

**Up, up and away**

# **Aktuelles aus der Luftfahrt 2024**



**Rotary Club RC Melk**

**April 02, 2024 at 19.30 hrs**

**Melk Hotel Post**

**PP Prof. KR Mario Rehulka, RC Wien-Hofburg**

# Rotary Club Wien-Hofburg



**Freundschaft erleben – Bildung ermöglichen**

**Gegründet 20.02.1987**

**Sitz Hotel Bristol Wien**

**Mitglieder: 89 (m+w)**

**Clubmeetings jeweils donnerstags (mittags bzw. abends)**

## **Global Grant Projekte:**

- **2005-2006 Dubasari/Moldova-Transnistria**

**Matching Grant for 50 disabled children**

- **2013-2018 Global Grant Kiruru-Tanzania**

**WaSH-Project with 120m Borehole/Pipes/Water Storage/Toilettes**

**GG 1639013**

- **2020 – 2025 Global Grant Kisii-Area-Kenya**

**WaSH-Project for 32 schools and 50 Health Care Stations-13.000 scholars**

**GG 2098060**

# The Aviation Industry 2024

## RC Melk

- 1. Crisis Scenarios*
- 2. World & Behavior Changes*
- 3. The Global Aviation Industry Data*
- 4. Future Aspects of Aviation*
- 5. Austrian Aviation*

- Attachments: Basic Aviation 2024
- Eurocontrol European Aviation Overview MAR 2024

# **1. Crisis Scenarios**

**(Covid Pandemia –  
Ukraine – Gaza)**



# Aktuell 29.-30. März 2024: Streik der Gewerkschaft

Angebot OS-Management:				
plus 18 Prozent für Flugbegleiter und Piloten				
plus 28 Prozent für Co-Piloten				
Forderung vida:				
Angleichung der Gehälter auf da LH-Niveau				
für leitende Flugbegleiter (Purser 1) Erhöhung Brutto-Gehalt zwischen 16,94 % und 27,28 %				
für Flugbegleiter Erhöhung Brutto-Gehalt zwischen 19,40 % und 26,04 %				
für Co-Piloten Erhöhung zwischen 37,20 % und 49,48 % von € 68.500 brutto auf 99.800				
für Co-Piloten mit 29 Dienstjahren von € 112.400 brutto auf 161.900				
für Piloten mit 29 Dienstjahren von € 191.900 brutto auf 240.000				
Bord-Mitarbeiter mit 50 nach 20 Dienstjahren "nur auf freiwilliger Basis zu Überstunden eingeteilt"				
Bord-Mitarbeiter ab dem 25. Dienstjahr Anspruch auf Sonderurlaub zwischen 4 und 8 Tagen				
Bei Lizenzverlust (Krankheit/unverschuldet) zusätzlich zu Abfertigung 30/36/39 Monatsbezüge!!!				
Auswahl bei Crew-Hotels Mitsprache(Mahlzeiten/Einrichtung/2 Stunden entfernt/Lage)				

**„Streik der Millionäre“**

**„Auf dem Rücken von 50.000 Passagieren“**

**„Sie sägen am eigenen Ast – Ersatz ist schon da“**

**„Es gibt günstigere Airlines im Rahmen der LH-Allianz“**

**„Es hat keiner in der Pandemie seinen Job verloren“**

**„Von 13.707 Euro 14mal monatlich hinauf (Piloten)“**

**„... bei 75 monatlichen Flugstunden (aus Sicherheitsgründen)“**

**„Gewerkschaftliche Geiselhaft“**

**„Gewerkschaftsboss hat bisher noch kein Ticket selbst verkauft“**

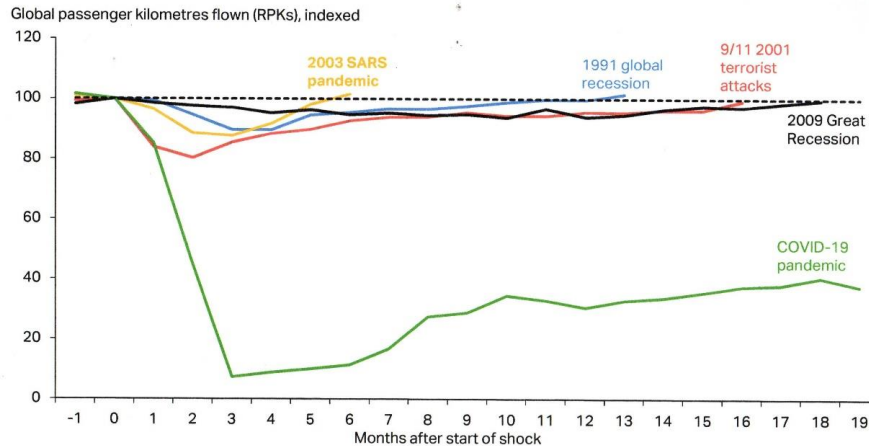
**„Vergleich LH-OS wie Äpfel mit Birnen“**

**„Bei Annahme Wandel zu Regional-Fluglinie“**

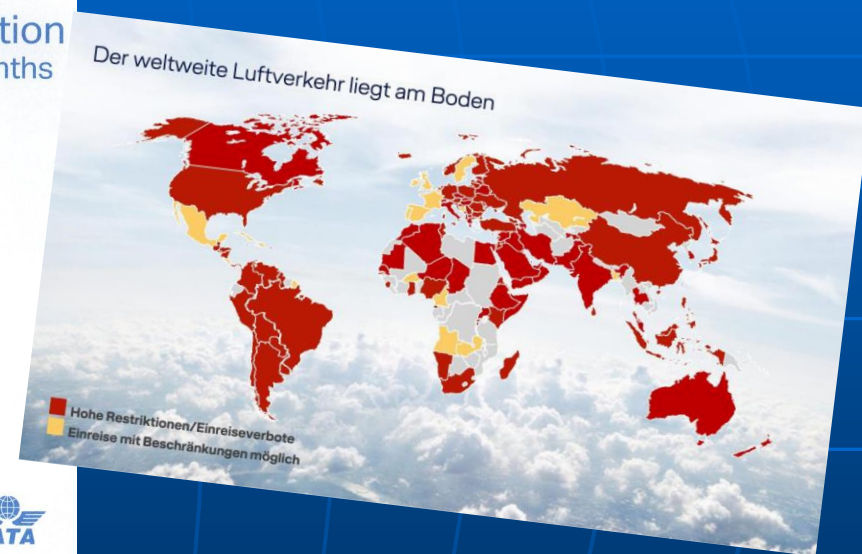
# Covid 19 - Biggest Unprecedented Shock to hit Aviation since WW2 - Suddenly the World changed

Since January 2020 (to end 2023) 48 month vs. 6-18 months

COVID-19 is the biggest and longest shock to hit aviation  
Previous shocks cut 5-20% from RPKs and recovered after 6-18 months



Source: IATA Economics using data from IATA Monthly Statistics. Data is adjusted for seasonality.



- ***All of a sudden we found strengthes and weaknesses***
- ***We all recognised global dependancies (esp. in trade and tourism)***

# The Covid 19 Effects 2020

Global Passengers  
per year  
per day

End of 2019 **reduced by %**

4,54 bn.  
12,9 mio.

**61 %**

Operations/Flights  
per year  
per day

38,9 mio flights  
107.000 flights

**58 %**

Airline Revenues  
per year

838 bn. USD

**61 %**

Global Passengers  
per year  
per day

Operations/Flights  
per year  
per day

Airline Revenues  
per year

1,8 bn. pax  
4,9 mio. pax

16.4 mio. flights  
44.900 flights

328 bn. USD

to end of 2020



2020:  
60 % of  
all  
Jet-  
aircraft  
grounded



# Aviation Horror Szenarios 2020-2022



## Decline in World Air Passengers

from 2019	4,5 bn.
2020 vs. 2019	- 60 % to 1,8 bn.
2021 vs. 2019	- 51% to 2,2 bn.
2022 vs. 2019	- 16 % to 3,8 bn.
2023 vs. 2019	- 4 % to 4,35 bn.

## Airline Industry lost US\$ 183,2 billion

(\$137,7 billion in 2020, a further US\$ 41,9 billion in 2021, adding 3,6 billion 2022),  
turning cash positive only in 2024.

The biggest factors impeding the industry's recovery are  
**travel restrictions and quarantine measures (COVID 19)**  
and **now geopolitical conflicts**  
that effectively prevent a meaningful revival of travel.



# Global Enterprices: Handling Crisis Situations

**Crisis Management** is the process by which an organization deals with a disruptive and unexpected event that threaten to harm the organization, its clients or its stakeholders



## **Ukraine Crisis:**

- **The EU-countries stopped all services** into and over the hardly hit area
- **Suspended Airline Alliance cooperations & partnerships** (Aeroflot codeshares with SkyTeam e.g. Delta Air Lines)
- **Irish-based aviation lessors were expected to terminate their leasing agreements** with Russian carriers. Firms have established taskforces to help them get their aircraft out of Russia and calculate the financial impact of impending sanctions.
- **Scheduled evacuation flights** out of Romania, Moldova and Hungary.
- **Leasing of aircraft:** stopped (400 aircraft a monthly leasing rate of 10 mio. USD)
- **Circumnavigation:** longer flights and costs
- **Higher insurance sums**
- **Inflationary Shock Commodity Markets:** Aluminum, copper, palladium, Nickel, Titanium
- **65% of the titanium** Airbus uses for their aircraft manufacturing has historically come from Russia – now they have liberated their titanium supply chain from the Russian Federation
- **800 of 1.287 aircraft in Russia** are involved
- **Turkey Ground Handling staff may stop servicing Russian Airlines' Boeing & Airbus Jets**

# Negative Geopolitical Impacts

## Ukraine Crisis



Since FEB 2022

**Belarus** (minus 5 weekly flights from Austria):  
Minsk

**Russian Federation** (minus 19 weekly flights) :  
Moscow, St. Petersburg, Rostov on Don

**Ukraine** (minus 14 weekly flights from Austria):  
Kiev, Kharkiv, Zaporizhzhia/Dnepro, Odesa, Lviv

**Circumnavigation:** Longer flights around territories  
and higher costs (2 hrs. more + insurance)

## Gaza Crisis

Flights to Tel Aviv were  
stopped since October  
2023 until January 08,  
2024:

Instead of **daily 4-5  
flights** by Austrian  
Airlines & El Al, as well  
as WizzAir and Ryanair.

- ***Flight stop***
- ***Circumnavigation***
- ***Higher Operating Costs***
- ***Higher Insurance Costs***
- ***Security & Safety Measures***



**2. The World  
& the Behavior  
changed**

# Aviation Shocks: Two-Thirds of the World's Passenger Jets were grounded

	2023	2020	2019
<b>Passengers</b> (billions)	<b>4,3 bn.</b>	<b>1,8 bn.</b>	<b>4,5 bn.</b>
<b>Daily</b> (millions)	<b>11,9 million</b>	<b>4,9 million</b>	<b>12,3 million</b>
<b>Flights</b> (millions)	<b>34,4 million</b>	<b>16,9 million</b>	<b>38,9million</b>
<b>Daily</b> (thousands)	<b>94.200 flights</b>	<b>46.300 flights</b>	<b>106.600 flights</b>
<b>Global Fleet</b> active	<b>28.000</b>	<b>12.000</b>	<b>31.000</b>
<b>Freight Tonnes</b> (millions)	<b>57,8 million</b>	<b>55,4 million</b>	<b>61,5 million</b>
<b>PLF</b> (%)	<b>80,9 %</b>	<b>65,2 %</b>	<b>82,6 %</b>
<b>Fuel</b> Consumption (bn. gallons)	<b>94 bn.</b>	<b>52 bn.</b>	<b>95 bn.</b>
<b>Profit-Loss</b> (in USD)	<b>+ 23,3 bn.</b>	<b>-137,7 bn.</b>	<b>+ 26,4 bn.</b>
<b>Op. EBIT Margin (%)</b>	<b>+ 4,5 %</b>	<b>-28,8 %</b>	<b>+ 5,2 %</b>



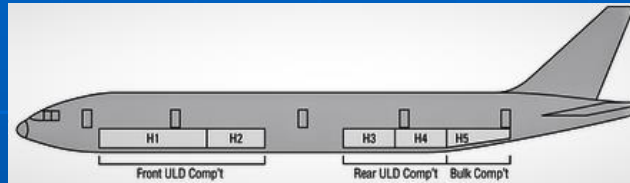
# What has changed?

- a) Ban of Outgoing (2021+2022)
- b) Travel Ban (til 2023 China)
- c) Health Restrictions
- d) Air Passenger amount reduced
- e) Capacity (aircraft) downsized - Outsourcing
- f) Routes downsized
- g) Business Life & Market changed
- h) Touristic market down – now needs catch-up
- i) Infrastructure perspectives
- j) Now view on economics
- k) Market behavior change
- l) Working balance hours change
- m) Personnel shortage (air-ground-production)
- n) Supply chains stabilization
- o) Education and Criticism enlarged
- p) Recovery orientated
- q) Quality – Safety - Security
- r) Sustainable development focused



# World Air Cargo lost only 11,5 % in 2020

– 50 % are lost Belly Capacities-  
13,1 % Cargo Boom since 2021-now Normalization

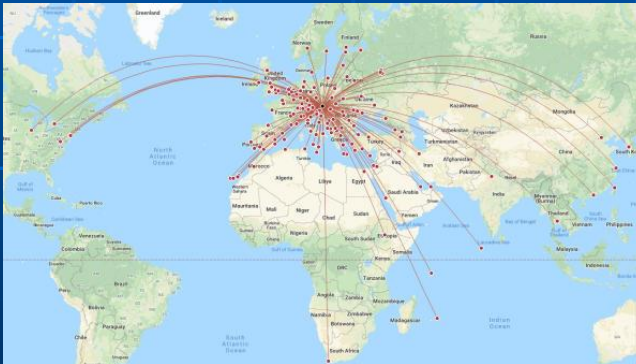


	2023	2022	2021	2020	2019
Freight tonnes, millions	57,8	60,2	65,7	55,4	61,5



# The National Economic Value of Austrian Airlines and the Hub Vienna Airport

- Vienna Airport (with Austrian Airlines) as **Hub** to Central-Eastern Europe & Middle East
- Guarantees **Connectivity** (also **long-haul services**)
- **Alliance Partner** network (Star)
- **Important for Tourism** and **Trade**/Export and Import
- Prevents exodus from Vienna of important **company headoffices (300)** for **CEE**
- **Job aspects** for 23.000 at the Vienna Airport



- OS contributes up to the GDP (BIP) 2,7 bn. Euros
- Protects 18.000 jobs directy and indirectly (OS itself 6.121)
- Adds 1 bn. Euros in Taxes and Dues

# Strategy Changes

## Current Aviation Industry Bottlenecks and its Reaction

Alternate Fuel Resources

Geopolitical  
Instabilities

**COVID-19**

**Tight Schedules**

**Supply Chains Volatility**

**Capacity Shortage**

**European Air Traffic Agreements**

**Aircraft Sizes-Availabilities**

**Staff Shortages (Space & Ground)**

**Differing seasonal Demand**  
(esp. Business Travel)

**Freak Weather Situations**

**Handling Speed-ups-**

**Aircraft & Engines** **Security Controls**

**Production & Control Certification**

**Infrastructures – Runways**  
**Terminals-Spaces**

**Global**  
**Economy**

**Sustainable  
Aviation Fuel  
(SAF)**

**Slots**

**Landing procedures**

**Airports-Collaborative Decision Making**

**Air Traffic Management – SESAR**

**Quality Control**

**Resources – Sustainable Development**

**New Technologies-Aircraft-  
Production Steering+Control**

**Financial Backgrounds**  
**– Strategic Grouping**

**Climate  
Change**

**Cyber Security**

**Strikes**

**Flight Shame-CORSIA**



**Downturn means:**

## Reduction of Quadjets

# A 380, B 747, A 340 Huge Capacities

*Four Engines – Fuel Reduction*

*Plane has to be filled largely*

*Business Travel reduced*

*Corporate Travel Restrictions*

*Video Conferencing*

*Travel Restrictions*

*Border Closures*

*Passenger Health Concerns*

*Lesser Household Incomes*

*Leisure Travel to well-known destinations only*



As time and technology move on, manufacturers such as Boeing and Airbus, and suppliers such as Rolls-Royce and Pratt & Whitney, find new ways to make aircraft more economical. This means more modern aircraft not only do less damage to the environment, but they are also cheaper to run.

