates	24.9	2.2%	3.6%	28.5%
China Southern	24.4	7.8%	3.5%	32.0%
Air China	19.7	2.9%	2.8%	34.9%
China Eastern	18.7	7.9%	2.7%	37.6%
Southwest[1]	18.0	-1.0%	2.6%	40.2%
Ryanair[1]	17.0	5.0%	2.5%	42.6%
Qatar Airways	14.1	17.7%	2.0%	44.7%
Turkish Airlines	13.9	7.1%	2.0%	46.7%
Singapore Airlines Group	12.6	8.7%	1.8%	48.5%
Top 15 Total RPKs	**335 billion**	**4.3%**	**48.5%**	
World Total RPKs	**691 billion**	**3.4%**	**100.0%**	

(Source: ICAO, airlines' websites)

Note: Total scheduled and non-scheduled services

CAPACITY BY REGION *(ICAO Statistical Regions)*

OCT 2019: +2.2% YoY in terms of World ASK

% Share of Capacity by Region

- 5.1%
- 2.5%
- 10.4%
- 22.2%
- 27.0%
- 32.9%

- Asia/Pacific — 32.9%
- Europe — 27.0%
- North America — 22.2%
- Middle East — 10.4%
- Latin America/Caribbean — 5.1%
- Africa — 2.5%

(Source: ICAO, IATA, OAG)

Note: Total scheduled services

North America: +2.9% YoY, +2.6% YTD
Europe: +2.3% YoY, +4.6% YTD
Middle East: +0.3% YoY, +0.6% YTD
Asia and Pacific: +2.9% YoY, +4.8% YTD
Africa: +5.3% YoY, +4.3% YTD
Latin America and the Caribbean: +1.4% YoY, +3.1% YTD
World: +2.2% YoY, +3.8% YTD

Worldwide capacity expanded by **+2.2%** YoY in October 2019. Three regions recorded acceleration in capacity expansion while notable slowdown was posted by **Asia/Pacific** followed by **Europe**, resulting in the overall deceleration of the world total capacity.

Africa became the fastest expanding region. For the second consecutive time, the **Middle East** was the slowest growing region.

* Embarked Passengers ** Loaded and Unloaded Freight in Tonnes 1. ICAO estimates 2. Lufthansa Airlines, Eurowings, SWISS, Austrian Airlines, Brussels Airlines, Sun Express, and Lufthansa Cargo 3. British Airways, Aer Lingus, Iberia, and Vueling

ACRONYMS: **ACI:** Airports Council International; **ASK:** Available Seat-Kilometres; **IATA:** International Air Transport Association; **FTK:** Freight Tonne-Kilometres; **LF:** Passenger Load Factor; **OAG:** Official Airline Guide; **RPK:** Revenue Passenger-Kilometres; **UNWTO:** World Tourism Organization; **YoY:** Year-on-year; **YTD:** Year-to-date.

ECONOMIC DEVELOPMENT
DEC 2019: Air Transport Monthly Monitor

ICAO

World Results and Analyses. Total scheduled services
(Domestic and international)

http://www.icao.int/sustainability/Pages/Air-Traffic-Monitor.aspx

Air Transport Bureau
E-mail: ecd@icao.int

GLOBAL KEY FIGURES	NOV 2019 *(versus NOV 2018)*	OUTLOOK* - DEC 2019 *(versus DEC 2018)*
	RPK ▲ +3.3% ASK ▲ +1.8% FTK ▼ -1.1% LF: 81.1% ▼ -0.9 pt	ASK ▲ +3.2% * Source OAG

PASSENGER TRAFFIC

Revenue Passenger-Kilometres - RPK

World passenger traffic grew by +3.3% YoY in November 2019, -0.1 percentage point lower than the growth in the previous month. Three regions posted a slowdown with Europe experiencing the most significant deceleration becoming the weakest performing region. The Middle East continued to show acceleration and remained as the fastest-growing region. Domestic traffic in India picked up sharply and regained double-digit growth, followed by relatively moderate increases in China and Japan.
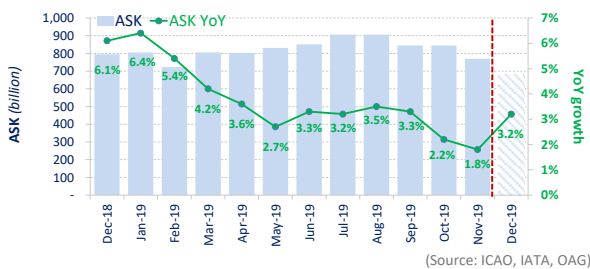

(Source: ICAO, IATA, OAG)

International Traffic vs. Tourist Arrivals

International passenger traffic grew by +3.1% YoY in November 2019, -0.1 percentage point lower than the growth in the previous month. The Middle East recorded the strongest growth and remained as the fastest-growing region. By contrast, traffic growth in Latin America/Caribbean further deteriorated and continued to be the only region with contraction.

