

IATA

Annual Review 2022





Contents

- 04** Members' list
- 06** Willie Walsh, Director General
- 08** Robin Hayes Chair, Board of Governors

- 11** Industry Story
- 16** Safety
- 22** Security
- 24** Regulations
- 30** Environment and Sustainability
- 34** Passenger Experience
- 36** Cargo
- 40** Financial Services
- 42** Diversity & Inclusion
- 44** Airline Retailing



International Air Transport Association
Annual Review 2022
78th Annual General Meeting and
World Air Transport Summit, Doha, Qatar

Members' list

A

ABX Air
 Aegean Airlines
 Aer Lingus
 Aero Republica
 Aeroflot
 Aerolineas Argentinas
 Aeromar
 Aeromexico
 Africa World Airlines
 Air Algerie
 Air Arabia
 Air Astana
 Air Austral
 Air Baltic
 Air Botswana
 Air Burkina
 Air Cairo
 Air Caledonie
 Air Canada
 Air Caraibes
 Air China
 Air Corsica
 Air Dolomiti
 Air Europa
 Air France
 Air Guilin
 Air India
 Air Koryo
 Air Macau
 Air Madagascar
 Air Malta
 Air Mauritius
 Air Moldova
 Air New Zealand
 Air Niugini
 Air Nostrum
 Air Peace
 Air Serbia
 Air Seychelles
 Air Tahiti
 Air Tahiti Nui
 Air Tanzania
 Air Transat
 Air Vanuatu
 AirBridgeCargo Airlines
 Aircalin
 Airlink
 Alaska Airlines
 Albastar
 Allied Air
 AlMasria Universal
 Airlines

American Airlines
 ANA
 APG Airlines
 Arkia Israeli Airlines
 Asiana Airlines
 ASKY
 ASL Airlines France
 Atlantic Airways
 Atlas Air
 Austrian
 Avianca
 Avianca Costa Rica
 Avianca Ecuador
 Azerbaijan Airlines
 Azores Airlines
 Azul Brazilian Airlines

B

Badr Airlines
 Bahamasair
 Bamboo Airways
 Bangkok Airways
 Batik Air
 Batik Air Malaysia
 Belavia Belarusian
 Airlines
 Biman Bangladesh
 Airlines
 Binter Canarias
 Blue Air
 BoA Boliviana de
 Aviacion
 Braathens Regional
 Airways
 British Airways
 Brussels Airlines
 Bulgaria Air

C

Cabo Verde Airlines
 CAL Cargo Airlines
 Camair-Co
 Cambodia Angkor Air
 Capital Airlines
 Cargojet Airways
 Cargolux
 Caribbean Airlines
 Carpatair
 Cathay Pacific
 Cebu Pacific

China Airlines
 China Cargo Airlines
 China Eastern
 China Express Airlines
 China Postal Airlines
 China Southern Airlines
 CityJet
 Condor
 Congo Airways
 Copa Airlines
 Corendon Airlines
 Corsair International
 Croatia Airlines
 Cubana
 Cyprus Airways
 Czech Airlines

D

Delta Air Lines
 DHL Air
 DHL Aviation

E

Eastern Airlines
 Eastern Airways
 Egyptair
 EL AL
 Emirates
 Ethiopian Airlines
 Etihad Airways
 EuroAtlantic Airways
 European Air Transport
 Eurowings
 EVA Air
 Evelop Airlines

F

FedEx Express
 Fiji Airways
 Finnair
 Fly Baghdad
 flydubai
 FlyEgypt
 Flynas
 Flyone
 Freebird Airlines
 French Bee
 Fuzhou Airlines

G

Garuda Indonesia
 Georgian Airways
 German Airways
 GOL Linhas Aereas
 Gulf Air
 GX Airlines

H

Hahn Air
 Hainan Airlines
 Hawaiian Airlines
 Hebei Airlines
 Hi Fly
 Hong Kong Air Cargo
 Hong Kong Airlines
 Hong Kong Express
 Airways

I

Iberia
 Icelandair
 IndiGo
 Iran Air
 Iran Airtour Airline
 Iran Aseman Airlines
 Isair
 ITA Airways

J

Japan Airlines
 Japan Transocean Air
 Jazeera Airways
 Jeju Air
 JetBlue
 Jin Air
 Jordan Aviation
 Juneyao Airlines

K

Kam Air
 Kenya Airways
 KLM
 Korean Air
 Kunming Airlines
 Kuwait Airways

L

LAM
 Lao Airlines
 LATAM Airlines Brasil
 LATAM Airlines Colombia
 LATAM Airlines Ecuador
 LATAM Airlines Group
 LATAM Airlines Paraguay
 LATAM Airlines Peru
 LATAM Cargo Brasil
 LATAM Cargo Chile
 Loong Air
 LOT Polish Airlines
 Lucky Air
 Lufthansa
 Lufthansa Cargo
 Lufthansa CityLine
 Luxair

M

Malaysia Airlines
 Mandarin Airlines
 Martinair Cargo
 Mas Air
 Mauritania Airlines
 International
 MEA
 MIAT Mongolian Airlines
 MNG Airlines
 Myanmar Airways
 International

N

National Airlines
 NCA Nippon Cargo
 Airlines
 Neos
 Nesma Airlines
 Nile Air
 NordStar
 Nordwind Airlines
 Nouvelair

O

Okay Airways
 Olympic Air
 Oman Air
 Overland Airways

P

Paranair
 Pegas Fly
 Pegasus Airlines
 PGA Portugalia Airlines
 Philippine Airlines
 PIA Pakistan
 International Airlines
 Polar Air Cargo
 Poste Air Cargo
 Precision Air
 Privilege Style

Q

Qantas
 Qatar Airways
 Qazaq Air

R

Ravn Alaska
 Rossiya Airlines
 Royal Air Maroc
 Royal Brunei
 Royal Jordanian
 Ruili Airlines
 RusLine
 RwandAir

S

S7 Airlines
 Safair
 SAS
 SATA Air Acores
 Saudi Arabian Airlines
 SCAT Airlines
 SF Airlines
 Shandong Airlines
 Shanghai Airlines
 Shenzhen Airlines
 Sichuan Airlines
 Silk Way West Airlines
 Singapore Airlines
 SKY Airline
 Smartavia
 Smartwings
 Solomon Airlines
 Somon Air
 South African Airways
 SpiceJet
 SriLankan Airlines
 SunExpress
 Suparna Airlines
 SWISS
 Syrianair

T

TAAG Angola Airlines
 TACA
 TAP Portugal
 TAROM
 Tassili Airlines
 Thai Airways
 International
 Thai Lion Air
 Thai Smile
 Tianjin Airlines
 TUIfly
 Tunisair
 Turkish Airlines
 T'way Air

U

Ukraine International
 Airlines
 UNI AIR
 United Airlines
 UPS Airlines
 Ural Airlines
 Urumqi Air
 UTair
 Uzbekistan Airways

V

Vietjet
 Vietnam Airlines
 Virgin Atlantic
 Virgin Australia
 Vistara
 Volaris
 Volotea
 Vueling

W

Wamos Air
 West Air
 WestJet
 White Airways
 Wideroe
 World 2 Fly

X

Xiamen Airlines

Y

YTO Cargo Airlines

WILLIE WALSH, DIRECTOR GENERAL

Keeping the world connected

Aviation is resilient and on the rise. After the worst downturn in our history, we have turned the corner on the COVID-19 pandemic.

Industry losses are expected to reduce to \$9.7 billion in 2022; down from \$42.1 billion in 2021. That is a huge improvement from losses of \$137.7 billion in 2020.

In growing numbers and with rising excitement and enthusiasm, people are again enjoying the freedom to travel, to connect with one another, and to see the world. By the end of 2023, most regions will be at—or exceeding—pre-pandemic levels of demand.

Pandemic lessons

Looking back at the pandemic, we can point to our service with pride. Where permitted by governments, airlines kept the world connected. Airlines kept vital supply lanes open to deliver lifesaving vaccines and medical supplies. And they operated to the highest levels of safety throughout. Over and over, the aviation workforce rose to the occasion.

In fact, the importance of aviation was made absolutely clear by the pandemic restrictions. People recognized that their quality of life deteriorated and economies suffered.

This pandemic will not be the last. It is vital, therefore, that we draw the correct lessons so that we can be better prepared next time. Top of the list of lessons learned is that travel restrictions did little to contain the spread of COVID-19. The World Health Organization (WHO) said

this from the beginning, but far too many governments ignored their sound advice. Governments must do better next time.

Working with governments

Many governments recognized aviation's vital role as an economic lynchpin, providing financial relief to numerous airlines. As governments now rebuild their regulatory agendas, it is critical that they continue to focus on regulations that create value. IATA will be vigilant and remind governments that the benefits of regulation must exceed the costs they create.