Newer planes are equipped with the latest in passenger comforts.

The new Airbus **A321neos** use 15% less fuel compared to standard jets. With fuel costs rising, airlines are looking to cut fuel costs and emissions as much as possible.

## Production Stop:

### The A 380 2007-2022



- Superjumbo Airbus A 380 started service in 2007.
- 254 aircraft were produced til December 2021, for 16 operators worldwide.
- It's estimated that Airbus sunk 25 billion Euros into the project.
- Configurations: up to 825 seats (average 525 seats).
- Now 124 are undergoing repairs and maintenance, lie in storage or have been scrapped.
- Emirates (total 123 A 380 aircraft) retrofits them til begin 2024.

### The Jumbo B 747 1970-2022



- Introduction 1970 with PanAm als Clipper
- Variants Boeing 747SP, Boeing 747-400, Boeing 747-8, Boeing 747 Freighters
- Last aircraft to Atlas Air December 2022.
- 1.573 Jumbos were produced and delivered.
- Configurations: up to 467 seats.

# Downturn means:

## Aviation Bone-Yards



Elder aircraft are generally sent to aviation graveyards, otherwise known as boneyards. Here, they live out the rest of their days **being picked apart as parts** are taken and used elsewhere. Sometimes, a plane goes to a boneyard also **for maintenance or an overhaul**.

Various factors can affect an aircraft retirement age, including the **number of flight hours** and **pressurization cycles**.

Planes such as the 747 and the A380 were already under review due to more efficient, modern types being available. However, with long-haul opportunities limited amid the current situation, these models are now required even less.

Airlines may also choose to **temporarily store aircraft** due to economic conditions such as rising fuel costs. If an airline is changing its network, consolidating with another airline or downsizing, it may choose to ground some jets. There is also a strong second-hand market for aircraft. Leasing companies often take retired planes and refurbish them before leasing them to airlines do not want, to buy their own.

# Consequences of Covid-19 on Aviation

**Vaccination Obligation:** Vaccine availability key to travel resumption

**Antigen/PCR-Tests before Boarding:**

Need global harmonization

**Travel Restrictions:** need global coordination/ harmonization

**IATA Air Travel Pass:** needs introduction on global basis

**Airports's Space Use:** has to be reduced according travel flow

**Airlines' Capacity Reduction:** sale or diminuation of their fleets

**Low Cost Carriers:** fast production increase

**Air Traffic Management and HR:** lesser flights means reduction of staff

**Environment:** lesser flights means reduction of fuel and reduction of emissions



**US Airlines get additional US\$ 15 billion** in stimulus aid to bring back 32.000 workers – similar to the bailout of 25 billion US-airlines got from the Cares Act in 2020.

**Norwegian axed its long-haul network:**

Norwegian had 70 long-haul routes across 18 countries in 2019 across 40 airports, with London Gatwick the top.

Long haul flights (by Boeing 787 Dreamliner) are completely stopped. They have now in their narrowbody fleet only 50 aircraft left (Boeing 737-800 and Boeing 737 MAX-8).

**Wizz Air Italy will be key going forward:** Wizz Air launched 260 new routes and 13 new bases since coronavirus started. Its new bases include Catania, Doncaster, Dortmund, Larnaca, London Gatwick, Milan Malpensa, Oslo, and Tirana. Italy has seen a big build-up in the past few months, including domestically.

**Wizz Air Abu Dhabi** was launched on 15 January after its first route to Athens, now also to Thessaloniki and Tel Aviv. The ULCC currently has 13 routes bookable from the UAE capital.



# **Consequences on Aviation: Downsizing of Capacities**

## **Airline industry lost top US\$ 188,5 billion in three years -**

**(\$137,7 billion in 2020, a further US\$ 42,1 billion in 2021, adding 8,7 billion 2022)-**

ICAO has revealed that airline number of passengers boarding flights dropped from **4.5 billion in 2019** to just now 3,8 bn passengers in 2022.

**American Airlines** lost **US\$ 10.9 billion** 2020/2021 when COVID-19 pushed the air travel industry to desperation.

Meanwhile, Dallas-based **Southwest Airlines** reported a **US\$ 3.1 billion losses** for 2020, the first annual loss for the company in 48 years.

Profit oriented Atlanta-based **Delta Air Lines** had **US\$15.8 billion** in losses for all of 2020/2021.

***If you loose money  
with empty seats  
you reduce capacities***

**Shortages  
of everyday products  
have become the new  
normal.**

**Why they won't end soon.**

(McKinsey Global Institute 14. September 2021 Barron)  
The ongoing global vaccine rollout (started 2021) extended elevated goods demand as some services remained constrained and in particular as many international travel restrictions remained in place, holding back consumer spending on travel.

***Covid 19 will create  
by downsizing capacities  
higher air fares***

**American Airlines will no  
longer offer First Class on  
international flights**

# Consequences of Covid 19: Orders for New, Sustainable Equipment

## The Lufthansa Group Orders 22 Airbus A350s & Boeing 787s

### Aircraft orders added

The Lufthansa Group has upped its widebody orders by 22 aircraft. According to the airline, its supervisory board has now approved the following aircraft orders to be added to the existing order books,

- 5x Airbus A350-900
- 10x Airbus A350-1000
- 7x Boeing 787-9.

The deal would be valued at around \$7.5 billion.

For the group, **108 long-haul aircraft orders are now outstanding.**

This order is to replace older aircraft rather than expand the fleet.

## Orders for Airbus, Boeing, Embraer, C 919 - Paris Air Show June 2023

**Indian INDIGO orders 500 Airbus A 320neo** aircraft in value of 50,3 billion Euros (list price).

**Air India has agreed to buy 470 planes** from manufacturing rivals Airbus and Boeing. Airbus will deliver 210 of its narrow-body A320 family, and 40 of its A350 wide-body aircraft, which are generally used on longer routes. Boeing will provide 190 of its narrow-body 737 Max jets, plus 20 of its 787 Dreamliner and 10 B777 wide-body planes.



# Strategic Consequences of Covid 19:

## Intended Mergers

- Korean Air plans to merge with Asiana Airlines (South Korea, Seoul) by approval of the Competition and Consumer Commission of Singapore (CCCS)
- Frontier wanted to absorb Spirit to build 5th-largest airline in the USA, now is also JetBlue interested (behind American, Delta, Southwest and United)
- Air India & Vistara want to merge (both Tata-Group)
- ITA Airways, former Alitalia (Sky Team member) in negotiations with EU and Lufthansa about future merger
- TAP Air Portugal talks
- IAG still wants to buy Air Europa





# Consequences: HR-Strikes-Global Circumstances

**Strikes to Change or  
Improve Working Conditions:**

**2 day strike OS**

**420 flights –**

**52.000 passengers**

**30 mio. Euros lost Revenues**

**Strike of Air Trafficers France April 2023**

**Circumnavigation necessary**



**Europe hit  
by climate activist's tarmac glues**



**London** Heathrow Airport Strikes

March-April 2023

**UK Border Force** Strikes April 2023

**Spain** Ground Staff Strikes March-April 2023

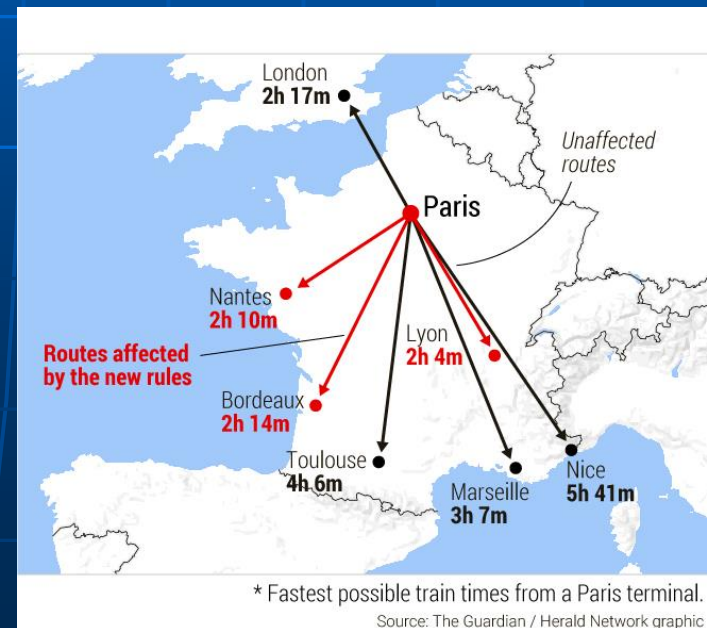
**UK Rail** Strike March-April 2023

**German** Airport Strikes March + May 2023 +  
February 2024

# Consequences: France-Short Haul Flight Ban



In France, marks the introduction of new legislation which will mean taking a train, rather than a plane for many domestic travelers (May 24, 2023) - you can no longer take a French **domestic flight lasting less than 150 minutes** where a suitable alternative rail service exists. The ban comes into force as the country drives forward on its pledge to offer more sustainable domestic travel solutions and reduce carbon emissions (by a French government decree) - **any journey of less than two hours-30 minutes duration** that rail services can undertake.





## Consequences:

# Due to Boeing's production & delivery delays: Delays Will Push Air Fares Higher



- Ryanair has warned of summer capacity constraints due to Boeing 737 MAX delivery delays. „Instead of 57 new airplanes they will receive only 40“ (that's 42,5 % considerably lesser)
- Michael O'Leary „Production delays affecting the delivery of MAX planes may lead to reduced capacity and higher fares“.
- Despite its frustrations, Ryanair remains a big fan of the MAX and is open to picking up canceled orders. (Simple Flying FEB. 26, 2024)

# Consequences:

## Environmental Limitations

### Schiphol cancels Night Flights & Private Jets

The Dutch airport Amsterdam Schiphol, one of the largest in Europe, wants to reduce noise and pollution.

The airport announced that this should lead to "quieter, cleaner and better aviation". In addition, aircraft that cause a lot of noise, such as the Boeing 747, are to be gradually banned. Plans for an additional runway would be abandoned.

Last summer, the Dutch government decided to cut the maximum number of flights per year in order to reduce noise and air pollution. The decision, which is expected to come into effect at the end of this year, would reduce the number of permitted flights from around 500,000 to 440,000 from 2024.

An upper limit of 460,000 flights should apply from November.

### Nordic Council of Ministers: plans to reduce flights locally

All Nordic countries (**Denmark**, Finland, Iceland, **Norway**, and **Sweden**) have plans for national GHG reduction toward 2030 and climate neutrality by 2050 or earlier.

Only Sweden and Finland have reduction targets for the transport sector and none of the Nordics have specific targets for aviation.

However, some economic measures with environmental purposes are implemented:

- Norway has a blending mandate for 0.5% advanced biofuels as of 2019. There are plans to increase it to 30% toward 2030, but this is not yet translated into legislation.
- Sweden and Norway have passenger taxes. The rates per departing passenger are: for domestic and EEA' destinations; and for longer routes.
- Norway has a fuel tax on domestic flights with a rate.

On the other hand, all Nordic countries have a reduced or zero VAT rate on domestic trips. In addition, all flights within the European Economic Area (EEA) are regulated by the EU Emission Trading System.



### **3. The Aviation Industry** **Data**



# System Partners in Aviation



## **Manufacturers – Airlines – Airports – Air Traffic Management**

28.600 commercial aircraft

173 navigation system providers

1.480 airlines

3.900 airports

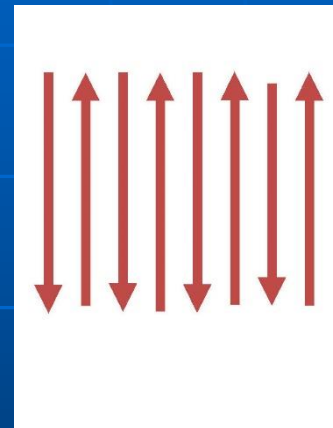
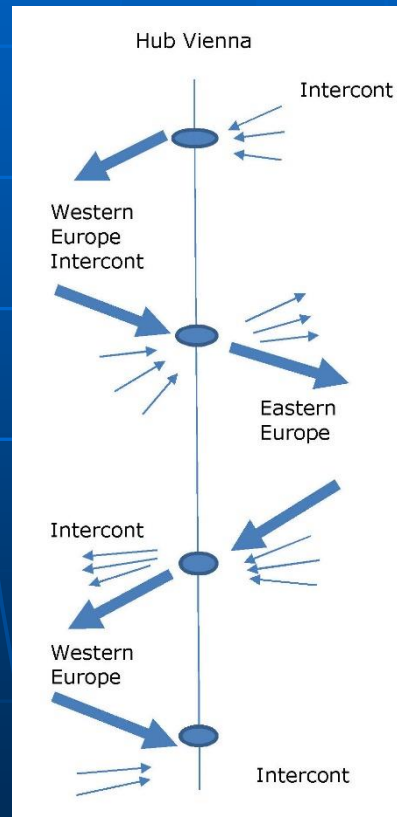
# Network and Low Cost Carriers: Principle Schedule Business Models (in Europe)

## Network Carriers

### Hub & Spoke System

1 aircraft schedule

- 6 legs per day
- via Hub Airport
- Transfer-Connection orientated
- Different aircraft types
- High density and feeder routes
- All distribution channels
- Service-orientated
- On board crew: safety and service