The growth of international tourist arrivals* remained relatively stable.

*UNWTO Definition

(Source: IATA, UNWTO)

CAPACITY

Available Seat-Kilometres - ASK

Capacity worldwide increased by +1.8% YoY in November 2019, - 0.4 percentage point lower than the growth in the previous month (+2.2%).
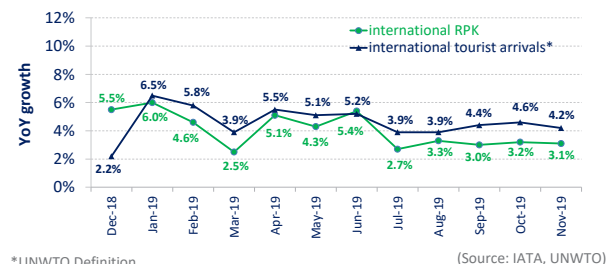
According to the airline schedules, capacity expansion is expected to be up to +3.2% in December 2019.

(Source: ICAO, IATA, OAG)

Load Factor - LF

The passenger Load Factor reached 81.1% in November 2019, -0.9 percentage point lower than the previous month.

As traffic growth outpaced the capacity expansion, the November LF was +1.1 percentage point higher compared to the rate in the same period of 2018.
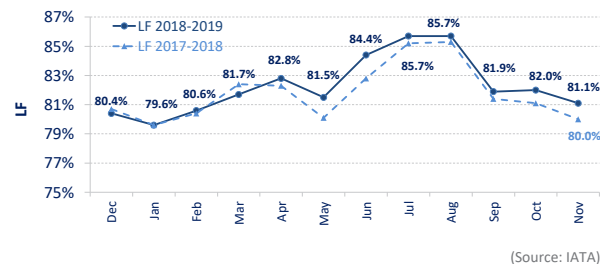
(Source: IATA)

FREIGHT TRAFFIC

Freight Tonne-Kilometres - FTK

World freight traffic reported a decline of -1.1% YoY in November 2019, +2.4 percentage points higher than the growth in the previous month. Although freight traffic growth remained negative, this was by far the smallest deficit in the last eight months. This modest improvement may be owing to the seasonally busy e-commerce sales events such as Black Friday. On a regional basis, Africa remained as the major contributor to the improvement with its brisk double-digit growth. Another contribution came from Europe which rebounded to positive growth. All the other regions continued to post declines with Asia/Pacific being the weakest performing region accounting largely for the overall decline.
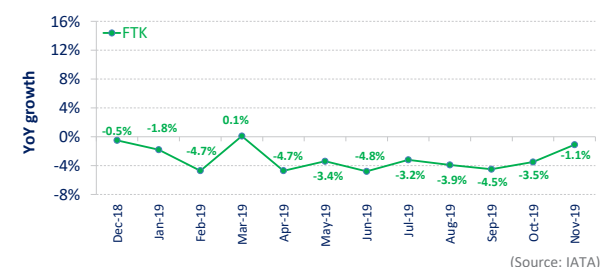
(Source: IATA)

ACRONYMS: **ACI:** Airports Council International; **ASK:** Available Seat-Kilometres; **IATA:** International Air Transport Association; **FTK:** Freight Tonne-Kilometres; **LF:** Passenger Load Factor; **OAG:** Official Airline Guide; **RPK:** Revenue Passenger-Kilometres; **UNWTO:** World Tourism Organization; **YoY:** Year-on-year; **YTD:** Year-to-date.