Slot regulation is a case in point. The Worldwide Airport Slot Guidelines are fundamental to delivering reliable schedules with insufficient airport capacity. When government-imposed travel restrictions stopped airlines operating, flexibility on slot rules preserved networks and connectivity. Now, as routes are being re-opened and demand returns, we still require flexibility in slot rules, particularly as airports race to hire back staff to meet surging demand. There is absolutely no reason to treat the return to normal as an opportunity to rewrite the slot rules that performed admirably before the lockdown.

Likewise, we see the temptation to introduce new consumer regulations, on everything from airline service offerings to accessible travel. We are committed to making travel accessible, but the focus of any new rules needs to be on addressing the operational issues in this area, rather than imposing penalties.

Regulators must not tolerate infrastructure providers seeking to recover pandemic losses by using their natural monopoly powers to price-gouge their customers. With some airports already in the process of implementing double-digit increases, governments must understand that the light touch regulations proposed by many airports come with a heavy price to pay for consumers, the economy, and airlines.

Sustainability

At our 77th AGM, our members resolved to achieve net zero carbon emissions by 2050. That was quickly followed by similar commitments across the industry. The missing component is a similarly ambitious long-term target by governments, which should be articulated at this year's Assembly of the International Civil Aviation Organization (ICAO).

The Assembly will also be an opportunity for governments to shore-up their support for CORSIA (Carbon Offsetting and Reduction Scheme for International Aviation) with a sensible baseline agreement that fairly recognizes the adjusted baseline of 2019. Individual governments must not undermine CORSIA's effectiveness with competing, duplicative, or politically divisive extra-territorial initiatives.

To achieve net zero by 2050, airlines must rely on infrastructure, supplier partners, and the offset providers to do their part with credible initiatives that deliver real reductions. The game changer, however, is sustainable aviation fuel (SAF), which is expected to account for about 65% of our carbon

mitigation efforts by 2050. Airlines bought every drop of SAF that was available in 2021 and made forward purchase agreements worth some \$17 billion. As with the wind and solar energy transitions, the tipping point will be facilitated by government incentives, not taxes.

Diversity

The last challenge to highlight is improving gender diversity. We have made progress, but aviation continues to be male dominated. By not having better gender balance, we are short-changing our industry

on talent, and in the long term this is not sustainable. There is no way to successfully address labor shortages if we do not take full advantage of the female half of the population. Change is happening but we must make it happen faster through the examples of the IATA Diversity and Inclusion Awards and the commitments of the 25by2025 initiative.

IATA

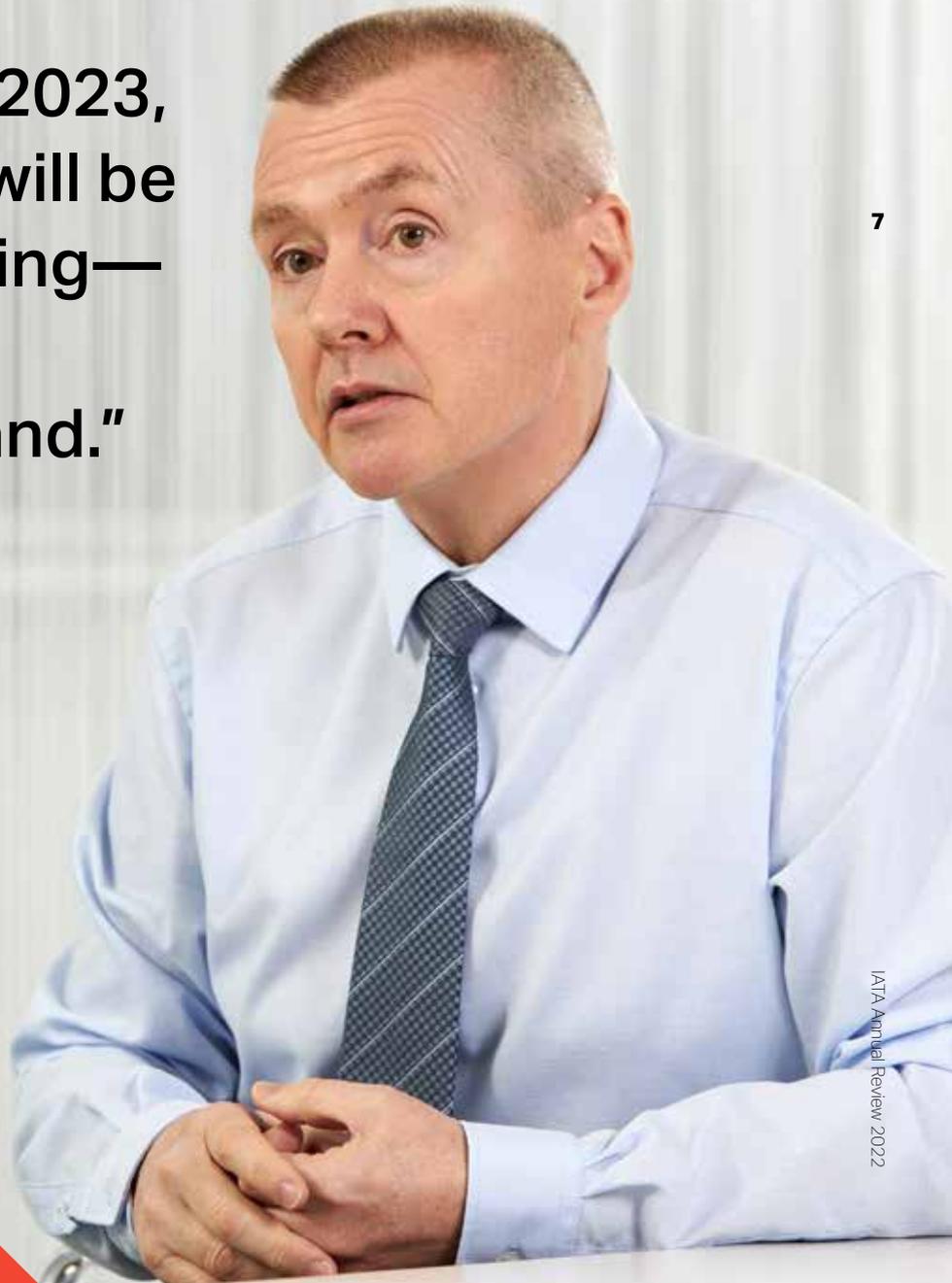
In the 14 months since taking on the responsibilities of Director General, I have gained a deep

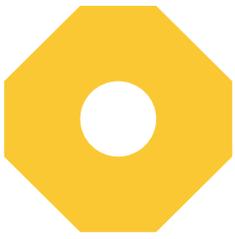
appreciation of the excellent work being done by the IATA team in serving the needs of our members. Examples of their efforts are present throughout this document. This includes our financial settlement systems that have remained reliable even under extreme stress. I am determined to make IATA even more effective in the coming year and I know my IATA colleagues share this commitment.

**Willie Walsh,
Director General**

Willie Walsh, Director General

"By the end of 2023, most regions will be at—or exceeding—pre-pandemic levels of demand."





ROBIN HAYES, CHAIR, IATA BOARD OF GOVERNORS, CEO OF JETBLUE AIRWAYS

Accelerating the energy transition

Q Though the pandemic is not completely behind us, the recovery is underway. Are you optimistic? And what do we need to learn from the two years of COVID-19?

Yes, I'm incredibly optimistic. After more than two years, we are turning the corner on COVID and are on a path to sustained recovery, with travel almost back to 2019 levels in several parts of the world. Key to this rebound has been the removal of many of the restrictive COVID travel policies.

Throughout the pandemic, as an industry we've had to face the challenges of operating with a patchwork of entry regulations that have been difficult for airlines and travelers alike. We've learned the importance of working with governments worldwide to streamline entry requirements to countries for customers and airlines. Many of these requirements are no longer in place, but we need to remain focused on ensuring unified protocols and procedures so that we can be better prepared for the next challenge that we face as an industry.

Q As people return to traveling, how have customer expectations changed, and are there demand shifts that will require a response at the industry level?

As an industry, we were already focused on technology before the pandemic. Technology proved an incredible resource because it provided the tools and services to reduce our customers' shared

touchpoints while keeping a focus on safety and social distancing. We've seen that customers appreciate and adapt to technology enhancements, and we are certain that their expectations moving forward will be on the increasingly seamless experience that we can provide through technology.

We're also seeing that customers appreciate the enhanced cleaning measures that our industry introduced during the pandemic. Though the mask mandates have dropped in many of the countries around the world, we're also going to see a number of travelers continue wearing masks.

We've seen the demand for leisure travel come roaring back, with some airlines and airports reporting the highest passenger numbers since the start of the pandemic.

Business travel is not recovering as quickly, but we're seeing trends that show that it, too, is getting back on track. Companies know that virtual networking is limited, and that business travel is vital to attracting clients and supporting collaboration and teamwork.

Q What would you say to airports that are campaigning for reduced economic regulation?