## Low Cost Carriers

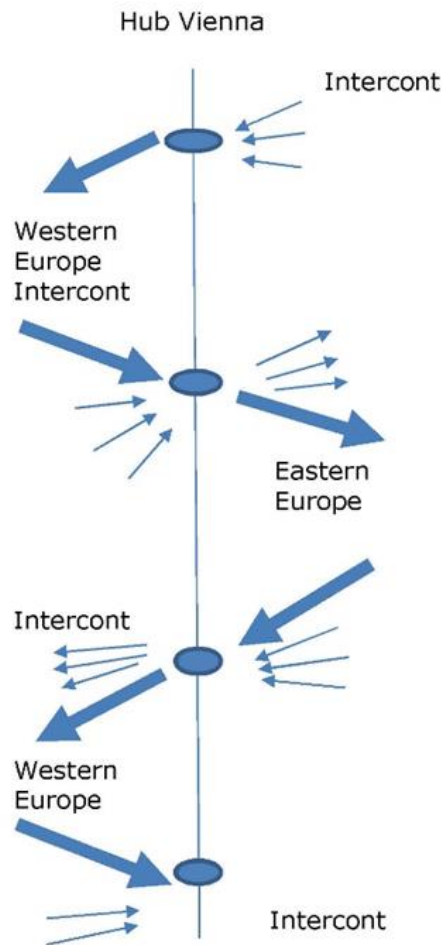
### Point to Point System

1 aircraft schedule

- 8 legs between
- secondary airports
- No transfer-connections
- Single aircraft type
- Strong origin markets
- Sale via Internet
- No service, no frills
- On board crew: just safety staff

# Hub & Spoke-Airline Benefits

Not only Local, but sufficient Transfer Traffic



**06:00-08:00**

**60 movements**

Arrival morning North Atlantic and Far East  
Departures Western Europe

**10:00-11.45**

**60 movements**

Departures North Atlantic & CEE-ME  
Arrivals from western Europe

**12:30-14:00**

**70 movements**

Arrivals from Western Europe  
Departures CEE & Far East

**17:00-18:15**

**80 movements**

Arrivals from CEE  
Departures Western Europe

**19:30-20:30**

**60 movements**

Arrivals from ME and CEE  
Departures Western Europe

**22:00-23.30**

**50 movements**

Arrivals from Western Europe  
Departures CEE & Far East

Austrian Airlines has six very distinct waves, as shown above, each similar in terms of movements.

In normal times these waves would be even more identical.

In hub terms, a wave comprises one bank of arrivals and one bank of departures.

Hubs are crucial as they drive connectivity, passengers, competitiveness, market share, and everything else. <sup>31</sup>

# Network Carriers: Principle Schedule Business Models (in Europe) Transfer – Waves

## **Arrivals 11:00 to 11:55 hrs**

- London LHR
- Amsterdam
- Brussels
- Berlin
- Frankfurt
- Dusseldorf
- Cologne
- Hamburg
- Hannover
- Munich
- Stockholm
- Copenhagen
- Paris CDG
- Nice
- Zurich
- Geneva
- Rome
- Milan
- Innsbruck
- Graz
- Klagenfurt



## **Departures 12:00-13:35 hrs**

- Teheran
- Larnaca
- Athens
- Thessalonica
- Kyiv
- Odessa
- Lviv
- Tirana
- Pristina
- Belgrade
- Buchaerst
- Iasi
- Chisinau
- Podgorica
- Skopje
- Sofia
- Varna
- Zagreb
- Dubrovnik
- Zadar
- Split
- Sarajevo



# World Airports Ranking 2023-2019

2019: World leader in passenger handling Atlanta, London Heathrow 7th position  
 2020: 7 airports of China in top 10 positions, Atlanta 2nd only, London Heathrow 21st  
 2021: again 8 airports from USA among first 10, Istanbul best European  
 2022: Again 4 US-airports top, Dubai 5, Istanbul & London 7 & 8th, China & Far East Covid-down  
 2023: ATL + DFW (Delta + American), but DXB 2nd and LHR 4th, IST + CDG among first 10

2023

2022

2021

2020

2019



World Airport Ranking (million passengers)		2023
1.	Atlanta International ATL	104,7
2.	Dubai International DXB	85,0
3.	Dallas Fort Worth DFW	80,0
4.	London Heathrow LHR	79,2
5.	Tokyo Haneda HND	78,2
6.	Denver International DEN	77,8
7.	Istanbul Grand IGA	76,2
8.	Los Angeles LAX	75,1
9.	Chicago, Ill. O'Hare ORD	72,0
10.	Paris Charles de Gaulle CDG	68,3
11.	New Delhi Indira Gandhi	65,3
12.	New York JFK	62,5
13.	Amsterdam Schipol AMS	61,7
14.	Madrid Barajas MAD	60,2
15.	Frankfurt Rhein-Main	59,4
16.	Orlando MCO	57,7
17.	Charlotte Douglas CLT	53,4
18.	Las Vegas LAS	52,8
19.	Miami Dade County MIA	52,3
20.	Mexico City MEX	48,4

		2022
1.	Atlanta International ATL	93,7
2.	Dallas Fort Worth DFW	73,4
3.	Denver DEN	69,3
4.	Chicago Il. O'Hare ORD	68,3
5.	Dubai International DXB	66,1
6.	Los Angeles LAX	65,9
7.	Istanbul Grand IGA	64,3
8.	London Heathrow LHR	61,6
9.	New Delhi DEL	59,5
10.	Paris Charles de Gaulle CDG	57,5
11.	New York JFK	55,3
12.	Las Vegas LAS	52,7
13.	Amsterdam Schipol AMS	52,5
14.	Miami Dade County MIA	50,6
15.	Madrid Barajas MAD	50,6
16.	Tokyo Haneda HND	50,3
17.	Orlando MCO	50,2
18.	Frankfurt Rhein-Main	48,9
19.	Charlotte Douglas CLT	47,8
20.	Mexico City MEX	46,3

		2021
1.	Atlanta International ATL	75,7
2.	Dallas Fort Worth DFW	62,5
3.	Denver DEN	58,8
4.	Chicago O'Hare ORD	54,0
5.	Los Angeles LAX	48,0
6.	Charlotte Douglas CLT	43,3
7.	Orlando MCO	40,4
8.	Guangzhou Baiyun CAN	40,2
9.	Chengdu Shuangliu CTU	40,1
10.	Las Vegas LAS	39,7
11.	Phoenix PHX	38,8
12.	Miami MIA	37,3
13.	New Delhi DEL	37,1
14.	Istanbul IST	37,0
15.	Shenzhen Bao'an SZX	36,4
16.	Seattle SEA	36,2
17.	Mexico City MEX	36,1
18.	Chongqing Jiangbei	35,8
19.	Shanghai Hongqiao SHA	33,2
20.	Beijing Capital Int. PEK	32,6

		2020
1.	Guangzhou Baiyun Int.	43,8 (-40,5%)
2.	Atlanta International	42,9 (-60,2%)
3.	Chengdu Shuangliu	40,7 (-27,1%)
4.	Dallas Fort Worth Int.	39,4 (-47,5%)
5.	Shenzhen Bao'an	37,9 (-28,4%)
6.	Chongqing	34,9 (-22,0%)
7.	Beijing Capital PEK	34,5 (-65,5%)
8.	Denver Intern.	33,7 (-51,1%)
9.	Kunming KMG	33,0 (-31,4%)
10.	Shanghai Hongqiao SHA	31,2 (-31,7%)
11.	Xian Xianyang	31,1 (-34,2%)
12.	Tokyo Haneda I.	31,1 (-63,8%)
13.	Chicago O'Hare	30,9 (-63,5%)
14.	Shanghai Pudong	30,5 (-60,0%)
15.	Los Angeles Int.	28,8 (-67,3%)
16.	Delhi Indira Gandhi	28,5 (-58,4%)
17.	Hangzhou Xianshan	28,2 (-29,6%)
18.	Charlotte Douglas	27,2 (-46,0%)
19.	Dubai Int. DXB	25,9 (-70,0%)
20.	Istanbul IST	23,3 (-55,1%)

		2019
1.	Atlanta	110,5
2.	Beijing Capital Int.	100,0
3.	Los Angeles	88,1
4.	Dubai Int. DXB	86,4
5.	Tokyo Haneda	85,5
6.	Chicago O'Hare	84,4
7.	London Heathrow	80,9
8.	Shanghai Pudong	76,2
9.	Paris Ch. De Gaulle	76,2
10.	Dallas Fort Worth	75,1
11.	Guangzhou Baiyun	73,4
12.	Amsterdam Schipol	71,7
13.	Hong Kong Int.	71,4
14.	Seoul Incheon	71,2
15.	Frankfurt	70,6
16.	Denver	69,0
17.	Delhi Indira Gandhi	68,5
18.	Singapore Changi	68,3
19.	Bangkok Suvarnabhumi	65,4
20.	New York, John F. Kennedy	62,6

# Global Airline Ranking 2023-2019

2019: 4 US-Airlines top, Ryanair-Group 5th, Lufthansa-Group 7th  
 2020: China Southern largest, China Eastern 4th, Air China 7th, Ryanair-Gr. 6th  
 2021: Again 4 US carriers top, China Southern & Eastern 5th & 6th, FR-LH-SU-TK  
 2022: 4 US carriers top, Ryanair 3rd, Low Cost FR & W6 & U2 ascends, LH/TK/SU top  
 2023: US carrieris top, Ryanair 3rd, LH-Group 7th-IAG 8th-AFKL 11th, Indigo 10th

2023

2022

2021

2020

2019

Global Airline Ranking

million passengers	2023	(YoY)
1. American Airlines	210,7	(+5,7%)
2. Delta Air Lines	190,0	(+10,9%)
3. Ryanair	181,7	(+13,2%)
4. United Airlines	164,9	(+14,3%)
5. China Southern	142,2	(+127%)
6. Southwest Airlines	137,3	(+8,4%)
7. Lufthansa-Group	122,6	(+20,4%)
8. IAG (BA-EI-IB-VY)	115,6	(+22%)
8. China Eastern	115,6	(+172%)
10. Indigo	104,5	(+34,0%)
11. Air France-KLM Group	93,6	(+12,3%)
12. easyJet-Group	85,1	(+13,2%)
13. Turkish	83,4	(+16,1%)
14. WizzAir	60,3	(+32%)
15. Aeroflot-Group	47,0	(+15,0%)

	2022	(YoY)
1. American Airlines	199,3	(+20,3%)
2. Delta Air Lines	171,4	72,9%)
3. Ryanair	160,4	(+121,5%)
4. United Airlines	144,3	(+38,6%)
5. Southwest Airlines	126,6	(+27,7%)
6. Lufthansa-Group	101,7	(+116,4%)
7. IAG (BA-EI-IB-VY)	94,7	(+143,7%)
8. Air France-KLM Group	83,3	(+86,5%)
9. Turkish	71,8	(+60,3%)
10. Indigo	69,1	(+50,2%)
11. China Southern	62,6	(-36,4%)
12. easyJet-Group	75,2	(+67,5%)
13. Turkish	45,7	(+110,6%)
14. China Eastern	42,5	(-46,3%)
15. Aeroflot-Group	40,7	(-11,1%)

	2021	(YoY)
1. American Airlines	165,7	(+73,8%)
2. United Airlines	104,1	(+80,1%)
3. Delta Air Lines	102,9	(+80,0%)
4. Southwest Airlines	99,1	(+45,4%)
5. China Southern Airlines	98,5	(+1,7%)
6. China Eastern Airlines	79,1	(+16,4%)
7. Indigo	46,0	(+41,4%)
8. Ryanair-Group	72,4	(+39,2%)
9. Air China	68,9	(+61,7%)
10. Lufthansa-Group	47,0	(+29,1%)
11. Aeroflot-Group	45,8	(+55,8%)
12. Turkish	44,8	(+64,7%)
13. Air France-KLM-Group	44,7	(+31,1%)
14. IAG (BA-EI-IB-VY)	38,9	(+24,3%)
16. easyJet-Group	29,5	(+11,3%)

	2020	(YoY)
1. China Southern Airlines	96,9	(-36,1%)
6. Southwest Airlines	67,8	(-58,3%)
2. American Airlines	95,3	(-55,7%)
4. China Eastern Airlines	74,5	(-42,3%)
3. Delta Airlines	55,0	(-64,6%)
6. Ryanair-Group	51,0	(-65,9%)
5. Air China Group	68,7	(-40,3%)
7. United Airlines	57,8	(-64,4%)
8. Ryanair		(-44,8%)
10. Lufthansa-Group	36,4	(-75,0%)
11. Air France-KLM-Group	34,1	(-67,3%)
12. IAG (BA+EI+IB+VY)	31,3	(-73,6%)
9. Hainan Airlines Group	37,0	(-61,9%)
14. Turkish	27,2	(-62,3%)
15. EasyJet	26,5	(-72,5%)

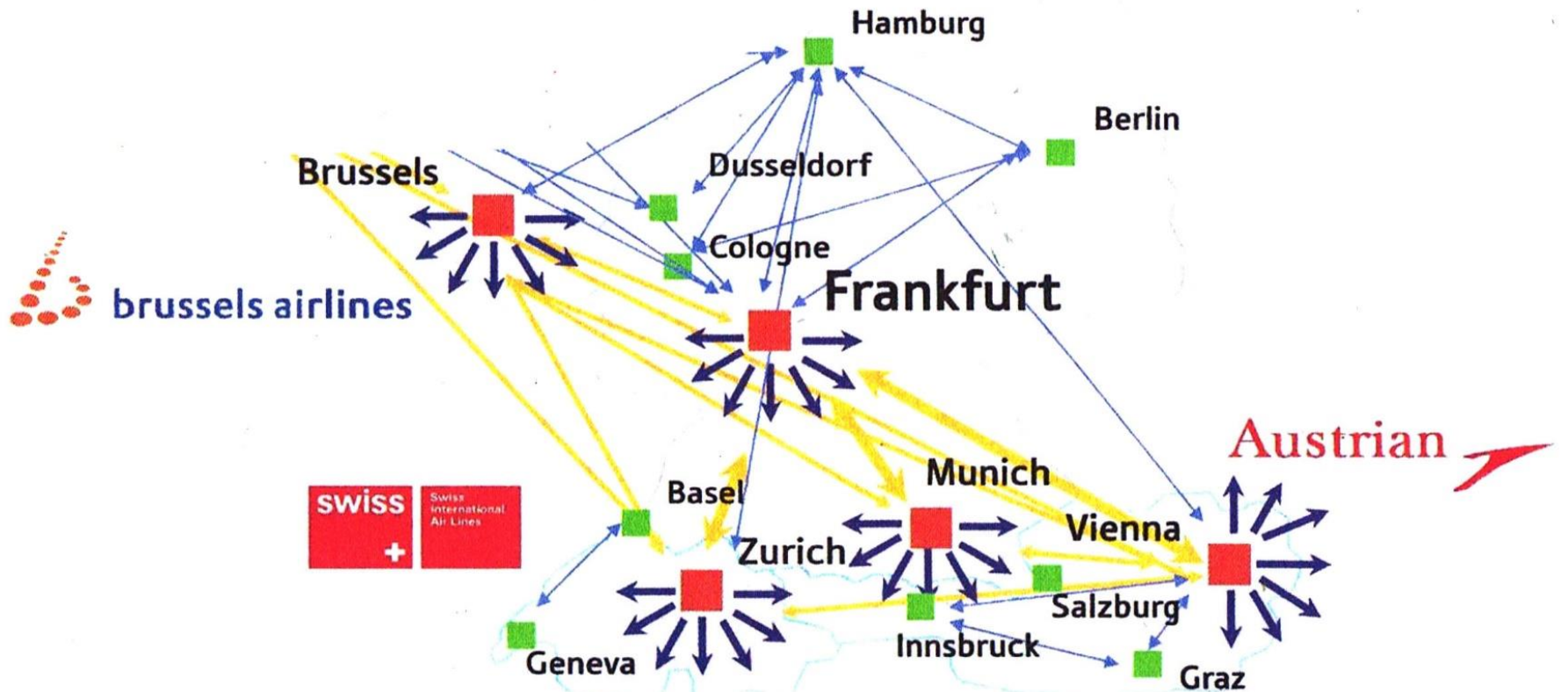
	2019
1. American Airlines	215,2
2. Delta Air Lines	162,8
3. Southwest Airlines	162,7
4. United Airlines	162,4
6. Ryanair	148,6
5. China Southern Airlines	151,6
7. Lufthansa Group	145,2
4. China Eastern Airlines	130,2
9. IAG (BA+EI+IB+VY)	118,3
10. Air China	115,0
11. Air France-KLM	104,2
12. EasyJet	96,5
13. Turkish	74,3
14. LATAM Airlines	74,2
15. Emirates	58,6