STATISTICS

ECONOMIC DEVELOPMENT
ICAO | DEC 2019: Air Transport Monthly Monitor
World Results and Analyses. Total scheduled services
(Domestic and international)

TOP 15 AIRPORTS (Ranked by aircraft departures, passengers and volume of freight)

NOV 2019: +1.2%, +1.8%, and -2.3% YoY in terms of aircraft departures, passengers and freight for the Top 15

NOV 19

Airports (ranking by number of departures)	Departures	YoY	Airports (ranking by number of passengers)	Passengers*	YoY	Airports (ranking by tonnes of freight)	Freight**	YoY
Chicago IL, US (ORD)	37,638	▲ 3.1%	Atlanta GA, US (ATL)	4,349,769	▼ -2.3%	Hong Kong, CN (HKG)	440,000	▼ -3.4%
Atlanta GA, US (ATL)	35,508	▼ -1.3%	Beijing, CN (PEK)	4,019,993	▼ -2.8%	Memphis TN, US (MEM)	354,818	▼ -6.1%
Dallas/Fort Worth TX, US (DFW)	29,730	▲ 8.9%	Tokyo, JP (HND)	3,628,726	▼ -5.0%	Shanghai, CN (PVG)	337,910	▲ 8.2%
Los Angeles CA, US (LAX)	27,298	▼ -3.6%	Dubai, AE (DXB)	3,523,525	▲ 2.2%	Anchorage AK, US (ANC)	252,198	▼ -0.7%
Denver CO, US (DEN)	25,171	▲ 4.3%	Los Angeles CA, US (LAX)	3,365,760	▼ -3.1%	Incheon, KR (ICN)	243,168	▼ -3.7%
Beijing, CN (PEK)	24,417	▼ -4.9%	Chicago IL, US (ORD)	3,295,038	▲ 0.2%	Louisville KY, US (SDF)	225,191	▲ 1.1%
Charlotte NC, US (CLT)	23,943	▲ 3.9%	New Delhi, IN (DEL)	3,163,880	▲ 12.9%	Dubai, AE (DXB)	219,836	▼ -7.3%
Shanghai, CN (PVG)	20,699	▲ 2.0%	London, GB (LHR)	3,117,099	▲ 2.0%	Doha, QA (DOH)	198,262	▲ 5.5%
New Delhi, IN (DEL)	20,689	▲ 7.0%	Guangzhou, CN (CAN)	3,106,592	▲ 6.3%	Taipei, CN (TPE)	198,115	▼ -0.6%
Guangzhou, CN (CAN)	20,650	▲ 3.6%	Dallas/Fort Worth TX, US (DFW)	3,000,538	▲ 7.1%	Tokyo, JP (NRT)	190,095	▲ 4.0%
Houston TX, US (IAH)	19,908	▲ 3.2%	Shanghai, CN (PVG)	2,977,658	▲ 3.1%	Singapore, SG (SIN)	177,500	▼ -6.2%
Amsterdam, NL (AMS)	19,661	▼ -1.5%	Singapore, SG (SIN)	2,859,000	▲ 5.7%	Frankfurt, DE (FRA)	175,873	▼ -5.4%
Frankfurt, DE (FRA)	19,395	▼ -5.8%	Paris, FR (CDG)	2,831,173	▲ 3.3%	Miami FL, US (MIA)	175,071	▼ -9.0%
Paris, FR (CDG)	19,200	▼ -0.4%	Incheon, KR (ICN)	2,786,594	▲ 0.6%	Beijing, CN (PEK)	173,358	▼ -5.0%
London, GB (LHR)	19,050	▼ -0.3%	Bangkok, TH (BKK)	2,769,681	▲ 5.2%	Los Angeles CA, US (LAX)	171,277	▼ -7.5%

Note: Total scheduled and non-scheduled services

(Source: ACI)

In terms of **aircraft departures**, the Top 15 airports reported a growth of +1.2% YoY. Eight out of the Top 15 airports posted YoY increases. **Chicago** ranked **1st** with a modest growth of +3.1%. The strongest growth in operations was recorded by **Dallas/Fort Worth** at +8.9%, followed by **New Delhi** at +7.0%.

In terms of **passengers**, the Top 15 airports reported a growth of +1.8% YoY. Eleven out of the Top 15 airports posted YoY increases. **Atlanta** remained at **1st**, albeit with a decline of -2.3% . **New Delhi** recorded the most significant growth at +12.9%. Decline was observed in major hubs in Asia/Pacific and North America with **Tokyo** contracting the most by -5.0%.