We need more than ever to work together to support the recovery of our industry, and a key way to do this is to ensure that we're protecting our customers. Without strong economic regulation, airports and air navigation service providers (ANSPs) can operate as a monopoly in any given market. As such, they could arbitrarily and unfairly raise their prices to the detriment of travelers and airlines.



"The volatility of energy markets is highlighting our need to transition even more quickly to sustainable aviation fuels (SAF)."



industry. We need to continue to tackle it and to ensure that our partners, including governments, play their part in solving long-standing issues. No one airline or airport or aircraft manufacturer will be able to move the needle forward alone. I was pleased that we passed Fly Net Zero at our Annual General Meeting last year. We need everyone, especially our business partners in the industry, to continue investing and innovating in technologies and products that allow us to keep our forward momentum, from aircraft that can use 100% sustainable aviation fuels (SAF) to improved aircraft engines and airline-related machinery.

The volatility of energy markets is highlighting our need to transition quickly to SAF. Unfortunately, SAF are not being produced at levels that the industry needs, and pricing remains high. SAF are essential to our strategy for reaching net-zero. We need to work together as an industry, and we need appropriate government policy that supports the increased production of SAF, so they are more widely available and at a better price.

One of our other issues is that net-zero does come at a cost, and we need to make sure we prioritize sustainability while also protecting our business. Ultimately, I believe Fly Net Zero is going to help us be successful by coordinating the efforts of the entire industry to meet our net-zero emissions goal by 2050 and by helping us stay on track with our short- and medium-term targets.

Q As we look ahead to the next five years, what do you see as aviation's biggest challenges? And what is IATA's role in addressing them?

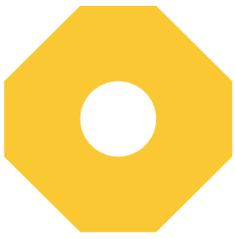
Climate change and environmental issues remain our greatest challenges. Not only is reducing our carbon emissions the right thing to do but also we're under tremendous pressure from governments and travelers to adopt measures to reduce the environmental

Without competition, we also know that there is no urgency to provide quality or timely service.

I am sure each and every airport campaigning for reduced economic regulation has no plan to abuse a position of power, but economic regulation is the only protection we can provide for travelers. Regulations also play an important part in moving our industry and services forward by encouraging airports and ANSPs to strive for investments that improve cost efficiency and service levels. Our industry is never without scrutiny, and we need economic regulation to protect our business and ensure we're all providing the highest level of service possible to travelers.

Q The industry made a commitment to achieve net-zero emissions by 2050. Are we making sufficient progress?

Climate change remains the greatest threat to our world and the greatest challenge for our



impact of travel. As the unifying organization of our industry, IATA must make sure it moves forward in the Fly Net Zero program and hits targets. And the industry must share with governments and communities the progress we're making in our efforts.

In the short term, it is imperative that we manage and retain talent in the industry. Because of the highly specialized nature of our work and the impact of the pandemic, we're experiencing workforce shortages. We are therefore laser focused on supporting the talent pipeline to ensure that we're fostering opportunities and overcoming challenges, educational or financial, to entering our industry. IATA has been providing training for aviation professionals for 50 years, and so it is going to play an important part in contributing to the industry recovery. By working with our partners, we can attract new talent and help shape the future of aviation.

As we look to the future, we also need to focus on improving diversity within our industry. IATA's 25by2025 program will be a principal enabler in increasing the number of women in senior positions by either 25% or to a minimum of 25% by 2025. Diversity, equity, and inclusion are fundamental for the future of our industry. Companies that have great diversity at the management level perform the best. Research shows that companies that rank high in diversity are also more likely to attract top talent, to improve customer and employee satisfaction, and to have better decision-making and financial returns. By establishing a culture of diversity, equity, and inclusion, the aviation industry will secure its talent pipeline for years to come.

**Robin Hayes, Chair,
IATA Board of Governors,
CEO of JetBlue Airways**

MEMBERSHIP OF THE BOARD OF GOVERNORS

As at 9 June 2022

- Abdelhamid Addou**
Chairman and Chief Executive Officer
ROYAL AIR MAROC
- Akbar Al Baker**
Group Chief Executive
QATAR AIRWAYS
- Ibrahim Al-Omar**
Director General
SAUDI ARABIAN AIRLINES
- Roberto Alvo**
Chief Executive Officer
LATAM AIRLINES GROUP
- Enrique Javier Beltranena Mejicano**
President and Chief Executive Officer
VOLARIS
- Walter Cho**
Chairman and Chief Executive Officer
KOREAN AIR
- Donald Collieran**
President and Chief Executive Officer
FEDEX EXPRESS
- Ronojoy Dutta**
Chief Executive Officer
INDIGO AIRLINES
- Pieter Eibers**
President and Chief Executive Officer
KLM ROYAL DUTCH AIRLINES
- Mohamad El-Hout**
Chairman and Director General
MIDDLE EAST AIRLINES
- Luis Gallego Martín**
Chief Executive Officer
IAG (representing Iberia)
- Goh Choon Phong**
Chief Executive Officer
SINGAPORE AIRLINES
- Robin Hayes**
[Chair of the Board]
President and Chief Executive Officer
JETBLUE AIRWAYS
- Pedro Heilbron**
Chief Executive Officer
COPA AIRLINES
- Izham Ismail**
Group Chief Executive Officer
MALAYSIA AIRLINES
- Scott Kirby**
Chief Executive Officer
UNITED AIRLINES
- Liu Shaoyong**
Chairman
CHINA EASTERN AIRLINES
- Ma Xulun**
Chairman, President, and Chief Executive Officer
CHINA SOUTHERN AIRLINES
- Christine Ourmières-Widener**
Chief Executive Officer
TAP AIR PORTUGAL
- Topi Manner**
President and Chief Executive Officer
FINNAIR
- Yvonne Manzi Makolo**
Chief Executive Officer
RWANDAIR
- Mehmet Tevfik Nane**
Vice-Chairperson of the Board (Managing Director)
PEGASUS AIRLINES
- Douglas Parker**
Chairman
AMERICAN AIRLINES
- Michael Rousseau**
President and Chief Executive Officer
AIR CANADA
- MAjay Singh**
Chairman and Managing Director
SPICEJET LIMITED
- Benjamin Smith**
Chief Executive Officer
AIR FRANCE / KLM (representing Air France)
- Carsten Spohr**
Chairman and Chief Executive Officer
LUFTHANSA
- Tang Kin Wing Augustus**
Chief Executive Officer
CATHAY PACIFIC AIRWAYS LIMITED
- Willie Walsh**
Director General
IATA

ALSO SERVED

(To March 2022)

Yuji Hirako
President and Chief Executive Officer
ALL NIPPON AIRWAYS

(To March 2022)

Tewolde GebreMariam
Chief Executive Officer
ETHIOPIAN AIRLINES

(To March 2022)

Mikhail Poluboyarinov
Chief Executive Officer and Chairman of the Management Board
AEROFLOT

(To October 2021)

Adrian Neuhauser
Chief Executive Officer
AVIANCA

(To October 2021)

Alan Joyce
Chief Executive Officer
QANTAS

INDUSTRY STORY

On the path to recovery



Air passenger traffic

International air travel continues its recovery

The recovery of international air traffic following its COVID-19 low point in 2020 accelerated in 2021. But some domestic markets stagnated.

Following the initial hit from the pandemic and for most of 2020 and early 2021, international air travel was adversely affected by travel restrictions, such that travelers preferred less-restricted domestic trips. Those trends reversed around mid-2021. When governments started to lift international travel restrictions, strong demand for international travel ensued, especially for leisure and short-haul trips. Domestic revenue passenger kilometers (RPKs), conversely, trended sideways, mainly because Asian markets, such as China, that had initially recovered fast were hit by renewed outbreaks of the virus.

01 Source: IATA's Monthly Traffic Statistics

Domestic markets are strongly dependent on COVID-19 policies and pandemic-related developments

Air travel demand diverges strongly among the largest domestic markets. In Russia, the shift from international to domestic air travel and favorable government policies regarding the latter meant domestic RPKs trended above 2019 levels for all of 2021 and prior to the war with Ukraine. China's domestic RPKs have returned close to their 2019 values on several occasions only to deteriorate following outbreaks of the Delta and Omicron variants. The United States has seen a slow but steady recovery in domestic air travel demand. Elsewhere, some domestic markets continue to see volatility in air traffic amid renewed outbreaks of COVID-19 and its variants even as 2022 witnesses reduced pressure from COVID on health systems globally.