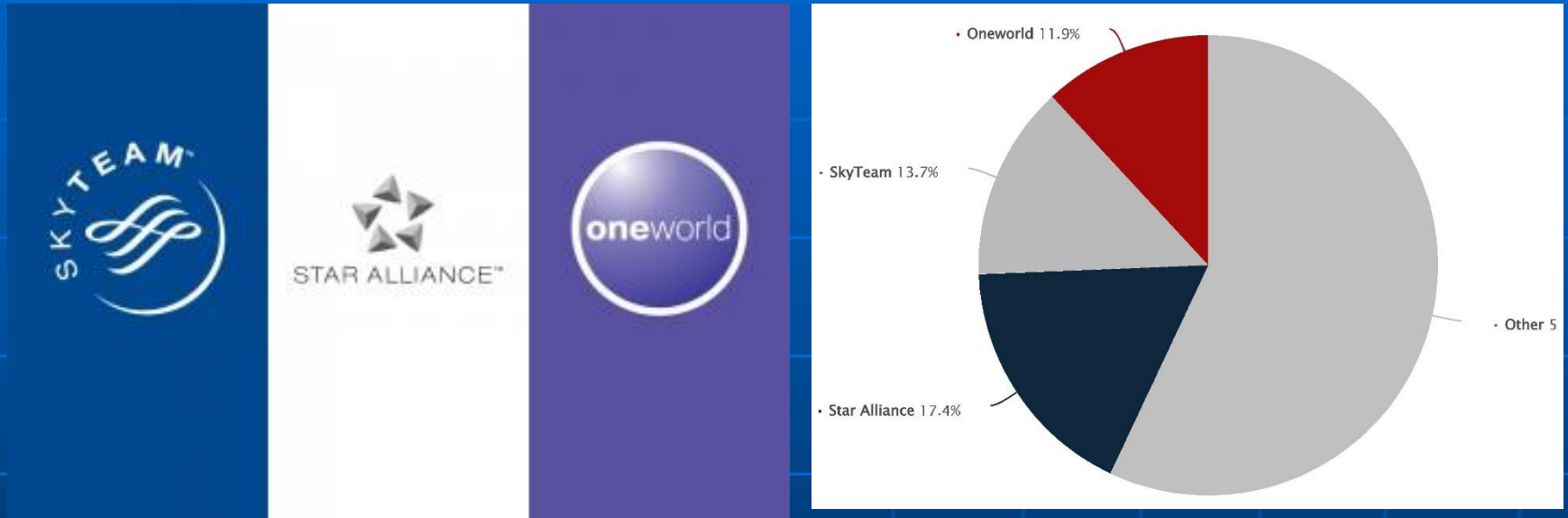
# LH-Merger Benefit: Multi Hub System

Frankfurt – Munich – Zurich – Vienna - Brussels





# **3 Global Airline Alliances:** **handle 43 % of Global Passenger Volume**

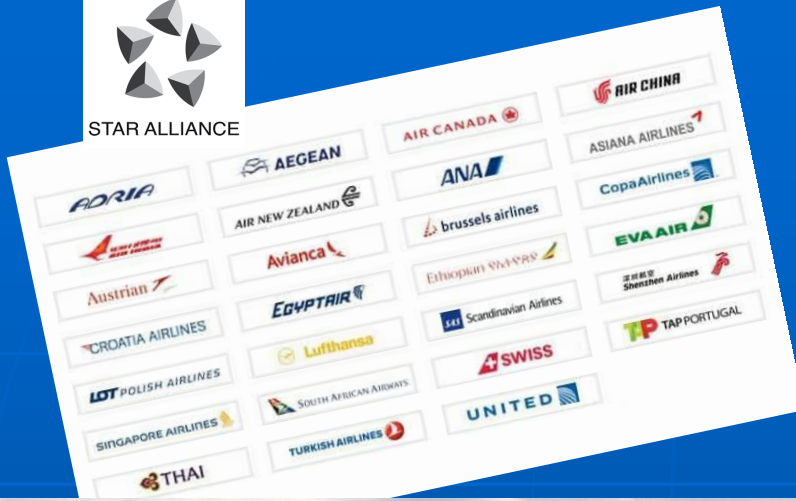


Of total scheduled passenger traffic,  
Star Alliance maintained its position as the largest airline alliance with 17.4%  
followed by SkyTeam (13.7%) and  
oneworld (11.9%)

2022 Statista

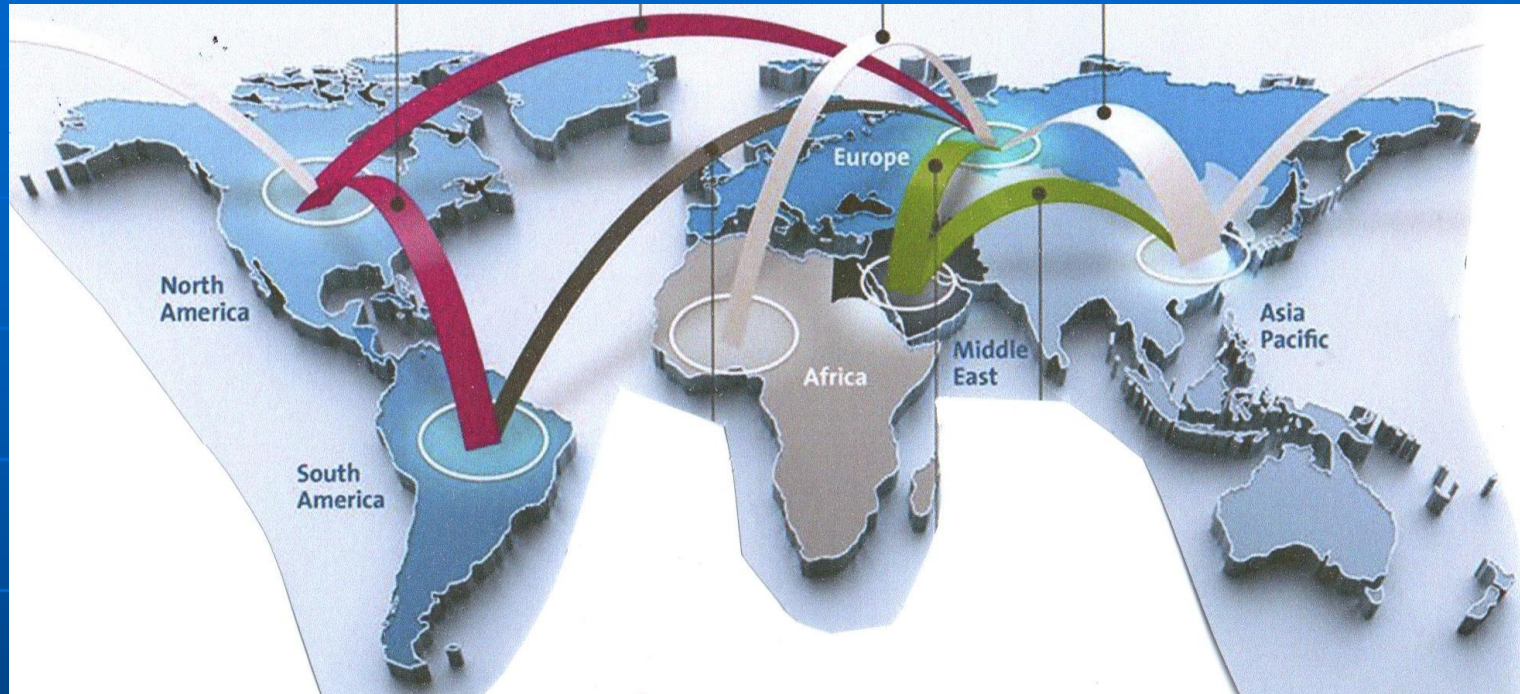


STAR ALLIANCE





# World busiest Intercontinental Routes



*from Europe to...*

*Changes in aviation traffic flows from  
2023 to 2024*

# Traffic from/to Europe: Daily Flights 2024

## Traffic flows

(average daily departure/arrival flights for week 26 Feb - 03 Mar 2024)

Region	Average daily flights	% prev week		% prev year		% 2019	
Intra-Europe	19,020	↑	+2%	↑	+4%	↓	-7%
Europe ↔ Asia/Pacific	768	↑	+3%	↑	+25%	↑	+0%
Europe ↔ Mid-Atlantic	199	↓	-2%	↑	+1%	↑	+2%
Europe ↔ Middle-East	1,290	↑	+3%	↑	+2%	↑	+0%
Europe ↔ North Atlantic	1,037	↑	+4%	↑	+7%	↑	+10%
Europe ↔ North-Africa	1,089	↑	+1%	↑	+11%	↑	+16%
Europe ↔ Other Europe	226	↓	-1%	↓	-3%	↓	-71%
Europe ↔ South-Atlantic	179	↓	-0%	↑	+11%	↑	+0%
Europe ↔ Southern Africa	318	↑	+1%	↑	+3%	↓	-3%
Non Intra-Europe	5,105	↑	+2%	↑	+8%	↓	-5%



# Routes Overseas: North Atlantic

## Europe-North America v.v.

2022 after Pandemy:

Operations on these area routes without travel restricitons started only December 08, 2022.

2023: 104 % of Pre-Pandemic travel

North Atlantic Traffic		2023		2022		2021	2020	2019
Flights & Passenger Round Trips								
Flights	per year	440.000	(+14,0%)	386.000		265.000	135.000	427.000
	daily	1.227		1.077		746	382	1.187
Passengers	per year	87,6 mio.	(+13,8%)	77 mio.		48 mio.	15 mio.	85 mio.
	daily	240.000	(+20,6%)	199.000		180.000	40.000	230.000

- 08:20: Heathrow, Virgin, VS3, A330neo
- 08:20: Heathrow, BA, BA117, 777-300ER
- 08:25: Heathrow, JetBlue, B62220, A321LR
- 09:45: Heathrow, BA, BA175, 777-300ER
- 09:55: Heathrow, Virgin, VS47, A330neo
- 10:05: Heathrow, American, AA101, 777-300ER
- 10:30: Gatwick, JetBlue, B644, A321LR
- 10:50: Heathrow, Delta, DL2, 767-400ER
- 11:40: Heathrow, BA, BA173, 777-300ER
- 11:55: Heathrow, JetBlue, B620, A321LR
- 12:00: Gatwick, Delta, DL63, 767-300ER
- 12:50: Gatwick, Norse, Z0701, 787-9
- 12:55: Heathrow, Virgin, VS25, A350-1000
- 13:20: Heathrow, BA, BA177, 777-300ER
- 13:55: Heathrow, Virgin, VS9, A330neo
- 14:40: Heathrow, BA, BA115, 777-300ER
- 15:05: Gatwick, BA, BA2273, 777-300ER
- 15:15: Heathrow, American, AA105, 777-300ER
- 16:20: Heathrow, Virgin, VS153, A330-300
- 16:20: Heathrow, BA, BA113, 777-300ER
- 17:00: Heathrow, American, AA107, 777-300ER
- 17:50: Heathrow, Delta, DL4, A330neo
- 18:05: Heathrow, BA, BA179, 777-300ER
- 18:25: Heathrow, Virgin, VS137, A350-1000
- 19:05: Heathrow, BA, BA183, 777-300ER
- 19:55: Heathrow, American, AA141, 777-300ER



## London – New York JFK 28x daily

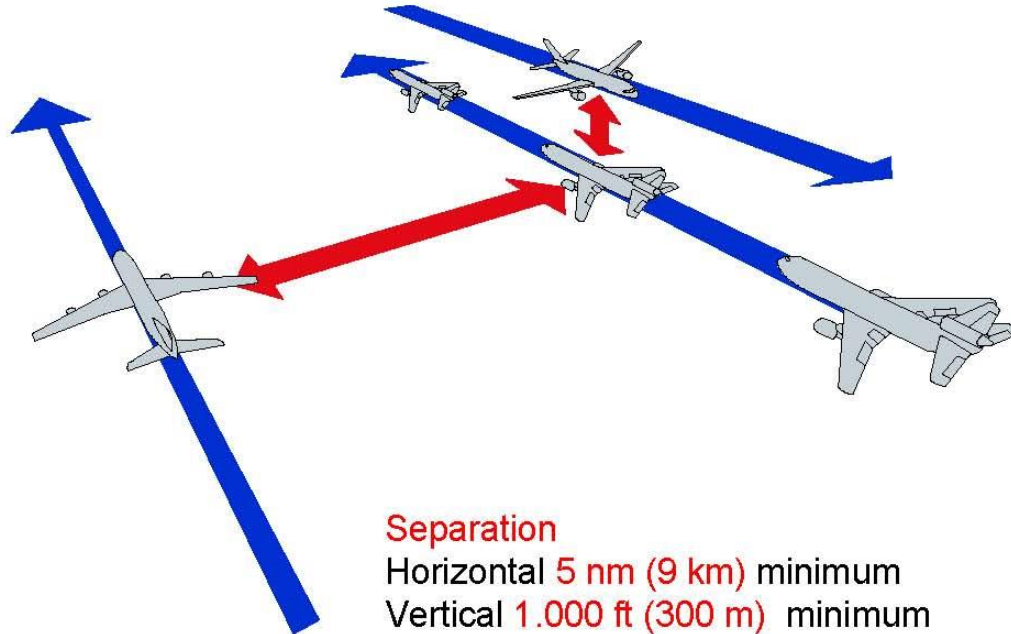
- 28 daily departures to NYC JFK ex LON LHR & LGW
- 2023 travelled from LHR 3 mio. passengers to JFK only
- LHR-North America traffic 2023 was 19,9 mio. passengers