In terms of **freight**, the Top 15 airports reported a decline of -3.5% YoY. Freight traffic remained weak with over half of the Top 15 airports posting declines. **Shanghai**, at **3rd** position, reported the highest growth of +8.2%, followed by **Doha** and **Tokyo** at +5.5% and +4.0%, respectively. The most notable decrease was posted by **Miami** at -9.0%, followed by **Los Angeles** at -7.5%.

TOP 15 AIRLINE GROUPS (Ranked by RPK)

NOV 2019: +4.9% YoY in terms of RPK for the Top 15

In terms of RPK, the Top 15 airline groups accounted for 49.2% of the world's total RPK in November 2019 and grew by +4.9% YoY. This growth was +1.6 percentage points higher than the world's average on scheduled services. All the Top 15 airline groups posted YoY growth except for a decline in Southwest.

United ranked **1st** with moderate growth of +3.2%, followed closely by **American** which grew by +3.0% and elevated 1 position to the **2nd**. **Delta** dropped 1 position to the **3rd** and grew marginally by +1.8%. **Southwest** decreased by -2.4% while remained at **11th**.

Emirates went up 3 positions to **4th** with a growth of +4.6%. **Qatar Airways** recorded the fastest growth among the Top 15 at +20.3% and was up 1 position to **12th**.

AF-KLM rose by +3.5% and maintained its position at **5th** growing. With a modest increase of +1.3%. **Lufthansa** dropped 4 positions to **8th**. **IAG** grew at +4.9% and dropped 1 position to **7th**. **Ryanair** grew at the same pace of +5.0% as in the previous month and dropped 1 position to **13th**. **Turkish Airlines** recorded a relatively strong growth of +8.7%, however, descended to **15th**.

China Southern ascended 2 positions to **6th** and grew solidly at +8.5%. **Air China** and **China Eastern** dropped 1 position to **9th** and **10th** and grew by +4.9% and +10.8%, respectively. **Singapore Airlines** grew by 8.3% and ranked **14th**.

NOV 19

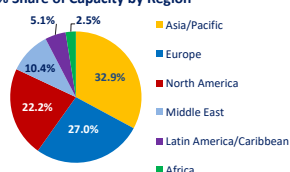| Airline	RPK (billion)	YoY	% Share of World Total	Cumulative % Share
United[1]	30.2	▲ 3.2%	4.9%	4.9%
American[1]	29.0	▲ 3.0%	4.7%	9.5%
Delta	27.6	▲ 1.8%	4.4%	14.0%
Emirates	23.6	▲ 4.6%	3.8%	17.8%
AF-KLM	23.3	▲ 3.5%	3.7%	21.5%
China Southern	23.0	▲ 8.5%	3.7%	25.2%
IAG[2]	21.8	▲ 4.9%	3.5%	28.7%
Lufthansa Group[3]	21.5	▲ 1.3%	3.5%	32.2%
Air China	18.7	▲ 4.9%	3.0%	35.2%
China Eastern	18.1	▲ 10.8%	2.9%	38.1%
Southwest[1]	17.8	▼ -2.4%	2.9%	40.9%
Qatar Airways	13.3	▲ 20.3%	2.1%	43.1%
Ryanair[1]	13.3	▲ 5.0%	2.1%	45.2%
Singapore Airlines Group	12.6	▲ 8.3%	2.0%	47.2%
Turkish Airlines	12.3	▲ 8.7%	2.0%	49.2%
Top 15 Total RPKs	**306 billion**	▲ 4.9%	49.2%	
World Total RPKs	**622 billion**	▲ 3.3%	100.0%	

(Source: ICAO, airlines' websites)

Note: Total scheduled and non-scheduled services

CAPACITY BY REGION *(ICAO Statistical Regions)*

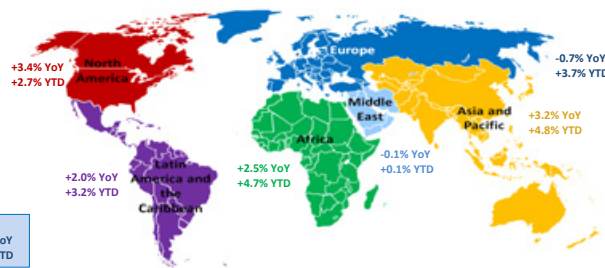**NOV 2019:** +1.8% YoY in terms of World ASK