02 Source: IATA's Monthly Traffic Statistics

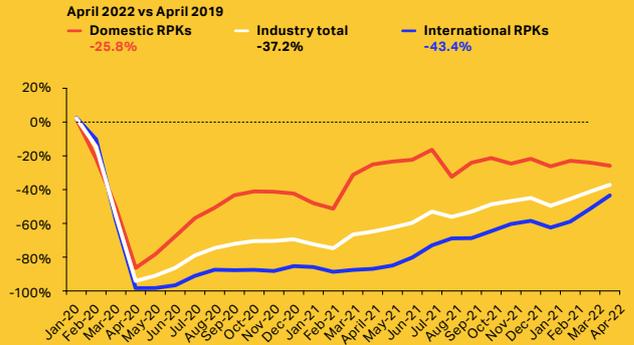
The recovery in international air travel is resilient to shocks, but Asia-Pacific is struggling

The worldwide easing of government border policies was arguably the main reason for growth in international air passenger traffic in 2021 and into 2022. Africa, Latin America, and the Middle East saw faster initial letups of travel restrictions than Europe and North America, but all of these regions have broadly recovered in step, albeit slowly. The outlier is Asia-Pacific, where strict government policies and cautious travelers led to only marginal improvement in international air transport RPKs in 2021.

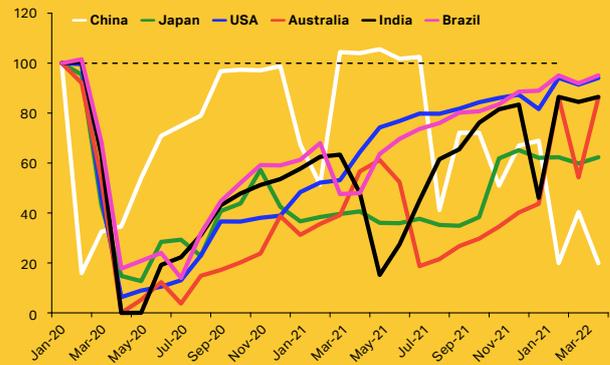
In early 2022, international travel maintained its recovery in all regions. The pace of that recovery, however, continued to diverge between Asia-Pacific and the rest of the world, although some Asia-Pacific markets, such as Australia, have begun recovering faster than the region overall following their governments' relaxation of restrictions.

03 Source: IATA's Monthly Traffic Statistics

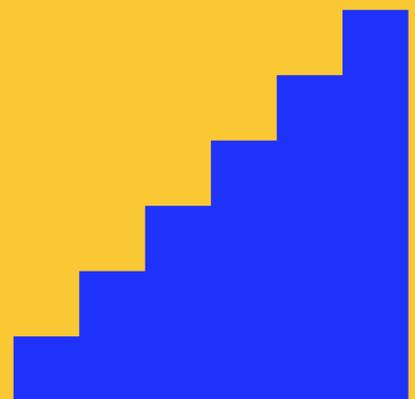
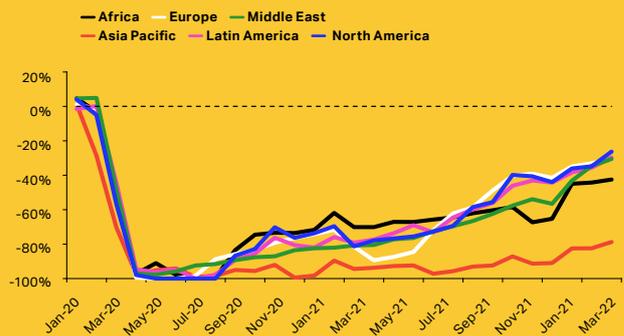
01 Percentage change in RPKs



02 Seasonally adjusted domestic RPKs (indexed to January 2020 = 100)



03 International RPKs, YoY% change

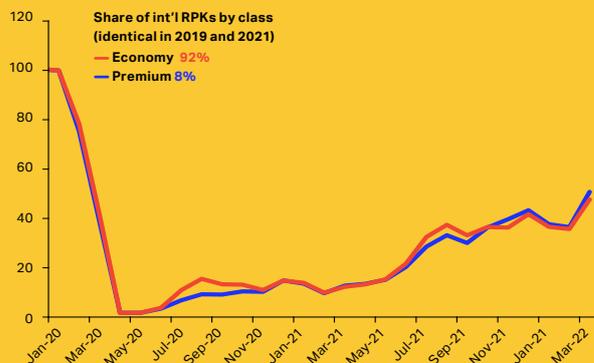


Economy- and premium-class travel have fallen and risen at the same pace during the pandemic

There has been much speculation throughout the pandemic of the possible significant impact on business travel of video conferencing technology and tightened corporate travel budgets. Traffic volumes in premium and economy cabin classes have nonetheless mostly recovered in tandem and their respective market shares are unchanged from 2019. This is potentially the result of declines in airfares for first and business class relative to other classes and to increased demand from leisure travelers for comfort and space onboard aircraft.

04 Source: IATA's Monthly Traffic Statistics

04 International RPKs by cabin class, indexed to January 2020 = 100



The willingness of people to travel defies the pandemic and other shocks

The US-Europe market illustrates that people's willingness to travel by air has remained strong throughout the pandemic. The easing of air travel restrictions has often been followed by a surge in ticket sales. Except for countries directly affected by the war in Ukraine, demand has been mostly untouched, with ticket sales falling for only a week or so before recovering. Not even inflation has so far put people off air travel. It is likely, though, that demand would be stronger without these various shocks.

05 Source: IATA Economics, using Direct Data Service (DDS)

05 Percentage change in bookings in the United States and Europe

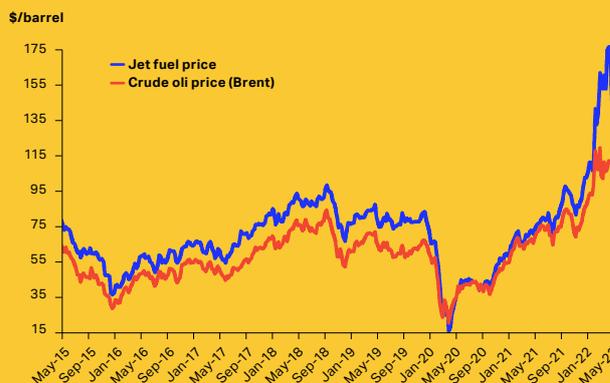


Jet fuel and crude oil prices rose markedly in 2021 and early 2022, pressuring already strained airline finances

Economic activity globally recovered well in 2021 from the depths of the pandemic, pushing demand and prices for oil steadily higher. Initially, the crack spread—the gap between crude oil and jet fuel prices—was negligible, but it has grown since mid-2021. The war in Ukraine, robust global economic activity, and insufficient crude supply led to a surge in crude oil prices in early 2022. Jet fuel prices rose even more quickly, driven by heightened demand.

06 Sources: S&P Global, Refinitive Eikon

06 Jet fuel and crude oil prices



Air cargo traffic

Air cargo grew strongly in 2021, outperforming the wider goods trade, but results deteriorated in 2022

As is typical during economic upturns, global air cargo transport grew faster than the overall goods trade in 2021. This is because demand for goods rebounded strongly, and businesses often did not have enough inventory to meet that demand, inducing them to turn to air cargo for rapid restocking. This inventory restocking cycle tapered off somewhat at the end of 2021 into early 2022 as the rebound in economic activity slowed and inflation began to rise. Air cargo traffic continues to grow in year-on-year terms, but its growth clearly softened in the second half of 2021 and may well weaken further as 2022 progresses.

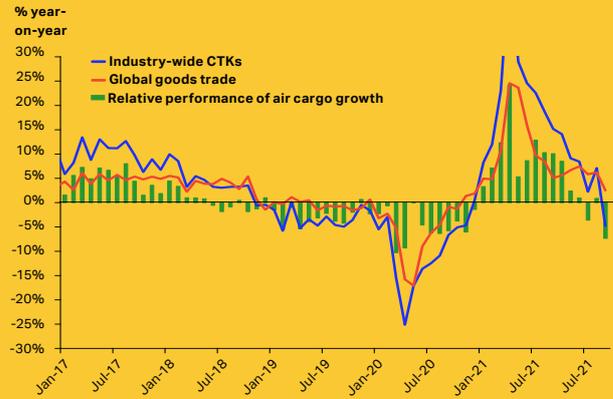
07 Sources: IATA's Monthly Traffic Statistics, Netherlands Centraal Planbureau (CPB)

Air cargo volumes for many leading routes and markets have softened, but volumes in Africa and Latin America continue to surge

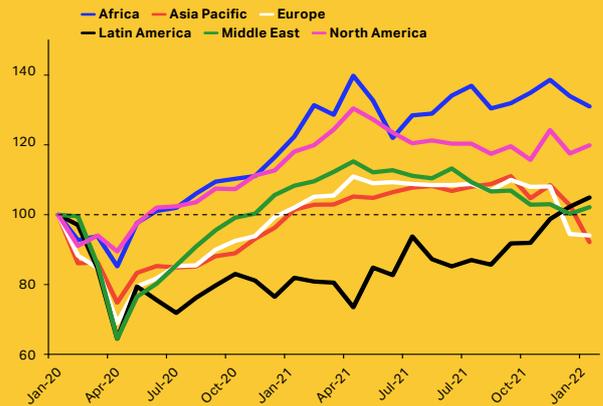
Globally, air cargo volumes are trending sideways, hiding the disparity among the main markets and regions. North America, the Middle East, Asia-Pacific, and Europe posted strong growth in air cargo volumes in late 2020 and early 2021, but volumes thereafter lost steam. This is partly explained by elevated inflation and related supply issues, the end of the inventory restocking cycle, and a shift in demand from goods to services. Airlines in Latin America lost air cargo market share to other regions but exited their bankruptcy procedures, which allowed them to post strong performances in early 2022 and to begin the expected consolidation process in the region. The cargo tonne kilometers (CTKs) flown by African airlines have been buoyant throughout the pandemic, mainly driven by a vigorous flow of goods and investments from China.