# How many Runways do Airports have

<b>Amsterdam</b>	<b>AMS</b>	<b>6 Runways</b>
<b>Denver</b>	<b>DEN</b>	<b>8 Runways</b>
<b>Frankfurt</b>	<b>FRA</b>	<b>4 Runways</b>
<b>Honolulu</b>	<b>HNL</b>	<b>4 Runways</b>
<b>Atlanta</b>	<b>ATL</b>	<b>5 Runways</b>
<b>Chicago O'Hare</b>	<b>ORD</b>	<b>8 Runways</b>
<b>Beijing Capitol Int'l</b>	<b>PEK</b>	<b>3 Runways</b>
<b>Beijing Daxing Int'l</b>	<b>PKX</b>	<b>4 Runways</b>
<b>Istanbul Int'l. Airport</b>	<b>IST</b> (since 06APR 2019)	<b>5 – 8 Runways</b>
<b>London Heathrow Airport</b>	<b>LHR</b>	<b>2 Runways</b>



# SEPARATION



# European Aviation Traffic Control

***25.000 flights a day***

***9,1 million starts (and landings) per year in Europe (2019)***

***10.400 flights a day***

***3,8 million starts (and landings) in Europe 2020***

***27.900 flights a day***

***10,2 million starts (and landings) in Europe 2023***

***Introducing „Single European Sky“:***

- ***every flight could be shortened by 14 minutes***
  - ***5 bn. Euros could be saved***
- ***Reduce 10 % of emissions in European Air Space***



# Orders & Deliveries Airbus & Boeing

aircraft deliveries	2018	2019	2020	2021	2022	2023	
<b>Boeing:</b>	806 →	<b>380</b> →	<b>157</b> →	<b>340</b> →	<b>480</b> →	<b>528</b>	
<b>Airbus:</b>	800 →	<b>863</b> →	<b>566</b> →	<b>611</b> →	<b>661</b> →	<b>735</b>	
aircraft orders	2018	2019	2020	2021	2022	2023	order backlog
<b>Boeing:</b>	806 →	<b>380</b> →	<b>157</b> →	<b>340</b> →	<b>480</b> →	<b>1.314</b>	<b>5.626</b>
<b>Airbus:</b>	800 →	<b>863</b> →	<b>566</b> →	<b>611</b> →	<b>800</b> →	<b>2.094</b>	<b>8.598</b>

***U.S., EU Agree to suspend tariffs in Boeing-Airbus Dispute (05MAR21)***

aviation pros 27FEB21-12 AUG21-Airbus-Boeing-Seattle Times 11JAN22-Defense & security Monitor 16AUG22-10JAN23-Reuters-CNN-Simple Flying 09-12JAN24

Average wait time from order to delivery is now around seven years,

the longest time lapse since new-technology aircraft types entered service (Avalon JAN 29,2024)



# Official Manufacturer's Price List

	<b>US-Dollars</b>
Boeing Price List 2020 – Statista (in million)	
<b>B 737-800</b>	<b>106,1</b>
<b>B 737 MAX 9</b>	<b>121,6</b>
<b>B 767-300ER</b>	<b>217,9</b>
<b>B 787-8</b>	<b>248,3</b>
<b>B 787-9</b>	<b>292,5</b>
<b>B 787-10</b>	<b>338,4</b>
<b>B 777-200ER</b>	<b>306,6</b>
<b>B 777-300ER</b>	<b>375,5</b>
<b>B 747-8 Jumbo</b>	<b>418,4</b>
<b>B 777-9</b>	<b>442,2</b>

	<b>US-Dollars</b>
Airbus Price List 2018 – Statista (in million)	
<b>A 320</b>	<b>101,0</b>
<b>A 321</b>	<b>118,3</b>
<b>A 320 neo</b>	<b>110,6</b>
<b>A 321 neo</b>	<b>129,5</b>
<b>A 330-200</b>	<b>238,5</b>
<b>A 330-800 neo</b>	<b>259,9</b>
<b>A 330-900 neo</b>	<b>296,4</b>
<b>A 350-900</b>	<b>317,4</b>
<b>A 350-1000</b>	<b>366,5</b>
<b>A 380</b>	<b>445,6</b>

## How much has Airbus lost on the A380?

*According to industry estimates. Airbus invested around \$25 billion in the A380 project. While passengers love it, and operators continue to fly it, the aircraft was not a profitable endeavor for Airbus. It was initially imagined that Airbus would have to sell around 270 examples before making a profit (up to 868 seats). However, this was later increased to 420 airframes following significant production delays. This target was obviously never met, with just over 250 of the aircraft being delivered before Airbus ceased production of the type. Airbus ended manufacture of the A380 in 2021, with just 252 built.*

# Airline Manpower per Aircraft



Airline-Manpower		per aircraft	short-medium range	long- haul
Manpower (Austrian Airlines 2023)	6.000			
Aircraft	65			
Daily Flights	220			
Cockpit Crew	1.100	<b>17</b>	14-17	17-22
Cabin Crew	2.400	<b>37</b>	15-20	20-35 (11)
Ground Handling Staff Vienna Basis	800	<b>12</b>		
Techn. Maintenance-Engeneering	700	<b>12</b>		
Admin. Service H/O and abroad	1.000	<b>15</b>		
<i>TTL</i>	<i>6.000</i>	<b>93</b>		
<b>Minimum staff for 1 aircraft: 93 employees</b>				

## **4. The Future Development Aspects of Aviation:**

**Mobility**  
**Sustainable Aviation**  
**Technological Developments**  
**Strategic Items**



# **Transportation Future**

## **Aspect Items**

- 1. Mobility**
- 2. Efficiency**
- 3. Future Risks in Transportation**
- 4. Safety – Security**
- 5. Environment – Resources - Sustainability**
- 6. Infrastructure**
- 7. Slots (at Airports – Single European Sky)**
- 8. Quality Aspects**
- 9. New Technologies**
- 10. World Population**
- 11. Future World Aviation Traffic**
- 12. Shift in Global Travel Flows**
- 13. Aircraft Order Perspectives til 2040**

# Mobility

## Mobility is a basic human need

However, global challenges such as climate change,  
a depletion of raw materials,  
an increase in transport volume and urbanisation  
are forcing us to take a fundamentally different approach.

*Mobility, for instance,  
has to meet three key requirements:*

*Safety,  
Efficiency and  
Environmental Sustainability.*

*Travel is fatal to prejudice, bigotry, and narrow-mindedness,  
and many of our people need it sorely on these accounts.*

*(Mark Twain)*

*Travel always was a tool of uniting the nations*

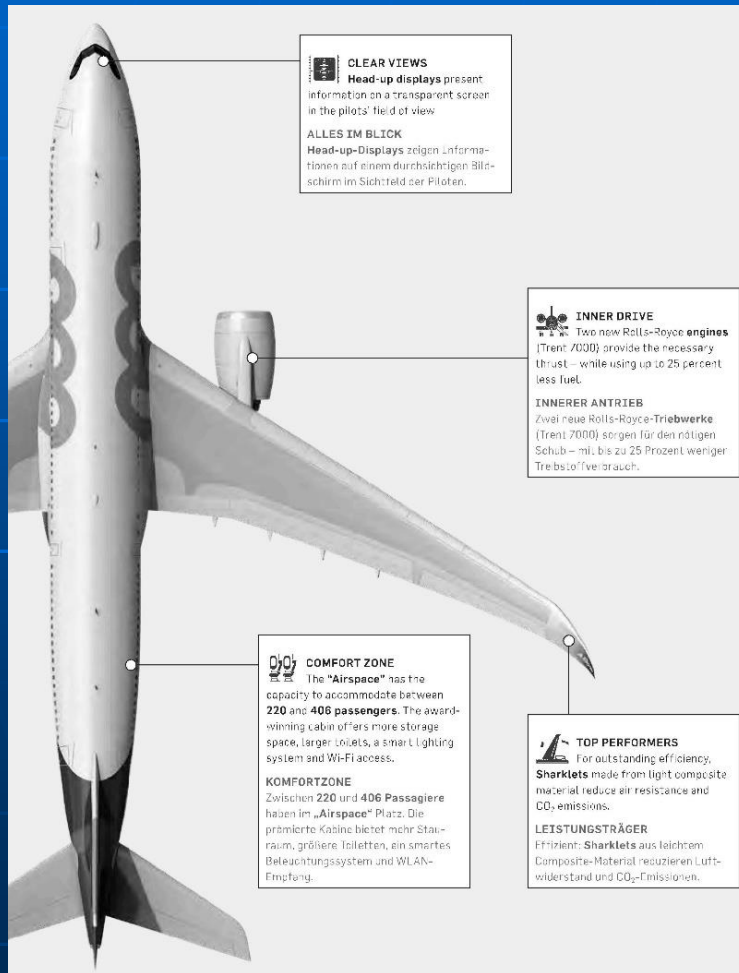
*(Norbert Kettner)*

# Transport depends on :

- Invention
  - Construction
- Science development
  - Infrastructure
- Public acceptance

**Aviation: Absolute Safety & Security**

# Technologies of the Future



- **The push for automation and digitalization** promotes efficiency increases and energy optimization in manufacturing
- **Lightweight construction**, coupled with newly developed aerodynamic designs, makes a significant contribution to more efficient, quieter and "greener" flying. This reduces fuel consumption and minimizes CO<sub>2</sub> emissions.
- **Innovations that save time and costs** and build sustainable components
- **Weight Reductions:** weight optimization through the use of innovative fiber composite materials and new manufacturing technologies. These reduce fuel consumption, which in turn makes aircraft more sustainable and economical.
- **Deliver airspace components** as turnkey solutions
- **Thermographic testing** of aviation components
- **Flexible reactions** of strategy and structure changes



## Small Metal Tab reduces Noise Emissions



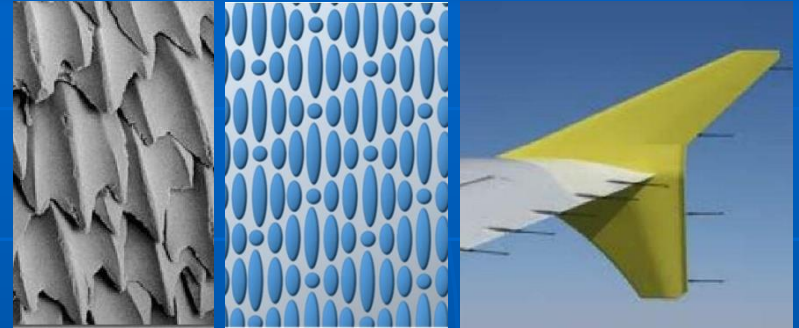
German flag carrier Lufthansa has found an inventive way of reducing its noise emissions on Airbus A320 family aircraft. Using a small metal tab that functions as a vortex generator, it significantly reduces the noise from the aircraft. The airline began implementing this new technological solution on its short-haul fleet A 320-200 in 2014.

Lufthansa began using small metal tabs (= *Deckel, Schildchen*) as noise-reducing vortex-generators (= *Wirbelerzeuger*) following a study with the *Deutsches Zentrum für Luft- und Raumfahrt* (German Aerospace Center).

This research found that the tabs generate small vortices (= *Wirbel*) below the aircraft's wings.

These prevent the occurrence of certain noise, which normally arises when air blows into tank pressure equalization openings inflight. The effect is similar to blowing over a glass bottle. The vortices generated by the metal tabs, as seen above, stop this from happening, and thus reduce noise.

## Shark Skin Technology Sharklets



Now Lufthansa Technik and BASF have succeeded in making the breakthrough as part of a joint project. AeroSHARK, a surface film that mimics the fine structure of a shark's skin, is to be rolled out on Lufthansa Cargo's entire freighter fleet from the beginning of 2022, making the aircraft more economical and reducing emissions.

The surface structure consisting of riblets measuring around 50 micrometers imitates the properties of sharkskin and therefore optimizes the aerodynamics on flow-related parts of the aircraft. This means that less fuel is needed overall.

For Lufthansa Cargo's Boeing 777F freighters, Lufthansa Technik estimates a drag reduction of more than one percent.

2019 LH Cargo had annual savings of 3.700 tons of kerosene resp. 11.700 tons of CO<sub>2</sub>-emissions for 10 aircraft (fuel cost in the amount of 337 mio. Euros).

# Air Tags for your Luggage + Robotic for Check-in



## Baggage Tracking Device

via Smartphone



## Robotic

Emirates has unveiled its first robotic check-in assistant. Sara, as the system is called, matches customers' faces with scanned passports, checks the passengers in, and guides them to the luggage drop area.

# Sustainable Aviation

## „Decarboniting the Aviation Industry“

### Aviation is responsible for Emissions

2,5 Liter Kerosine pro 100 PKM  
57-90 gramm pro PKM

The share of CO <sub>2</sub> emissions from aviation is		
on global basis	in Europe	in Austria
<b>2,7 %</b>	<b>0,52 %</b>	<b>0,16 %</b>





# Net Zero CO<sub>2</sub> Destination 2050

Europe's aviation sector is collectively on board to lead the way in reducing aviation CO<sub>2</sub> emissions by 2030 and 2050 - making flying more sustainable for the long term.

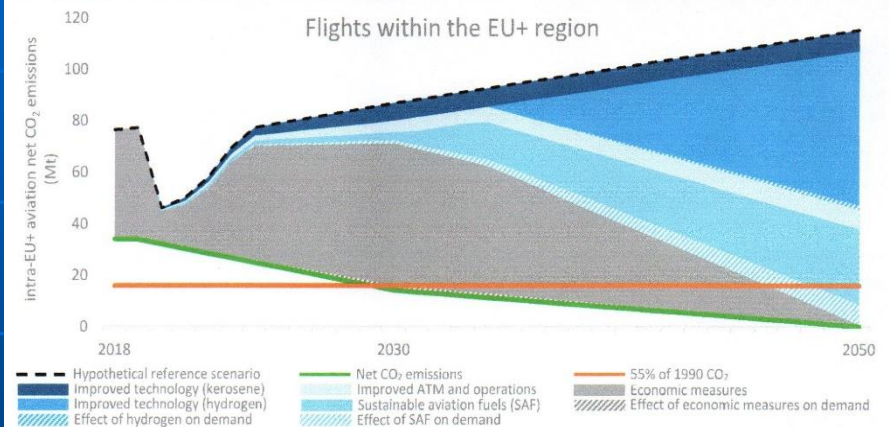
In February 2021, Europe's airlines, airports, aerospace manufacturers and air navigation service providers laid out a joint long-term vision along with concrete solutions to the complex challenge of reaching Net Zero CO<sub>2</sub> emissions from all flights departing the EU, UK and EFTA by 2050. The independent report by the Royal Netherlands Aerospace Centre (NLR) and SEO Amsterdam Economics shows how a combination of actions from all stakeholders - including the EU and national governments - in four key areas could achieve substantial CO<sub>2</sub> emissions reductions in line with EU climate goals.