% Share of Capacity by Region

- 32.9% Asia/Pacific
- 27.0% Europe
- 22.2% North America
- 10.4% Middle East
- 5.1% Latin America/Caribbean
- 2.5% Africa

(Source: ICAO, IATA, OAG)
Note: Total scheduled services

World: +1.8% YoY / +3.5% YTD

North America: +3.4% YoY / +2.7% YTD
Europe: -0.7% YoY / +3.7% YTD
Middle East: -0.1% YoY / +0.1% YTD
Asia and Pacific: +3.2% YoY / +4.8% YTD
Africa: +2.5% YoY / +4.7% YTD
Latin America and the Caribbean: +2.0% YoY / +3.2% YTD

Worldwide capacity expansion eased to its slowest pace of the year at +1.8% YoY in November 2019. The overall slowdown was attributed to the deceleration in Africa, Europe and the Middle East, with the latter two regions posting YoY decline in capacity expansion. **North America** became the fastest expanding region followed closely by **Asia/Pacific**.

On YTD basis, Asia/Pacific and Africa were the fastest expanding regions.

* Embarked Passengers ** Loaded and Unloaded Freight in Tonnes 1. ICAO estimates 2. British Airways, Aer Lingus, Iberia, and Vueling 3. Lufthansa Airlines, Eurowings, SWISS, Austrian Airlines, Brussels Airlines, Sun Express, and Lufthansa Cargo

ACRONYMS: **ACI:** Airports Council International; **ASK:** Available Seat-Kilometres; **IATA:** International Air Transport Association; **FTK:** Freight Tonne-Kilometres; **LF:** Passenger Load Factor; **OAG:** Official Airline Guide; **RPK:** Revenue Passenger-Kilometres; **UNWTO:** World Tourism Organization; **YoY:** Year-on-year; **YTD:** Year-to-date.

ECONOMIC DEVELOPMENT
JAN 2020: Air Transport Monthly Monitor
World Results and Analyses. Total scheduled services
(Domestic and international)

ICAO

Air Transport Bureau
E-mail: ecd@icao.int

http://www.icao.int/sustainability/Pages/Air-Traffic-Monitor.aspx

GLOBAL KEY FIGURES	DEC 2019 *(versus DEC 2018)*	OUTLOOK* - JAN 2020 *(versus JAN 2019)*
	RPK ▲ +4.5% ASK ▲ +2.1% FTK ▼ -2.7% LF: 82.3% ▲ +1.2 pt	ASK ▲ +3.0% * Source OAG

PASSENGER TRAFFIC

Revenue Passenger-Kilometres - RPK

World passenger traffic grew by +4.5% YoY in December 2019, +1.2 percentage points higher than the growth in the previous month. This elevation was attributed to the acceleration in three regions, Africa, Europe and North America. Strong performance was observed in the United States owing to the later timing of the Thanksgiving holidays which contributed to traffic increase, especially the domestic traffic at the beginning of December. The other major domestic markets, however, experienced modest growth.
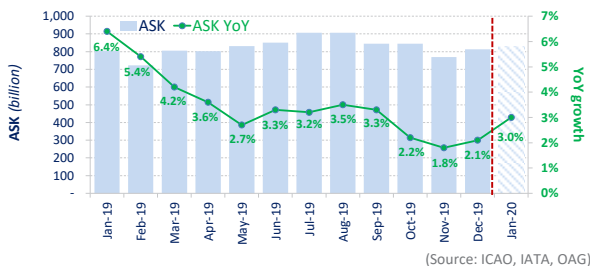

(Source: ICAO, IATA, OAG)

International Traffic vs. Tourist Arrivals

International passenger traffic grew by +3.8% YoY in December 2019, +0.7 percentage point higher than the growth in the previous month. The Middle East remained as the strongest performing region despite a slowdown. Improvements were demonstrated in Africa, Europe and North America. Being the only region with negative growth, traffic of Latin America/Caribbean further deteriorated.

The growth of international tourist arrivals* remained relatively stable.