08 Source: IATA's Monthly Traffic Statistics

07 Percentage growth in air cargo demand



08 International CTKs, indexed to January 2020 = 100



Passenger aircraft belly capacity is recovering but remains lower than pre-pandemic levels

Amid greatly diminished international passenger traffic, particularly as the pandemic took full effect, passenger aircraft belly capacity declined substantially. To compensate, airlines temporarily converted some of their passenger aircraft to freighters, which are dubbed “preighters.” The result was record air cargo load factors and yields.

The air cargo load factor hit a peak in mid-2021 before falling as a result of lower demand and increased capacity. Air cargo yields also fell in the second half of 2021 until Omicron, labor shortages, and other disruptions sent them to new heights at the outset of 2022.

09 Source: IATA's Monthly Traffic Statistics

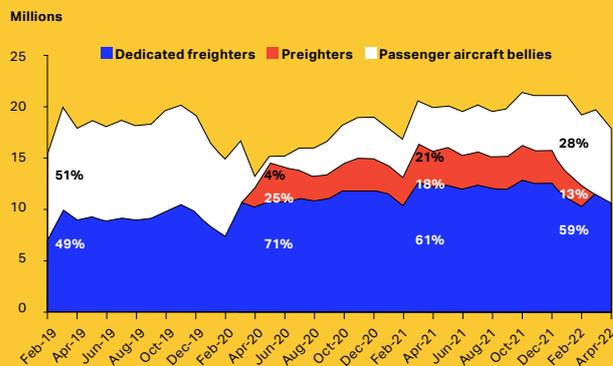
10 Sources: IATA's CargoIS and Monthly Traffic Statistics

Export orders, key indicators of demand for air cargo transport, were moderate in 2021 and early 2022

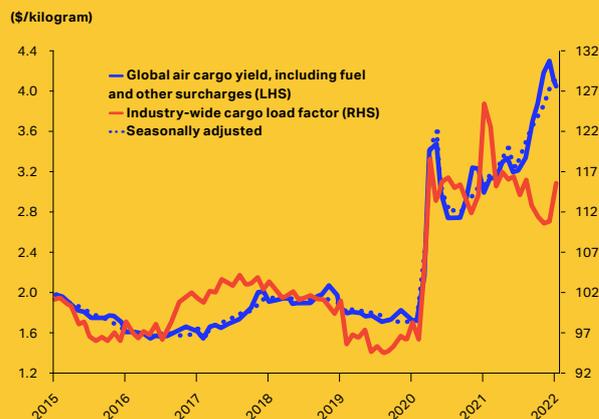
The difficulties faced by air cargo traffic are visible in the purchasing managers' index (PMI) for export orders—historically a leading indicator of air cargo demand. This indicator revealed that export orders were moderate for most of 2021 amid softening growth. However, it turned unresponsive in January 2022, when its value dipped below 50, which signals a deterioration on the month. Although the index improved in February, inflation, the war in Ukraine, and renewed lockdowns in China again put downward pressures on export orders and air cargo demand.

11 Sources: IATA's Monthly Traffic Statistics, IHS Markit

09 Percentage growth in air cargo demand



10 Cargo yields and load factors, indexed to January 2012 = 100



11 Percentage growth in manufacturing export orders



Airline financials

Cargo and passenger revenues rose in 2021 but remain far from their precrisis levels

Air cargo revenues have nevertheless been the bright story for airlines during the pandemic. They rose nearly 75% in 2021 compared with 2019 on the back of strong demand and record cargo yields. That, however, was far from enough to offset the fall in passenger revenues, which in 2021 were still more than 60% under their 2019 level. This left overall airlines revenues in 2021 fully 57% below revenues for 2019.

12 Source: IATA Economics

Airlines' combined load factor remains below the level required for financial breakeven

Improvements in air passenger traffic and strong air cargo demand meant airlines were able to increase their overall load factor in 2021 compared with 2020. Despite this improvement, the load factor continues to be below where it must be for airlines to break even financially.

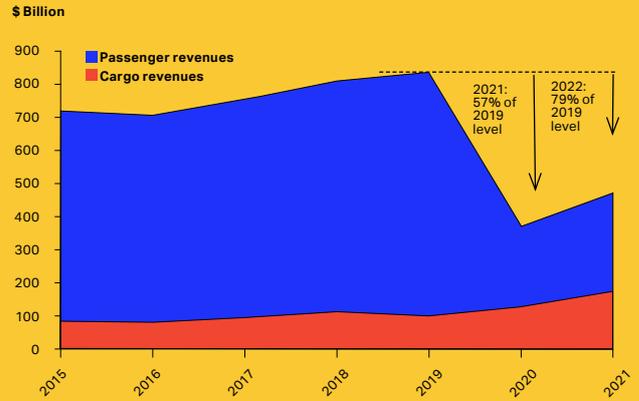
13 Source: IATA Economics

Air transport again registered net posttax losses in 2021 with improvement on the horizon

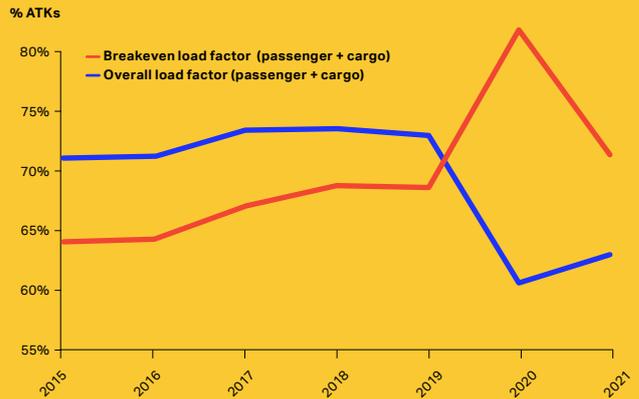
Based on IATA's October 2021 estimates, industry-wide net posttax losses eased from \$138 billion in 2020 to \$52 billion in 2021 on the back of improvements in passenger traffic and a strong air cargo performance. IATA expects a further reduction in losses in 2022 as the recovery extends. It is clear, however, that higher jet fuel and labor costs, the impact of inflation on demand, outbreaks of COVID-19 in China, and a broad-based slowdown in economic activity will put downward pressure on airline financials. Some airlines, though, are expected to turn a profit in 2022, particularly those with large domestic markets and open borders.

14 Source: IATA Economics

12 Global airline revenues



13 Breakeven and actual passenger and cargo load factors



14 Air transport industry net posttax profits



Airline finances improved in all regions in 2021 and are expected to improve further in 2022, with North America leading the way

IATA's October 2021 estimates anticipated reduced, widespread operational losses in 2021. Those estimates anticipate the same for 2022 across all the main regions of airline registration, although the degree of improvement will vary significantly region by region.

Airlines based in **North America** are the best placed financially, benefiting as they do from the large US market, strong traffic flows to Latin America and Europe, and resilient economies. This is the only region where the operating margin is expected to turn positive in 2022.

Slow gains in international air traffic meant that the finances of **European** airlines improved marginally in 2021. Their earnings before interest and taxes (EBIT) margin was at minus 17.4% at year-end 2021.

Drivers of financial performance for airlines in **Asia-Pacific** are mixed. The international air travel recovery was almost nonexistent in this region in 2021, and even the region's largest domestic markets continue to be troubled by renewed COVID-19 outbreaks and risk-averse governments.