These include:

- **Improvements in aircraft and engine technologies** (including hybrid, electric and hydrogen propulsion),
- **using sustainable aviation fuels (SAFs)** both for fixed- and rotary-wing platforms, and
- **implementing economic measures,**
- **improvements in air traffic management** (ATM) and aircraft operations.

## A detailed look at flights within the EU

For flights within the EU<sup>2</sup>, the results highlight that net zero CO<sub>2</sub> emissions in the year 2050 can be achieved with **close to zero economic measures**. The largest contribution is made by **hydrogen-powered aircraft introduced in 2035** followed by sustainable aviation fuels. Net emissions can be limited to **13 MtCO<sub>2</sub> in the year 2030**, estimated to be **55% below the emission levels in 1990** and thereby contributing to the implementation of the European Green Deal.



*Intra-EU<sup>2</sup> only. Modelled for 2030 and 2050, the impacts are linearly interpolated. The base year for this study is 2018.*

## Recommendations to industry and government

The measures leading to net zero CO<sub>2</sub> emissions from European aviation need to be realised through **collective policies and actions by governments and industry**. Both should work towards **global commitment to a net zero carbon future for aviation**, to avoid differentiated policies, carbon leakage and transfer of activity. Europe should maintain and evolve its leading position in sustainable aviation by the following policies and actions:

### Industry should

- Continue to substantially invest in decarbonisation
- Develop more fuel-efficient aircraft and bring these into operation through continued fleet renewal
- Develop hydrogen-powered and (hybrid)-electric aircraft and associated supporting (airport) infrastructure and bring these into the market
- Scale up drop-in SAF production and uptake
- Implement the latest innovations in ATM and flight planning
- Compensate remaining CO<sub>2</sub> emissions by removing carbon dioxide from the atmosphere

### Governments should

- Support industry investments by direct stimuli or by reducing investment risk through a consistent and long-term policy framework
- Stimulate further development and deployment of innovations by funding research programmes and promoting carbon removal technologies
- Work with the energy sector to ensure sufficient availability of renewable energy at affordable cost
- Support the development of the SAF industry
- Contribute to optimising ATM, in particular by fully implementing the Single European Sky



# Sustainability of Aviation

## Emissions Improvement 2023-2022-2019



	2023	2022	2021	2020	2019
<b>Sched passenger numbers, billions</b>	<b>4,35 bn.</b>	<b>3,8 bn.</b>	<b>2,2 bn.</b>	<b>1,8 bn.</b>	<b>4,5</b>
Passengers per day, millions	11,9 mio.	10,4 mio.	6,0 mio.	4,9 mio.	12,4 mio.
<b>Flights, million</b>	<b>36,8 mio.</b>	<b>27,8 mio.</b>	<b>20,1 mio.</b>	<b>16,9 mio.</b>	<b>38,9mio</b>
Flights per day (in thsd.)	100.100	76.200	55.100	46.300	106.500
Fuel Consumption (bn. gallons)	94	77	62	52	95
Fuel Consumption (bn. litres)	428	350	282	237	432
Fuel Costs (bn. US\$)	271	215	105	80	190
% of Expenses	32%	30%	19%	16%	24%
<b>Aviation CO2 Emissions</b> (mio. tonnes)	<b>727</b>	<b>690</b>	<b>619</b>	<b>488</b>	<b>914</b>
<b>World Emissions</b> (bn. metric tonnes)		<b>36,2</b>	<b>37,1</b>	<b>34,3</b>	<b>37,0</b>

# Batterie? Hybrid? Hydrogen? Net Zero

## Batterie/ Elektro



Faktor:

### Weight

Ultra Short Range

## Wasserstoff / Hybrid



Faktor:

### Tank Volume

Short & Medium Range  
til 2.000 km

- First Flight planned 2035 (up to 100 seats)
- Extensive Adjustments at airports necessary

## Sustainable Aviation Fuels



### Cooling & Tank Space

Medium & Long  
Range  
as of 2.000 km

- Only limited available
- Currently 5 times more expensive than fossil fuels

# Research to Climate Change in Aviation

- *Aviation's ESG: Environmental, Social, Governance, not only Economic*
- *EU-Climate Package „Fit to 55“*
- *CORSIA reduction until 2050 to 50 %*
- *Technical and technological developments*
  - Electrical Drive** for short flights til 100 kms
  - Hydrogen Drive** for main short- and mid-range flights (over 100pax)
  - Sustainable Aviation Fuel (SAF)** primarily for long-haul flights

Airbus til 2035 aircraft for SAF



## *Necessary developments:*

1. New aircraft, including optimized maintenance
2. Optimized infrastructure efficiency:
  - air traffic management,
  - (Single European Sky minus 10 % of emissions),
  - availability of sustainable fuel, airport facilities
3. Compensation by reforestation, Carbon capture and storage (CCS)

# Clean Energy Wire

There is a broad consensus between the industry, science and politics about the potential for climate-neutral flying, but concrete measures and instruments are needed to make it a reality, the report states.

In the long term,

- up to **50 percent** of CO<sub>2</sub> emissions can be saved through more efficient aircraft and engines,
- a further **ten percent** through intelligent air traffic management and
- around **40 percent** through climate-neutral fuels, according to the report.

However, due to the long amount of time it takes to develop and certify new aircraft and propulsion systems and replace the fleet, major leaps in innovation are not expected before 2035, the report states (CLEW JAN 25, 2021)

In 2016, Governments adopted **CORSIA, the Carbon Offsetting and Reduction Scheme for International Aviation**, to stabilize net CO<sub>2</sub> emissions from international aviation from 2021.

*The roadmap presents four approaches to drastically reduce the climate impact of flying:*

- ① *compensation of emissions through emission certificates and carbon offset projects,*
- ② *more efficient flight management through digitalization,*
- ③ *more energy-efficient aircrafts and*
- ④ *the development of sustainable fuels.*





# Sustainable Aviation Fuel Production

**SAF** is generally acknowledged to be one of the industry's best bets when it comes to decarbonizing operations. However, at a price point that can be anywhere between three and eight times as expensive as regular fossil-based Jet A, and a supply that has been, to say the least, minuscule, there is some significant ramping up to be done. SAF still accounts for less than 1% of the global consumption of jet fuel.

**Electrofuels**, also known as e-fuels, a class of synthetic fuels, are a type of drop-in replacement fuel. They are manufactured using captured carbon dioxide or carbon monoxide, together with hydrogen obtained from sustainable electricity sources such as wind, solar and nuclear power.

The process uses carbon dioxide in manufacturing and releases around the same amount of carbon dioxide into the air when the fuel is burned, for an overall low carbon footprint. Electrofuels are thus an option for reducing greenhouse gas emissions from transport, particularly for long-distance freight, marine, and air transport.

An **Aviation Biofuel** or bio-jet fuel is a biofuel used to power aircraft and is said to be a sustainable aviation fuel (SAF). IATA considers it a key element to reducing the carbon footprint within the environmental impact of aviation. Aviation biofuel could help decarbonize medium- and long-haul air travel generating most emissions, and could extend the life of older aircraft types by lowering their carbon footprint.

Biofuels are biomass-derived fuels from plants or waste; depending on which type of biomass is used, they could lower CO<sub>2</sub> emissions by 20–98% compared to conventional jet fuel. The first test flight using blended biofuel was in 2008, and in 2011 blended fuels with 50% biofuels were allowed in commercial flights. In 2019, the IATA was aiming for a 2% penetration by 2025. Aviation Biofuel can be produced from plant sources such as Jatropha, algae, tallows, waste oils, palm oil, Babassu, and Camelina; from solid biomass using pyrolysis processed with a Fischer-Tropsch process.

## **At least 300 million litres in 2022**

IATA estimates the global SAF production has reached 300 million liters in 2022.

This is up from 100 million liters in 2021, 62.5 million in 2020, and 25 million in 2019.

# Aviation Climate Protection Strategy

## CORSIA:

### Change of Perspectives

**1,5 %**

Fleet Fuel efficiency will be improved by 1.5% per annum.

**Stabilize**

Since 2020, net carbon emissions from international aviation will be capped through carbon neutral growth.

**50 %**

By 2050, net aviation carbon emissions **will be half** of what they were in 2005.

**Since April 2022:** Sustainable aviation fuel is produced by OMV for Austrian Airlines by co-processing sustainable and regional raw materials, specifically used cooking oil. Compared to conventional jet fuel, sustainable aviation fuel delivers a reduction of greenhouse gas emissions of more than 80% over the entire life cycle.

# Fleet Renewal: 5th A 320neo & B 787-9 Dreamliners

*All 5 new mid-range aircraft produce less CO<sub>2</sub>-emissions and noise.*

*Depending on the route, the operation of an Airbus A320neo can save up to 3,700 tons of CO<sub>2</sub> per year compared to the respective predecessor and is up to 20 percent lower than of comparable older-generation aircraft.*

*And the New Boeing 787-9 Dreamliner long-haul:*

*„ With 2,5 litres fuel per 100 passenger-kilometres we reduce our fuel consumption with long-haul aircraft by 20 percent“*

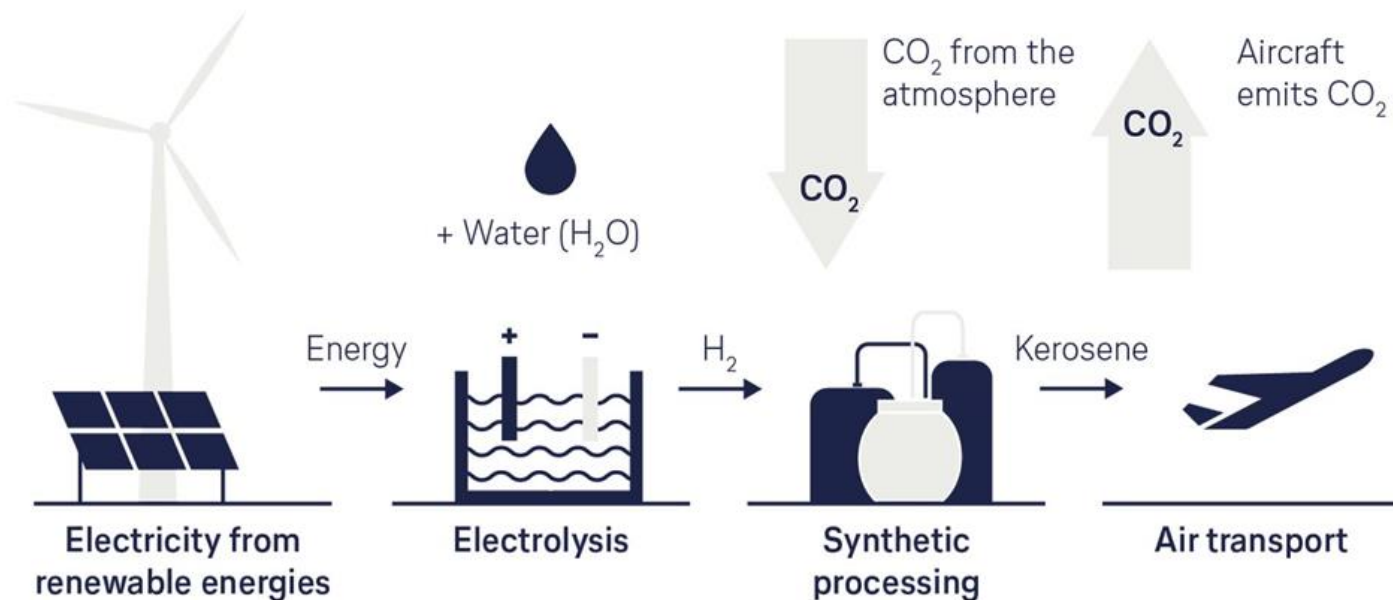
*(COO Francesco Sciortino  
Austrian Airlines)*



# PtL Power-to-Liquid generating SAF

**Sustainable aviation fuels (SAFs), where the carbon comes from CO<sub>2</sub> in the atmosphere.**

THIS IS HOW THE POWER-TO-LIQUID-PROCEDURE WORKS



**LUFTHANSA GROUP**



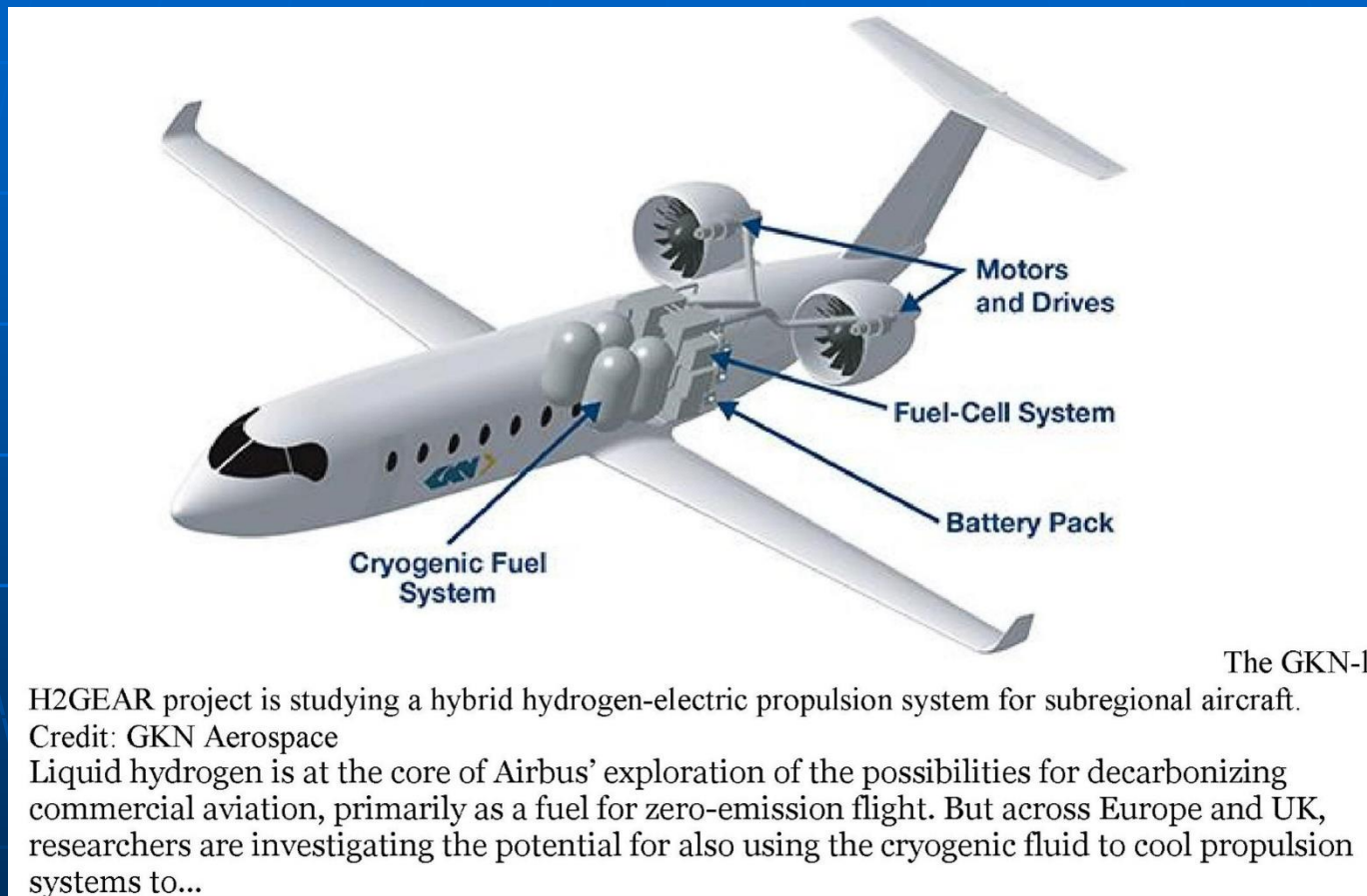
# Technological Developments:



## CFM RISE Open Rotor Concept

New Technology Development Program  
to Cut CO2 Emissions by 20%

# Studies: Hybrid Hydrogen-electric & Cryogenic Propulsion System



**Cryogenic** = **In physics**, cryogenic is the production and behaviour of materials at **very low temperatures**

# Airbus' Hydrogen-powered Narrowbody Concept



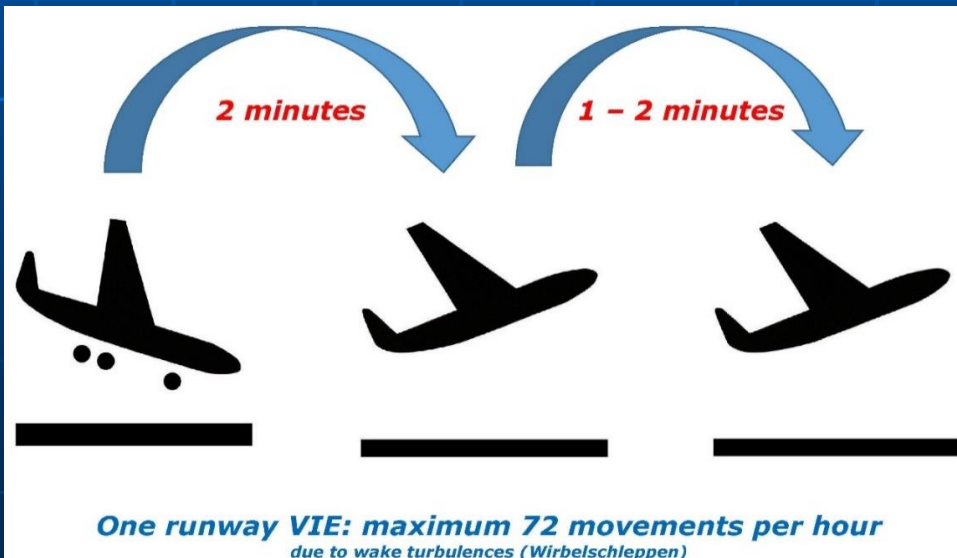
**2035:  
*would accommodate  
up to 200 passengers***

# Global Strategic Items

## Slots

### Airport slot/Airway slot ("Zeitfenster/Zeitraum")

is a permission granted by the owner of an airport/or air traffic authority, which allows the grantee to schedule a landing/departure/flight during a specific time period.



Instead of the normal requirement to use at least 80% of a given slot series to retain historic rights in those slots, new 50 % slot usage threshold within the EU for winter season 2021/22:

Due to Omikron-decreases and travel restrictions also 2022

and this slot-directive for winter  
Lufthansa has to serve 18.000 empty flights  
**not to loose, and to cover their slots, for summer.**



# Quality Aspects

## ■ Smooth-running customer processes

*Happy passenger*

## ■ Punctuality

*In 2023, Austrian Airlines exceeded the previous year's level and achieved a regularity rate of 98.9%. Punctuality was also further improved to around 80%. Austrian thus remains one of the most punctual airlines in Europe. After ranking 5th among the most punctual airlines in 2022, Austrian Airlines was permanently among the top ranks in 2023 and was even ranked 1st in Europe for three months (says COO Francesco Sciortino).*

### Trend Report

Airline	Nov 23	Oct 23	Sep 23
<b>GLOBAL AIRLINE RANKING</b>			
1 Delta Air Lines (DL)	91.20%	90.84%	86.40%
2 United Airlines (UA)	88.44%	86.31%	82.54%
3 American Airlines (AA)	86.65%	85.03%	82.28%
4 Qatar Airways (QR)	86.06%	87.58%	87.84%
5 Azul (AD)	84.45%	82.91%	85.71%
<b>ASIA PACIFIC REGION RANKING</b>			
1 AirAsia (AK)	86.65%	81.79%	78.72%
2 Vietnam Airlines (VN)	86.25%	83.14%	81.13%
3 Philippine Airlines (PR)	84.27%	82.74%	83.38%
4 Peach Aviation (HM)	81.25%	78.86%	78.91%
5 ANA (NH)	81.14%	86.07%	83.02%
<b>NORTH AMERICA REGION RANKING</b>			
1 Delta Air Lines (DL)	91.20%	90.84%	86.40%
2 United Airlines (UA)	88.44%	86.31%	82.54%
3 American Airlines (AA)	86.65%	85.03%	82.28%
4 Southwest Airlines (WN)	84.52%	78.41%	78.38%
5 Alaska Airlines (AS)	84.50%	86.07%	83.81%
<b>EUROPE REGION RANKING</b>			
1 Austrian (OS)	87.38%	85.57%	85.47%
2 Vueling (VY)	86.31%	80.70%	81.18%
3 Norwegian Air Shuttle (DY)	86.11%	86.10%	87.98%
4 Transavia France (TO)	84.49%	78.20%	75.34%
5 Eurowings (EW)	84.22%	74.10%	69.15%
<b>LATIN AMERICA REGION RANKING</b>			
1 Azul (AD)	84.45%	82.91%	85.71%
2 Caribbean Airlines (BW)	83.98%	86.47%	83.55%
3 Copa Airlines (CM)	82.30%	83.71%	89.88%
4 Aeromexico (AM)	81.79%	86.08%	76.77%
5 Sky Airline (H2)	79.13%	77.60%	73.99%
<b>MIDDLE EAST &amp; AFRICA REGION RANKING</b>			
1 Sefair (FA)	83.98%	80.81%	82.29%
2 Oman Air (WY)	82.08%	83.00%	84.02%
3 Qatar Airways (QR)	86.06%	87.58%	87.84%
4 Saudia (SV)	83.45%	84.49%	84.99%
5 Gulf Air (GF)	82.08%	83.02%	85.91%
<b>LOW-COST CARRIER RANKING</b>			
1 Sefair (FA)	83.98%	80.81%	82.29%
2 AirAsia (AK)	86.65%	81.79%	78.72%
3 Vueling (VY)	86.31%	80.70%	81.18%
4 Jetstar Japan (GK)	86.28%	86.04%	85.04%
5 Norwegian Air Shuttle (DY)	86.11%	86.10%	87.98%

## ■ Alliance Ties

*Customer-orientated cooperations with other airlines:*

*Lufthansa-Group*

*Star Alliance*

## ■ Efficiency

*Clear travel processes*

## ■ Safety – Security

*Technics-Maintenance-Operations  
-Customer Services*

## ■ Environment – Resources – Sustainability

*Green orientated airlines & airports*

## ■ Infrastructure & Objects

*Aircraft Interior-Lounges-Internet Services*

# OS – Best Airline Staff in Europe

## SKYTRAX 2023

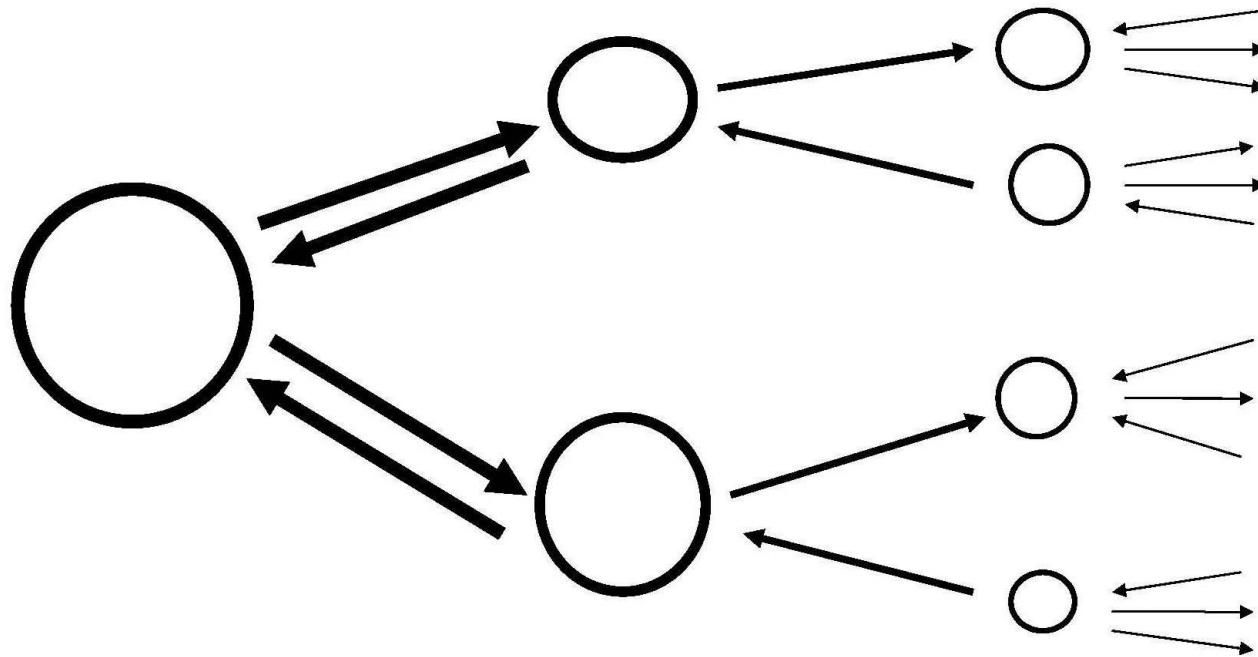


**Austrian Airlines CEO Annette Mann**, said: "We are all really proud that we have been named European Champion in the category 'Best Airline Staff Service'. This shows that our customers feel the passion for service and hospitality that we aim to live in this company every day. Particularly after the challenging Corona years, this award has a very special meaning for us and motivates us even more to give our very best in the upcoming busy summer season!" (20JUN2023)

- 1 Austrian Airlines
- 2 Air France
- 3 Swiss International Air Lines
- 4 Aegean Airlines
- 5 British Airways
- 6 Virgin Atlantic
- 7 Finnair
- 8 Iberia
- 9 KLM Royal Dutch Airlines
- 10 Turkish Airlines



# Intermodal Hubbing



## **Major Hubs**

Airports  
Harbours  
Railway Stations

## **Smaller Hubs**

Railway Stations  
Bus Terminals  
Mode Stations  
Subways

## **Mini Hubs**

Railway Stations  
Bus Stations  
Subway Stations

Taxis  
Trams  
Funiculars  
Vaporetti

# Aircraft Range changed

Since 2004/2005 airlines are able to transport passengers up to **19 hours on nonstop** scheduled services.

Route	Airline	Distance (km)	Flight time	Aircraft	
New York-Singapore	SQ	16.200	<b>19 hrs 16 min</b>	A 350-900	2019
Doha-Auckland	QR	14.525	17 hrs 30 min	B 777-200LR	2017
Perth-London	QF	14.498	17 hrs 00 min	B 787-9	2018
Sydney-Dallas	QF	13.804	15 hrs 25 min	B 747-400ER	
Johannesbg-Atlanta	DL	13.582	16 hrs 40 min	B 777-200LR	
Dubai-Los Angeles	EK	13.420	16 hrs 35 min	A 380-800	
Dubai-Houston	EK	13.144	16 hrs 20 min	B 777-300ER	
New York-Hongkong	CX	12.990	16 hrs 00 min	B 777-300ER	
Frankfurt-Buenos Aires	LH	11.477	13 hrs 45 min	B 747-400	
Vienna-Tokyo	OS	9.176	12 hrs 05 min	B 777-200ER	

- Flight time is dependent on: Winds (head, tail, cross), jet stream, flight level, ATC-route



# Aircraft Ranges

<b><i>Aircraft longest Ranges</i></b>	<b><i>km</i></b>	<b><i>nautical miles</i></b>	
Boeing 747 SP	12 320	6 650	Iran Air THR-NYC, TWA
Boeing 777-200LR	15 843	8 555	
Airbus 340-500	17 000	9 000	
Airbus A 380	14 800	8 000	
Boeing B 747-8I	14 320	7 730	
Boeing B 787-9	14 140	7 635	Perth-London
Airbus A 350-900	16 100	8 700	
Airbus A 350-900ULR	18 000	9 700	Singapore Airlines (reduced pax load)

Flying Simple 26DEC22



# World Aviation Potential

**Over 80% of the world has never taken a flight.**

The Boeing CEO said: ***"Less than 20 percent of the world's population has ever taken a single flight, believe it or not. This year alone, 100 million people in Asia will fly for the first time."***

- In 2050 round 50 % of the polulation will live in cities
- Mobility is improving
- New potentials in large communities
- Restrictions do not work → only effectiveness, efficiency and improvements
- Sustainability is a paradigma of aviation
- 950 airports around our globe are planned to be constructed
- China plans to build 159 new airports until 2035 (they boasted 241 certified transport airports at the end of 2020-400 at 2035) – 10 airports per year!
- Austria is up to 60 % dependend on exports and incoming tourism, and therefore on air traffic



# Doubling of Fleets til 2042

Expected Passengers 2042: 8 bn.