*UNWTO Definition

(Source: IATA, UNWTO)

CAPACITY

Available Seat-Kilometres - ASK

Capacity worldwide increased by +2.1% YoY in December 2019, +0.3 percentage point higher than the growth in the previous month (+1.8%).
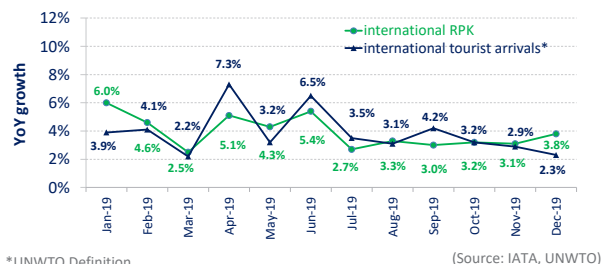
According to the airline schedules, capacity expansion is expected to be up to +3.0% in January 2020.

(Source: ICAO, IATA, OAG)

Load Factor - LF

The passenger Load Factor reached 82.3% in December 2019, +1.2 percentage points higher than the previous month.

As traffic growth outpaced the capacity expansion, the December LF was +1.9 percentage points higher compared to the rate in the same period of 2018.
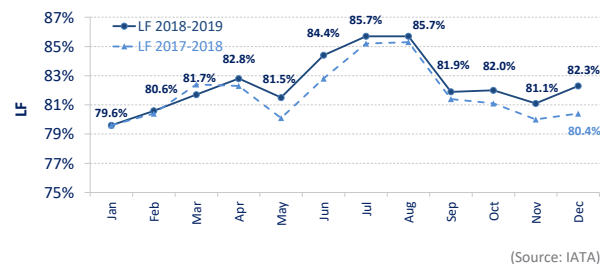

(Source: IATA)

FREIGHT TRAFFIC

Freight Tonne-Kilometres - FTK

World freight traffic reported a decline of -2.7% YoY in December 2019, -1.6 percentage points lower than the growth in the previous month. Freight demand continued to be low impacted by the weak global trade. All regions experienced a negative growth except for Africa which maintained its double-digit growth and remained as the fastest-growing region. This solid growth, however, could not offset the fall in other regions which accounted for around 98% of the total freight traffic. Latin America/Caribbean recorded the weakest performance.

The overall annual freight traffic in 2019 contracted by -3.3% compared to 2018, first time since 2012.
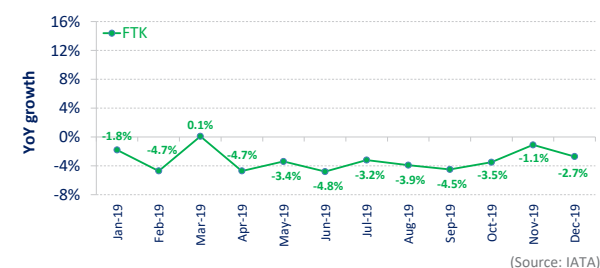
(Source: IATA)

ACRONYMS: **ACI:** Airports Council International; **ASK:** Available Seat-Kilometres; **IATA:** International Air Transport Association; **FTK:** Freight Tonne-Kilometres; **LF:** Passenger Load Factor; **OAG:** Official Airline Guide; **RPK:** Revenue Passenger-Kilometres; **UNWTO:** World Tourism Organization; **YoY:** Year-on-year; **YTD:** Year-to-date.

ECONOMIC DEVELOPMENT
JAN 2020: Air Transport Monthly Monitor
World Results and Analyses. Total scheduled services (Domestic and international)

DEC 19

TOP 15 AIRPORTS (Ranked by aircraft departures, passengers and volume of freight)

DEC 2019: +2.8%, +2.7%, and +0.2% YoY in terms of aircraft departures, passengers and freight for the Top 15