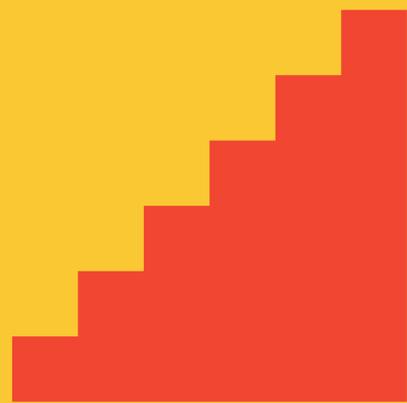
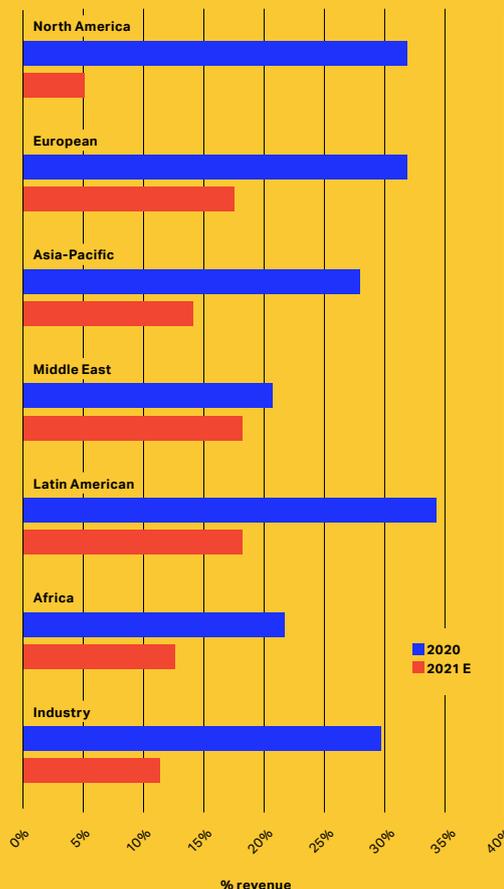
Air carriers in the **Middle East** experienced slow growth in their operating margins in 2021. This was due mainly to the region's dependency on long-haul international air travel, which is expected to take longer than other market segments to return to its 2019 traffic levels.

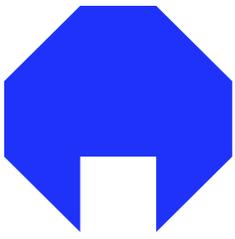
Latin American carriers posted the worst operating margin on aggregate in 2020 and 2021, with several airlines proceeding with US Chapter 11 bankruptcy. There is nevertheless robust demand for leisure travel in some markets to and from the region, which has helped to improve regional airline finances somewhat.

In **Africa**, airline operating margins were around minus 13% in 2021, a resilient outcome. Looking ahead, low-income countries in Africa are likely to struggle economically in the near term, which will dampen the recovery of air transport in those countries.

15 Source: IATA Economics

15 Airline operating margin by region





SAFETY

New three-pillar safety strategy

18

In the face of numerous operational challenges, the airline industry improved its safety performance in several key areas in 2021 compared with 2020 and the 2017–2021 average.

Highlights of 2021 safety performance:

- The total number of accidents, the all-accident rate, and fatalities were reduced
- IATA members and airlines on the IATA Operational Safety Audit (IOSA) registry (which includes all IATA members) experienced zero fatal accidents
- No runway/taxiway excursion accidents occurred for the first time in at least 15 years.

These strong results occurred as the industry ramped-up operations from the low point of April 2020, while addressing issues that included:

- Ensuring proficiency for air crew flying reduced schedules or returning to work after furlough
- The loss of many highly skilled individuals owing to retirement or redundancy
- Safely returning aircraft to

service after parking them for extended periods

- Inconsistent and rapidly changing border control measures that placed significant stress on aircrew in navigating testing and quarantine requirements.

To ensure that IATA can support the industry in delivering continuous improvement in aviation safety, a new three-pillar IATA Safety Strategy has been developed:

- **Safety Leadership:** Organizational safety begins at the top. The IATA Safety Leadership Program aims to leverage the safety leadership mindset of aviation executives to highlight the benefits of a positive safety culture to enhance safety performance. Safety Leadership principles, a Safety Leadership Charter, and Safety Leadership talks are all being utilized to emphasize the criticality of leadership. IATA's Aviation Safety Culture (I-ASC) Survey provides airlines with a tool to measure and continuously improve their safety cultures using a standardized methodology and key performance indicators.





Aviation and 5G

Though 5G telecommunications services have been successfully implemented in many jurisdictions around the world with little to no impact on airline operations, this was not the case in the United States. Instead, the rollout of C-band 5G operations in January 2022 at certain US airports created enormous disruption to aviation, owing to the potential risk of interference with radio altimeters that are critical to aircraft landing and safety systems. Although safety was not compromised, significant costs were imposed on airlines as they worked to comply with the special conditions established by the US Federal Aviation Administration (FAA) for safe operations in the presence of C-band 5G transmissions. Furthermore, it is anticipated that the FAA will require airlines to retrofit/upgrade radio altimeters at their own expense to enable the respective aircraft to continue to serve 114 US airports where 5G service is or will be deployed.

Protection of the civil aviation spectrum and aircraft safety systems is an IATA top priority. IATA continues engaging with governments to mitigate threats to the civil aviation spectrum, including encouraging responsible deployments of 5G.

- Safety Risk:** This pillar captures new and emerging aviation hazards that put safety at risk and offers potential industry mitigations through a single repository—the IATA Global Safety Risk Management Framework (GSRMF). It enables the assessment and prioritization of hazards and risks, captured from across industry, to support safety improvements through safety risk assessments and guidance material. As IATA transforms its IOSA program

from a compliance-based process to a risk-based one, safety insights from audits will add significant context to the issues IATA looks to address through safety improvement programs. The IATA Global Aviation Data Management (GADM) platform, which contains large amounts of safety data, will support this by validating data around identified safety risks. IOSA will provide de-identified safety insights from audits that will feed into the GSRMF.

- Safety Connect:** The IATA Safety Connect program has been designed to encourage active communication among airlines’ safety and compliance managers regarding current and emerging potential safety issues. It provides a conduit to exchange safety intelligence between peers to support a deeper industry understanding of current issues and employ mitigations used by others to collectively raise the bar on safety performance.



"To ensure that IATA can support the industry in delivering continuous improvement in aviation safety, a new three-pillar IATA Safety Strategy has been developed."

All accident rate (accidents per one million flights)	All accident rate for IATA member airlines	Total accidents	Fatal accidents	Fatalities	Fatality risk
2021 1.01 (1 accident every 0.99 million flights)	2021 0.44 (1 accident every 2.27 million flights)	2021 26	2021 7 (1 jet and 6 turboprop)	2021 121	2021 0.23
2020 1.58 (1 accident every 0.63 million flights)	2020 0.77 (1 accident every 1.30 million flights)	2020 35	2020 5	2020 132	2020 0.13
AVERAGE 2017-2021 1.23 (1 accident every 0.81 million flights)	AVERAGE 2017-2021 0.72 (1 accident every 1.39 million flights)	AVERAGE 2017-2021 44.2	AVERAGE 2017-2021 7.4	AVERAGE 2017-2021 207	AVERAGE 2017-2021 0.14



IATA member airlines fatality risk

2021

0.00

2020

0.06

AVERAGE 2017-2021

0.04

Jet hull losses (per one million flights)

2021

0.13

(1 major accident every 7.7 million flights)

2020

0.16

(1 major accident every 6.3 million flights)

AVERAGE 2017-2021

0.15

(1 major accident every 6.7 million flights)

Turboprop hull losses (per one million flights)

2021

1.77

(1 hull loss every 0.56 million flights)

2020

1.59

(1 hull loss every 0.63 million flights)

AVERAGE 2017-2021

1.22

(1 hull loss every 0.82 million flights)

Total flights (million)

2021

25.7

2020

22.2

AVERAGE 2017-2021

36.6

SECURITY

Aviation maintains its vigilance against security threats

Aviation's security challenges include cyberattacks on corporate systems, geopolitical tensions resulting in airspace closures, and terrorism against assets, people, and reputation. To keep pace, governments are providing support and resources to aviation, including capacity building, so that countries with limited resources can meet and exceed their security obligations. These efforts keep flying secure despite the numerous threats.

Issues surrounding the safe and secure management of civil aviation in conflict zones, and in the airport environment persist, and in some regions have escalated. In the Kingdom of Saudi Arabia in 2021, for example, 54 individual attacks or attempted attacks were officially reported against airports under civil control. Similarly, there were fatal attacks reported in January 2022 in the United Arab Emirates involving the unlawful use of Unmanned Aircraft Systems (UAS).

To counter these challenges, information sharing is critical. IATA facilitates the timely sharing of information among key industry participants through its Tactical Operations Portal (ITOP).

The invasion of Ukraine by Russia underscores the importance of timely collaborative risk assessment between governments and the industry. As of end April 2022, all Ukrainian and large parts

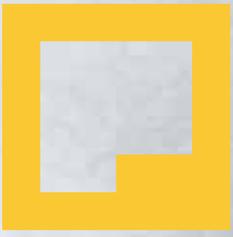
of Russian airspace were closed to civil aviation operations. Airspace closures, regardless of the reason, come with huge penalties for aviation. Longer flight times increased operating costs, fuel consumption, and CO2 emissions, for example. Any airspace closure for whatever reason needs to be monitored and reviewed on a regular basis.