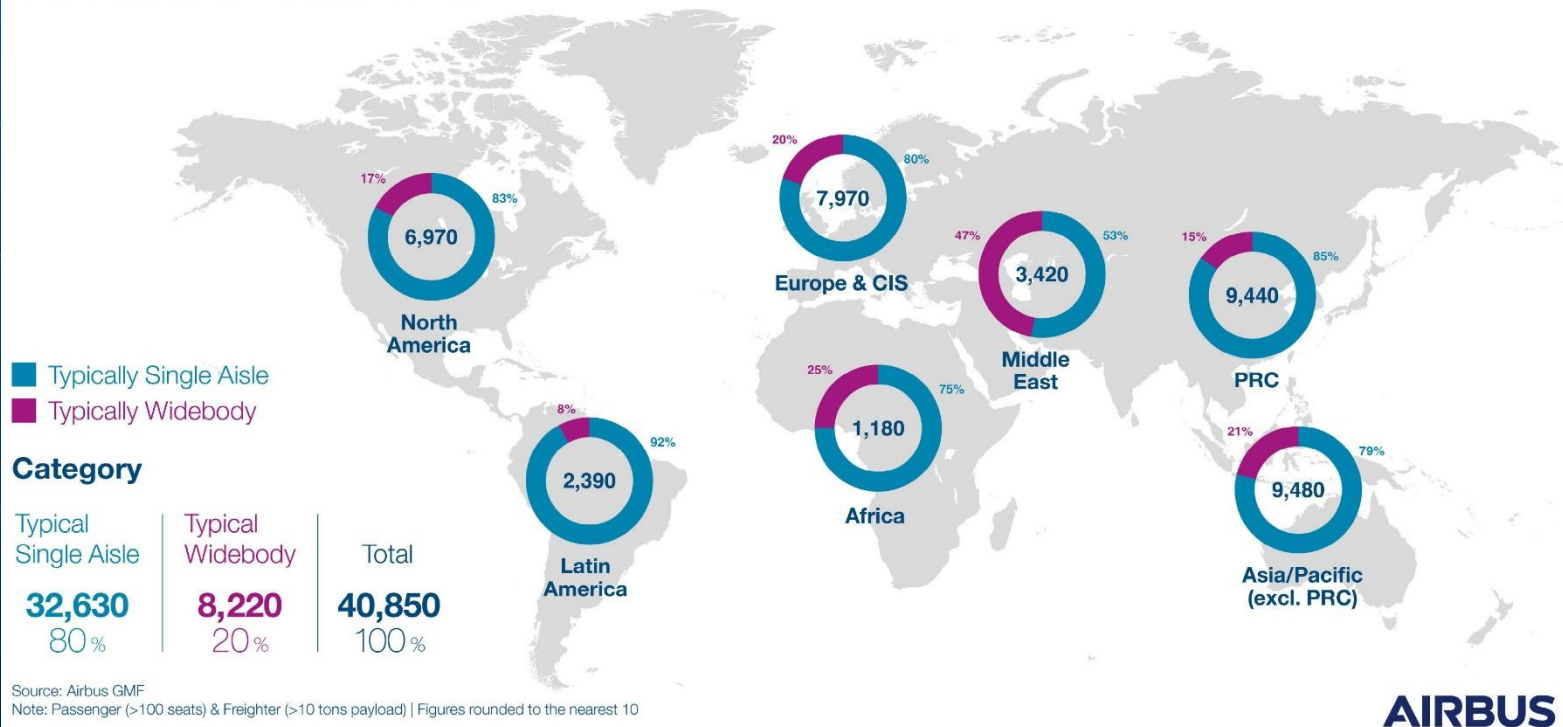
*15,000 of these will be for replacement of older less fuel efficient models.*

*New models: 80 % Single Aisle - 20% Widebody*

*Airbus 40.850 – Boeing 42.600 – only 6.000 of today's aircraft left*

## 40,850 new deliveries between 2023 and 2042

80% typical Single Aisle - 20% typical Widebody





# World Air Travel doubles in 2 decades: Average Growth: 3,3 % per Year, predicted 8,2 bn. Air Travellers in 20 years (2043).

Post-Pandemic Passengers per Year (2023):

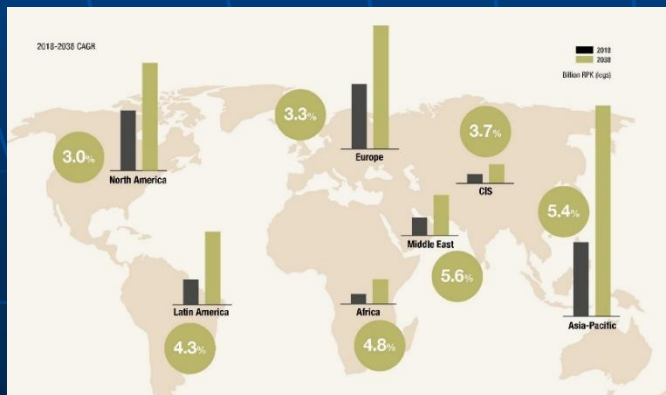
**4,7 bn.**

IATA-Forecast in 3 scenarios:

**8,2 bn.**

(per year between +3,2-3,4 %)

IATA Airbus GMO 2023-2042 • ACI 09MAR 2023-IATA SIN 17FEB24



## Growth and change in passenger journeys by region

(% 2021 - 2039)

World

**3.2%**

year of recovery to 2019 levels: 2023

Our scenario analysis indicates that global air passenger growth could plausibly be in the range of **1.5% and 3.6%** over the next 20 years.

North America

**1.7%**

year of recovery to 2019 levels: 2023

Latin America

**2.9%**

year of recovery to 2019 levels: 2023

Africa

**3.6%**

year of recovery to 2019 levels: 2024

Middle East

**3.6%**

year of recovery to 2019 levels: 2024

Asia Pacific

**4.5%**

year of recovery to 2019 levels: 2023

Europe

**2.0%**

year of recovery to 2019 levels: 2024

**3.2%**

annual average growth in global air passenger journeys over the next **20 years.**



## **5. The Austrian Aviation**

# Austrian Aviation Data 2023

- The Austrian Airlines-Group flies 13,9 million passengers a year in and out of Austria
- The Austrian airports handled last year 2023 33,2 million passengers
- 3.500 aircraft cross Austria on a beautiful summer day (2023)



## **Vienna International Airport owners**

Australian pension fund IFM Global Infrastructure Fund (IFM GIF) made a mandatory takeover offer for Vienna Airport AG ([VIEV.VI](#)) after increasing its stake in the pandemic-hit airport operator to more than 40% (June 13, 2022-Reuters) – offer was not accepted by the public and management.

The Austrian capital Vienna and the adjoining province Lower Austria hold 20% each, employees hold another 10% of Vienna Airport's 84 million shares.

# Vienna International Airport

**Vienna Airport experts predict  
a passenger demand **31 mio. Pax** in 2024,  
a positive result of at least 210 mio. Euros**

19JAN2023 FWAG Vienna Int. Airport-28FEB 2024

*Vienna Airport (23,000 employees) handled **29.5 million passengers** last year and is approaching **31 million passengers** this year. In January 2024 the increase was 9.5 percent.*

*"It wouldn't surprise me if we reach **one billion in sales this year**," says airport board member Günther Ofner.*

*"We are seeing a comeback by airlines, increasing passenger demand and new destinations," says airport board member Julian Jäger. "This year we are looking at a strong summer flight schedule with **190 destinations from 60 airlines**." The positive development at Austria Airlines with 121 destinations and at Ryanair with 79 destinations is particularly pleasing. Last year, Vienna-Schwechat was the **fifth most punctual airport in Europe** and also the most punctual hub in the Lufthansa network.*



# Changes in Aviation Austria 2023-2019



Mio. Pax	2023	Share	2022	Share	2021	2020	2019
Vienna Int. Airport	29,5		23,7		10,4	7,8	31,7
Austrian Airlines	13,9	46,9%	11,1	47,1%	5,0	3,1	14,7
Ryanair (former Lauda)	6,0	20,2%	4,9	20,9%	2,0		2,7
WizzAir	2,0	6,9%	1,6	6,8%	0,9	0,6	2,1

FWAG Verkehrsreport 18JAN24



# VIE Airport: Southern Expansion til 2027 420 million € Investment

## ***Vienna Airport accelerates terminal expansion, commercial space set to increase by +50%***

*Vienna Airport began intensive construction this week on its Southern Terminal Expansion, which will come into operation in 2027.*

*As part of the €420 million investment, the airport will expand its shopping and restaurant space by +50% to more than 30,000sq m.*

*As reported, some 30 additional retail and dining outlets will come into play covering around 10,000sq m. This will house renowned Austrian and international brands to create "an extensive and diversified retail and food & beverage offering for passengers".*

*Vienna Airport said that "tenant acquisition efforts are already in full swing and are being implemented with digital support. In a virtual 3D tour, interested parties can explore the building's interior areas and possible commercial space, take a closer look at passenger flows and leisure areas, and get a realistic impression of the entire terminal environment".*

*The Southern Expansion will feature an updated lounge offer. Alongside the new Austrian Airlines Lounge across 4,000sq m, a Vienna Airport lounge featuring an additional 2,000sq m will open, characterised by elements, colours and textures of Viennese 'Art Nouveau'.*

*Vienna Airport said that "the flair of Austrian and Viennese elegance will be perceptible and palpable in the new airport lounge and the entire Southern Expansion. Accordingly, local and international passengers will not be confronted with a sterile terminal building but a modern, high-quality and exclusive terminal environment with charm and a local flavour linking passengers to the destination of Vienna".*



# Austrian Airlines Basic Fleet



**6 Boeing 777-200 ER**  
306 seats OE-LPA - OE-LPF



**3 Boeing 767-300**  
211 seats OE-LAE, OE-LAY, OE-LAZ



**3 Airbus A 321-211**  
200 seats OE-LBD - OE-LBF



**3 A 321-111**  
200 seats OE-LBA – OE-LBC



**29 A 320-200**  
168-180 seats OE-LBI - OE-LBZ,  
OE-LXA - OE-LXE, OE-LZA – OE-LZF



**17 Embraer 195**  
120 seats OE-LWA – OE-LWQ

# Fleet Growth Austrian Airlines: Modern – sustainable Aircraft

## 5 new Airbus A 320neo

Depending on the route, an Airbus A320neo **emits up to 3,700 tons of CO2 less per year** and compared to the previous model, as they **consume up to 20 percent less fuel** due to modern engine technology and optimized aerodynamics.

The new aircraft make **less emissions**, **they increase profitability** and represent an important long-term investment in the Vienna hub.

- **Innovative airspace cabin** enhances travel comfort with a **capacity of 180 seats**,
- offers **up to 60 percent more capacity for carryon luggage**.
- The Neos count with a **new, flexible lighting system** that adapts to the natural biorhythm.



## 11 new Dreamliners B 787-9

### as of Summer 2024

The ultra-modern long-haul aircraft consume on average **only 2.5 liters of kerosene per passenger and 100 kilometers flown**. That is around 30 percent less than predecessor aircraft. The CO2 emissions are also greatly improved.

▪ Length	63,0 m
▪ Seats	290
▪ Composite materials	50 %
▪ Cruising Speed	902 km/h
▪ Max- Takeoff weight	252.650 kg
▪ Range	14.140 km
▪ List Price	290 mio. US\$



# OS-Fleet Improvements til 2028



<b>OS-Fleet 2019</b>	<b>82 aircraft</b>
<b>OS-Fleet 2020</b>	<b>79 aircraft</b>
<b>OS-Fleet 2021</b>	<b>61 (21 aircraft reduced !)</b>
<b>OS-Fleet 2022</b>	<b>63 aircraft</b>
<b>OS-Fleet 2023</b>	<b>66 aircraft</b>
<b>OS-Fleet 2024</b>	<b>68 aircraft</b> (add. 2x B 787-9/ 1 A 320neo)
<b>OS-Fleet 2028</b>	<b>half of fleet renewd</b>



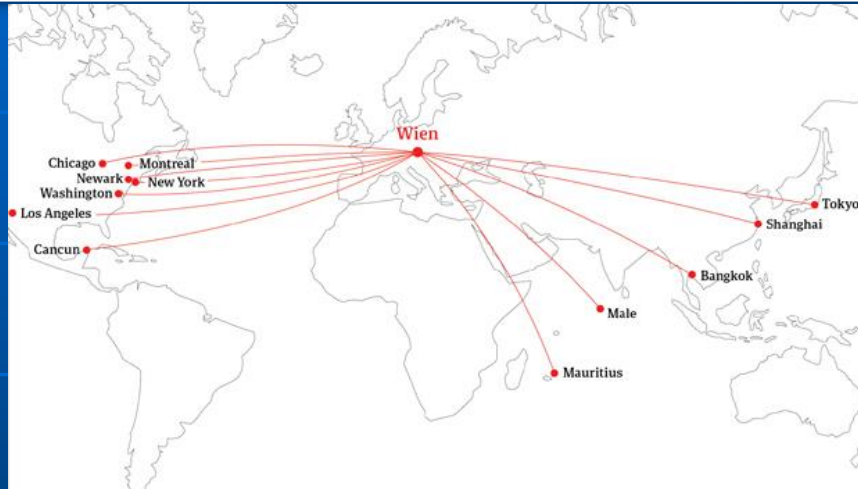


# Austrian Airlines Improvements

## Summer Schedule 2024:

### Boston, Bremen, Tbilisi

### Boeing B 787-9 Dreamliner



### 125 Destinations

#### New: Boston

Los Angeles, Tokyo

#### New: Bremen

#### New: Tbilisi

Sevilla, Malaga,

Rovaniemi, Kittilä, Vilnius

Porto, Marseille



# Key Facts of an Airline: OS

**125** destinations  
on 4 Continents

**24** million people  
living within catchment area  
of Vienna

**13,9** million  
Passengers  
(end of 2023)

**68** aircraft  
(14 of which are long-haul)  
(2024)

**2,34** bn. Euros  
Turnover 2023

**since 2009**  
part of Lufthansa Group



**32** destinations  
in Central  
and Eastern Europe

**46,9 %** shared  
Passenger volume  
at Vienna Airport 2023

**310** flights  
per day

**127** mio. Euros  
profitable result  
2023

**65** years  
in operations  
(since 1958)

**6.121** excellent employees  
(2023)



# Laudamotion?

## = Ryanair



January 2018: Niki Lauda acquired Niki (Rest of AirBerlin, "Austrian Solution")

March 2018: Niki Lauda sells 75 % to Ryanair

December 2018: Ryanair acquires 100% of Laudamotion

December 2020: Vienna Base and AOC closed

**Lauda Europe now based in Malta.**

Bases Frankfurt, Stuttgart, Berlin-Tegel, Dusseldorf Weese, Hahn closed

- Lauda Europe Ltd. (Malta) Fleet: 27 Airbus A 320 ← 29 (instead of 38)
- will fly into Vienna 2024: 19 ← 10 ← 6
- Passengers 2023: 6 mio. ← 6,5 ← 3
- Destinations (2023) 75 ← 50 ← 30
- Employees in Austria: 570 ← 330 ← 150
- Employes total: 920 ← 1.100
- Flight numbers: FR (Ryanair) ← OE
- Austrian Licences: changed to Malta

**UK and Spanish Ryanair Pilots** voted overwhelmingly for a 20% pay cut, **German Ryanair Pilots** wanted to include a pay adjustment downwards of 20% and increased scheduling flexibility (until June 2024) or **Malta Air Contracts** used (not in Germany).

**To handle our future**  
**we need intelligent processes.**

***Thank you!***  
***Mario Rehulka***  
***Vienna – Austria***