Airports (ranking by number of departures)	Departures		YoY	Airports (ranking by number of passengers)	Passengers*		YoY	Airports (ranking by tonnes of freight)	Freight**		YoY
Chicago IL, US (ORD)	38,644	⬆	1.3%	Atlanta GA, US (ATL)	4,547,414	⬆	5.2%	Hong Kong, CN (HKG)	433,000	⬇	-1.2%
Atlanta GA, US (ATL)	37,082	⬆	2.0%	Beijing, CN (PEK)	4,075,729	⬇	-2.5%	Shanghai, CN (PVG)	356,614	⬆	13.1%
Dallas/Fort Worth TX, US (DFW)	30,732	⬆	11.1%	Dubai, AE (DXB)	3,857,994	⬇	-0.1%	Memphis TN, US (MEM)	349,452	⬇	-3.3%
Los Angeles CA, US (LAX)	29,422	⬇	-0.2%	Los Angeles CA, US (LAX)	3,739,209	⬆	3.8%	Louisville KY, US (SDF)	292,638	⬆	8.5%
Denver CO, US (DEN)	26,961	⬆	9.2%	Tokyo, JP (HND)	3,445,140	⬇	-2.7%	Incheon, KR (ICN)	230,311	⬇	-2.2%
Beijing, CN (PEK)	24,903	⬇	-5.1%	London, GB (LHR)	3,348,040	⬆	3.1%	Anchorage AK, US (ANC)	227,937	⬇	-4.9%
Charlotte NC, US (CLT)	24,507	⬆	10.0%	Chicago IL, US (ORD)	3,301,770	⬆	0.8%	Dubai, AE (DXB)	219,116	⬇	-6.5%
Guangzhou, CN (CAN)	21,123	⬆	2.5%	Singapore, SG (SIN)	3,207,500	⬆	4.7%	Taipei, CN (TPE)	202,598	⬆	1.8%
Shanghai, CN (PVG)	21,072	⬇	-1.7%	Dallas/Fort Worth TX, US (DFW)	3,197,114	⬆	13.8%	Doha, QA (DOH)	195,102	⬆	5.6%
New Delhi, IN (DEL)	20,831	⬆	1.6%	Guangzhou, CN (CAN)	3,156,286	⬆	5.4%	Tokyo, JP (NRT)	181,583	⬆	4.6%
Houston TX, US (IAH)	20,628	⬆	2.4%	New Delhi, IN (DEL)	3,154,265	⬆	3.6%	Beijing, CN (PEK)	175,831	⬇	-4.3%
Mexico City, MX (MEX)	20,099	⬆	4.8%	Incheon, KR (ICN)	3,048,344	⬆	3.1%	Singapore, SG (SIN)	174,700	⬇	-3.8%
Amsterdam, NL (AMS)	19,890	⬆	0.7%	Bangkok, TH (BKK)	3,015,369	⬆	2.1%	Miami FL, US (MIA)	170,304	⬇	-7.9%
Phoenix AZ, US (PHX)	19,841	⬆	5.3%	Shanghai, CN (PVG)	3,000,939	⬇	-0.3%	Guangzhou, CN (CAN)	168,622	⬆	5.4%
Paris, FR (CDG)	19,428	⬇	-1.4%	Kuala Lumpur, MY (KUL)	2,965,446	⬆	4.2%	Los Angeles CA, US (LAX)	167,806	⬇	-5.1%

Note: Total scheduled and non-scheduled services

(Source: ACI)

In terms of **aircraft departures**, the Top 15 airports reported a growth of +2.8% YoY. Eleven out of the Top 15 airports posted YoY increases. A strong performance was observed by airports in the United States. **Chicago** remained at **1st**, albeit with a marginal growth of **+1.3%**, whereas, **Dallas/Fort Worth** recorded the highest growth at **+11.1%**.

In terms of **passengers**, the Top 15 airports reported a growth of +2.7% YoY. Eleven out of the Top 15 airports posted YoY increases. **Atlanta** remained at **1st** with a modest growth of **5.2%**. Decline was observed in major hubs including **Beijing** and **Tokyo**, contracting by **-2.5** and **-2.7%**, respectively. **Dallas/Fort Worth** recorded the most significant growth at **+13.8%.**

In terms of **freight**, the Top 15 airports reported a growth of +0.2% YoY. Freight traffic remained weak as most of the Top 15 airports posted declines. **Miami** recorded the largest fall by **-7.9%**, followed by **Dubai** at **-6.5%**. Six airports contributed positively to freight traffic with **Shanghai** recording the highest growth at **+13.1%** followed by **Louisville** at **+8.5%**.

TOP 15 AIRLINE GROUPS (Ranked by RPK)

DEC 2019: +5.3% YoY in terms of RPK for the Top 15

In terms of RPK, the Top 15 airline groups accounted for 48.2% of the world's total RPK in December 2019 and grew by +5.3% YoY. This growth was +0.8 percentage point higher than the world's average on scheduled services. All the Top 15 airline groups posted YoY growth.

United ranked **1st** with moderate growth of **+3.7%**, followed by **American** which grew by **+3.5%** and remained at **2nd**. **Delta** grew by **+4.9%** and maintained its **3rd** position. **Southwest** increased modestly by **+1.5%** while remained at **11th**.