Meanwhile, the digital jamming of civil aircraft global position systems and spoofing even outside conflict zones—known as fake information tactics—persists. To assist the industry in mitigating this risk, IATA manages a multitude of outreach communications.

Governments have officially warned industry partners that cyberattacks have increased across all enterprise systems associated with critical infrastructure services, including transport. There have been no incidents reported that have targeted or affected the safety of flight and/or met the threshold of an act of unlawful interference. There are indications, however, that state-sponsored actors have increased capabilities to disrupt civil aviation, with data breaches causing supply chain disruptions. International and national cybersecurity efforts focus on reducing the risks of unregulated supply chains, and unknown network and software vulnerabilities, including ransomware.

“IATA facilitates the timely sharing of information among key industry participants through its Tactical Operations Portal.”





Regulations need to be consistent

Governments need to weigh the impact that additional aviation taxes will have on the contribution of aviation connectivity to economic growth versus higher tax revenue from the economy as a whole. In principle, aviation taxation should be proportionate and fair and should avoid competitive distortion

Green and carbon taxes

There has been a flurry of green and carbon (CO₂) tax initiatives across Europe, including proposed increases to ticket taxes. In early 2022, Belgium instigated a passenger tax, and the Netherlands tripled its tax. Carbon pricing proposals in the form of taxes that will potentially penalize aviation for CO₂ emissions beyond the scope of the EU Emissions Trading Scheme have likewise been proposed. The air transport industry is advocating for the EU and other nations to promote and incentivize investments in SAF rather than implement taxes to generate revenue that is rarely invested in projects to cut aviation emissions.

EU energy taxation directive

The industry is also monitoring developments under the EU Energy Taxation Directive concerning the proposed fuel tax on intra-EU flights—from which airlines are exempt—and how this would put EU airlines at a competitive disadvantage. The EU, meanwhile, must respect air services agreements (ASAs) that exempt airlines from non-EU countries operating flights between EU member countries from fuel tax. Where the EU doesn't have ASAs with non-EU countries, the EU has

left the door open to apply a fuel tax on the flights of non-EU airlines operating from EU airports.

Base erosion and profit sharing

In November 2021, 137 countries joined a two-pillar plan to reform international taxation rules to reduce base erosion and profit sharing (BEPS) where multinational enterprises exploit gaps and mismatches between different country's tax systems. The global airline industry is in the scope of the new rules, but the annual turnover threshold of the rules is so high that it may apply to only five major airline groups. The threshold, though, could drop 50% by 2030, which would put more airlines in the scope of the rules, especially as airlines recover following the 2023 implementation of the reformed rules.

Unruly passengers

There is growing concern among airlines, passengers, and governments over the increasing frequency and severity of unruly incidents involving violence and harassment by passengers against crews and other passengers and failure to comply with safety and public health instructions. Yet, loopholes in international air laws often result in offenses going unpunished.

The air transport industry has consequently adopted a set of principles to deal with unruly passenger behavior. In April 2022, IATA bolstered those principles with its publication of a high-level document, *Even safer and more enjoyable air travel for all—a strategy for reducing the problem of unruly and disruptive passenger*

incidents, that uses examples of good practice to illustrate the practical steps to take to reduce unruly and disruptive passenger issues. These steps include urging governments

- to communicate the types of prohibited conduct onboard aircraft and the legal and other consequences of such conduct, in line with Annex 9 of the Chicago Convention;
- to ratify Montreal Protocol 14 and thereby remove barriers to enforcement and prosecution;
- to review the types of enforcement measures that are in place, including such penalties as fines, which can be issued to ensure that there are consequences for disruptive behavior; and
- to support the work of airlines and other industry stakeholders to prevent unruly and disruptive passenger incidents.

26 Accessibility

IATA again consulted extensively with disabled persons, industry representatives, and wheelchair and aircraft manufacturers to develop policies and propose solutions to make air transport increasingly accessible for travelers with disabilities. An important concern for this traveler group is damage to mobility aids. In March 2022, IATA's Mobility Aids Action Group provided a number of conclusions and recommendations:

- The dimensions and weight of some mobility aids cause loading and off-loading challenges. Mobility aids must be stored in an upright position and often cannot be configured to fit through cargo doors or secured in the cargo hold.
- Communication with passengers must improve to ensure that accurate dimensions of mobility aids are shared with carriers. Without this information, carriers may not be able to correctly assemble or disassemble a mobility aid. Incorrect information can also lead to injuries to handlers.
- Communication is also vital for the safe handling of lithium-ion batteries, which are used to

power some mobility aids and must be properly disassembled or disconnected to be compliant with air transport's dangerous goods regulations.

The airline industry is doing what it can to minimize damage to mobility aids. But a major breakthrough for the benefit of travelers will only come when wheelchair and other mobility aid manufacturers change their product designs to meet the demands of air travel. In the meantime, the Mobility Aids Action Group seeks agreement on various initiatives, including advocacy, with national regulators for a market-driven solution for mobility aids suited to air travel.

Slots

Government restrictions on travel once more challenged the slot allocation system in 2021. And IATA and airlines again urged regulators not to return fully to the 80-20 slot-use rule for the northern summer 2022 season, particularly while

it remained unclear when travel restrictions would be lifted.

The Worldwide Airport Slot Board (WASB) proposed measures that recognize the global nature of airline networks and their exposure to changing circumstances in different markets, such as how the closure of one end of a route dramatically affects the other end. WASB's measures recommend some slot series returns for still-closed routes and force majeure for unknowns. Disappointingly, the UK government announced a 70% use rate for summer 2022 with no options, while the European Commission agreed to a 64% rate. Most other regulators remained committed to the WASB approach or to continued full slot alleviation.

In March, Singapore University of Technology and Design's Aviation Studies Institute published a white paper cowritten with IATA: Slot Allocation Amidst COVID Recovery, which focuses on the Association of



"Government restrictions on travel once more challenged the slot allocation system in 2021."

Southeast Asian Nations (ASEAN). The paper concludes that the most useful measure adopted by authorities worldwide has been “the ability to return series of slots in advance of the season, while protecting future rights to the same slots. This has provided clarity to airport planners, prevented airlines from being expected to fly unnecessarily, and provided other airlines with more access opportunities.”

The same thinking features in the WASB guidance for future seasons. WASB offers a balance between pandemic impact and demand recovery based on best practices.

Slot relief is crucial in heavily travel-restricted markets. In other markets, the slot system is under pressure from soaring demand, which outstrips airlines’ efforts to restart fast. Significant operational challenges at airports, often because of a lack of security-cleared staff, are causing bottlenecks and flight cancellations. In May 2022, Schiphol Airport requested that airlines halt bookings to relieve pressure on the airport. It is vital that such requests are signaled well in advance so that slots can be reconfigured and consumers minimally inconvenienced. It is also essential that airlines that cannot operate their slots because of cancellations beyond their control are not penalized under the minimum slot-use rules in place.

A further complication to the slot system has recently emerged with the closure of Russian airspace following that country’s invasion of Ukraine. Severe and ongoing disruption to schedules means that maximum flexibility at slot-coordinated airports is needed to enable carriers to retime slots. IATA is working with the Worldwide Airport Coordinators Group (WWACG) to ensure that flexibility and information on schedule updates can be shared between aviation stakeholders and passengers as quickly as possible.

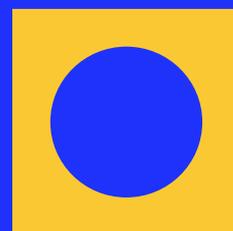
REGULATIONS – COVID POLICY

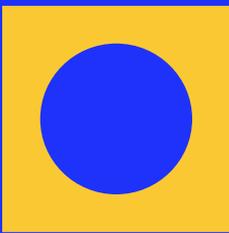
Working with governments for a safe restart of aviation

Throughout 2021, the industry worked with governments to secure a safe, globally coordinated restart of air transport. At the ICAO High Level Conference on COVID-19 (HLCC) in October 2021, countries acknowledged that greater harmonization between countries was important to restore international connectivity, rebuild the confidence of the traveling public, and facilitate the revival of the global economy.

At that time, most countries had reopened their borders, at least partially, or had announced plans to do so. Almost all countries, however, still had in place extensive requirements with which air travelers and airlines had to comply, with little to no coordination or consistency among countries regarding those requirements.

Recognizing that industry input was needed to help countries deliver on the commitments they’d made at the HLCC, IATA published *Restart to Recovery: A Blueprint for Simplifying Air Travel during COVID-19*. The publication is designed to assist governments with practical recommendations and best practices to make the international air travel experience simple, predictable, and consistent.



**Responding poorly to Omicron**

The emergence of the Omicron variant in late November 2021 led to knee-jerk responses from many governments, including renewed border closures and additional testing and quarantine requirements. These responses were imposed with little warning or coordination despite clear statements from the World Health Organization (WHO) that such draconian measures are ineffective and probably counterproductive. IATA called for governments to “use the experience of the last two years to move to a coordinated, data-driven approach that finds safe alternatives to border closures and quarantine.” It added that “travel restrictions are not a long-term solution to control COVID variants.”