Emirates remained at **4th** with a marginal growth of **+1.0%**. **Qatar Airways** recorded the fastest growth among the Top 15 airlines at **+19.3%** and retained its **12th** position.

AF-KLM rose by **+3.5%** while dropped by 1 position to the **6th**. **IAG** recorded a solid growth of **+6.4%**, albeit remained at **7th**, followed by **Lufthansa** rising at **+3.3%**. Both **Ryanair** and **Turkish Airlines** posted stronger growth at **+7.7%** and **+8.1%**, and maintained their position at **13th** and **15th**, respectively.

China Southern improved 1 position to **5th** with an increase of **+7.0%**. **Air China** and **China Eastern** retained their **9th** and **10th** position and grew by **+5.0%** and **+7.1%**, respectively. **Singapore Airlines** grew by **7.9%** and remained at **14th.**

DEC 19

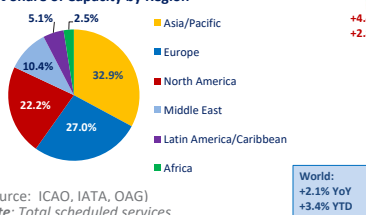|	RPK (billion)	YoY	% Share of World Total	Cumulative % Share
United[1]	32.2	⬆ 3.7%	4.8%	4.8%
American[1]	30.6	⬆ 3.5%	4.6%	9.4%
Delta[1]	29.7	⬆ 4.9%	4.5%	13.9%
Emirates[1]	26.3	⬆ 1.0%	3.9%	17.8%
China Southern	23.6	⬆ 7.0%	3.5%	21.4%
AF-KLM	23.3	⬆ 3.5%	3.5%	24.9%
IAG[2]	22.4	⬆ 6.4%	3.4%	28.2%
Lufthansa Group[3]	21.5	⬆ 3.3%	3.2%	31.5%
Air China	19.3	⬆ 5.0%	2.9%	34.4%
China Eastern	18.2	⬆ 7.1%	2.7%	37.1%
Southwest[1]	18.1	⬆ 1.5%	2.7%	39.8%
Qatar Airways	15.2	⬆ 19.3%	2.3%	42.1%
Ryanair[1]	14.4	⬆ 7.7%	2.2%	44.3%
Singapore Airlines Group	13.8	⬆ 7.9%	2.1%	46.3%
Turkish Airlines	12.5	⬆ 8.1%	1.9%	48.2%
Top 15 Total RPKs	**321** billion	⬆ 5.3%	48.2%	
World Total RPKs	**666** billion	⬆ 4.5%	100.0%	

(Source: ICAO, airlines' websites)

Note: Total scheduled and non-scheduled services

CAPACITY BY REGION (ICAO Statistical Regions)

DEC 2019: +2.1% YoY in terms of World ASK

% Share of Capacity by Region

- 5.1%
- 2.5%
- 32.9% Asia/Pacific
- 27.0% Europe
- 22.2% North America
- 10.4% Middle East
- Latin America/Caribbean
- Africa

(Source: ICAO, IATA, OAG)
Note: Total scheduled services

North America: +4.4% YoY / +2.8% YTD
Europe: +0.5% YoY / +3.6% YTD
Asia and Pacific: +2.5% YoY / +4.5% YTD
Middle East: -0.4% YoY / +0.1% YTD
Africa: +5.1% YoY / +4.7% YTD
Latin America and the Caribbean: +0.8% YoY / +2.9% YTD
World: +2.1% YoY / +3.4% YTD

Worldwide capacity expansion grew by +2.1% YoY in December 2019. Three regions, Africa, Europe and North America, accelerated capacity expansion with **Africa** remaining as the fastest expanding region, albeit at a modest pace. The other regions posted a slowdown in growth with **the Middle East** being the only region with contraction.

Overall annual capacity in 2019 increased by **+3.4%**, slowed to almost half of the pace in 2018.

* Embarked Passengers ** Loaded and Unloaded Freight in Tonnes   1. ICAO estimates 2. British Airways, Aer Lingus, Iberia, and Vueling   3. Lufthansa Airlines, Eurowings, SWISS, Austrian Airlines, Brussels Airlines, Sun Express, and Lufthansa Cargo

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