It quickly became apparent that strict border measures were indeed ineffective against Omicron given the extreme transmissibility of the variant. Professor David Heymann, of the London School of Hygiene and Tropical Medicine, noted that “the travel bans that followed the discovery of Omicron did not contain its spread. That is because by the time it was identified, it was already present in many places.” Research carried out for IATA and ACI Europe by Oxera and Edge Health

also found predeparture testing requirements to be ineffective at stopping or even slowing the spread of the Omicron variant.

Professor Heymann further argued that travel measures were increasingly unnecessary in countries with high levels of vaccine uptake because vaccination offers good protection against severe outcomes. In this respect, many countries have rightly begun to treat COVID-19 as an endemic disease and are shifting the responsibility for COVID risk assessment and risk management to individuals.

Rebounding from Omicron and aiming for a return to normal

Omicron and vaccines have driven a shift in government policies from strict person-based measures to the alleviation of controls once sufficient levels of population protection have been reached. As more countries apply this approach, IATA is calling on governments to align their border measures to achieve a return to a pre-pandemic travel experience.

Border measures should take into account the Oxera and Edge Health research indicating that testing does not significantly influence the spread of the virus and its

variants. And contact tracing, including the lengthy and complex passenger locator forms (PLFs) that have become ubiquitous, calls for a joint, holistic approach. The border should not be seen as the only line of defense. If there is no contact tracing taking place within a domestic destination, it makes no sense for travelers to that destination to fill out a PLF. The same logic applies to vaccine certificates and other health credentials.

Restoring the passenger experience that airlines are used to offering requires more than just the relaxation of border measures. The onboard experience must go back to normal too. In particular, mask mandates should be relaxed in line with domestic settings. Masking onboard should be voluntary and a matter of choice for passengers and crew. There is no logic in requiring masks onboard aircraft when they are not required in restaurants, at cultural and sporting venues, or even within airports.

Looking ahead with resilience and preparedness

As the industry recovery gathers momentum, it is important to take stock of the lessons learned and to ensure that the industry is resilient to future variants of the SARS-COV2 virus. Government and international organizations, too, need to be much better prepared for health emergencies, with global pandemics expected to become increasingly common.

Digital tools have the potential not only to transform identity management and facilitate contactless travel but also to heighten the resilience of international travel amid health emergencies. Throughout 2022 and beyond, IATA will collaborate with ICAO, WHO, and other stakeholders to ensure that all are fully prepared for the next global health event and for a quicker, more consistent response than has been the case during the COVID pandemic. This will be a key theme of IATA's input at the ICAO Assembly from 27 September to 7 October 2022.



“As the industry recovery gathers momentum, it is important to take stock of the lessons learned.”



ENVIRONMENT AND SUSTAINABILITY

The industry strengthened its sustainability commitment with Fly Net Zero

Climate change is an existential threat, and environmental action remains top of the industry's agenda. At the 77th IATA Annual General Meeting in Boston, United States, IATA member airlines passed a resolution committing them to achieving net zero carbon emissions from their operations by 2050. This brings air transport in line with the objective of the Paris Agreement to limit global warming to 1.5°C.

Success will require the coordinated efforts of the entire industry (airlines, airports, air navigation service providers, manufacturers) and significant government support. The industry must progressively reduce its emissions and accommodate growing demand, which is particularly strong in the developing world.

To serve the needs of the 10 billion people expected to fly in 2050, at least 1.8 gigatons of carbon must be abated in that year. Moreover, the net zero commitment implies that a cumulative total of 21.2 gigatons of carbon will be abated between now and 2050.

The resolution demands that all industry stakeholders commit

to addressing the environmental impact of their policies, products, and activities with concrete actions and clear timelines, including:

- Fuel-producing companies bringing large scale, cost-competitive sustainable aviation fuels (SAF) to the market
- Governments and air navigation service providers (ANSPs) eliminating inefficiencies in air traffic management and airspace infrastructure
- Aircraft and engine manufacturers producing radically more efficient airframe and propulsion technologies
- Airport operators providing the needed infrastructure to supply sustainable aviation fuels (SAF) in a cost-effective manner.

An immediate enabler is the International Civil Aviation Organization's (ICAO) Carbon Offsetting and Reduction Scheme for International Aviation (CORSIA). This will stabilize international emissions in the short-to-medium term. Support for this was reaffirmed in IATA's net zero resolution. Under CORSIA, airlines are required to purchase eligible emission units to offset increases in CO₂ emissions above a baseline, which is defined as the average of emissions in 2019 and 2020. In 2020, the ICAO Council



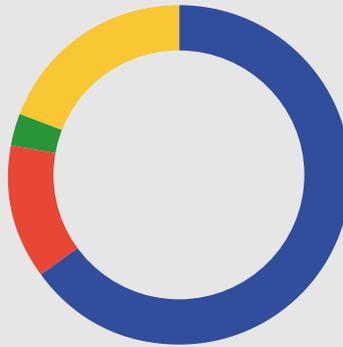
decided that 2019 emissions from international aviation will be CORSIA's baseline for its pilot phase (2021–2023). However, the baseline for 2024–2035 remains to be decided and is under discussion by ICAO member states. It should be agreed on at ICAO's 41st Assembly, taking place from 27 September to 14 October 2022.

Progress to date

To reach the climate goal, the aviation industry has unveiled a raft of initiatives, from major purchases of SAF and investments to grow SAF supply, to prototype electric and hydrogen aircraft. Bringing sufficient SAF to market and making radical new technology a reality will require a massive effort from all stakeholders in the sector.

- In 2021, 100 million liters of SAF were produced and used by airlines. Some 38 countries have passed SAF-specific policies so far.
- In 2022, more than 450,000 flights will operate using SAF and airlines will agree some \$17 billion in forward purchases.
- New SAF production capacity is coming online across the world.
- Airlines and manufacturers are joining forces to develop hydrogen-powered aircraft or technical solutions to make alternative means of propulsion commercially viable.

Contribution to achieving Net Zero Carbon in 2050



- **65%** Sustainable aviation fuel
- **13%** New technologies
- **3%** Infrastructure / operations
- **19%** Offsetting / carbon capture

Achieving net zero by 2050 will require eliminating emissions at source, offsetting, and carbon capture technologies. The strategy is to abate as much CO2 as possible using in-sector solutions, such as sustainable aviation fuels, new aircraft technology, more efficient operations and infrastructure, and the development of zero-emissions energy sources, including electric and hydrogen power. Any emissions that cannot be eliminated at source will be eliminated through out-of-sector options, such as carbon capture and storage and credible offsetting schemes.

To help passengers and the industry accurately understand their emissions, in March 2022 IATA released the first Industry-developed Passenger CO2 Calculation Methodology. It uses verified airline operational data to provide the most accurate emissions calculation for a specific flight. This is particularly true in the corporate sector where such calculations are needed to underpin voluntary emissions reductions targets.

The IATA Environmental Assessment (IEnvA) program is an evaluation system designed to independently assess and improve the environmental management of an airline. It requires airlines and their supply chain affiliates to keep track of, mitigate, and manage environmental and sustainability risks. This assessment is aligned with internationally accepted management standards (IOSA and ISO14001:2015) to effectively address the most significant sustainability challenges that the aviation industry faces today. It will help to build a sustainable company and requires CEO-level participation. Progress is regularly evaluated by independent assessors. To date, a total of 32 airlines have been certified or are undergoing the assessment.



“Achieving net zero by 2050 will require eliminating emissions at source, offsetting, and carbon capture technologies.”

Developments in 2022

41st ICAO Assembly

At its 41st Assembly, ICAO member states are considering adopting a long-term aspirational goal (LTAG) to reduce carbon emissions from international aviation. IATA and the industry will encourage ICAO to focus on a global framework for reaching the LTAG and any interim targets. Adopting the LTAG is important to ensure government support for aviation's decarbonization and alignment with the Paris Agreement goals. It would provide policy certainty to enable long-term investments in

new technology and new forms of energy, notably the much-needed investment in SAF production. Failure to adopt the LTAG would result in a patchwork of national, regional, or local measures and a weakening of CORSIA.

Fit for 55

With its aim to cut emissions across the European Union 55% by 2030, the European Commission's 'Fit for 55' environmental legislation proposals are an opportunity to deliver a significant boost for sustainable aviation, unleashing investment in green technologies and operational efficiencies.

But airlines have concerns about the proposals which, if adopted will likely represent a missed opportunity. Instead of incentivizing green technologies and operational efficiency improvements, thus making flying sustainable for all, the package aims to reduce air travel by raising economic barriers and making it less affordable. Advocacy efforts are focusing on persuading Europe to modify 'Fit for 55' to provide practical measures to boost the production of SAF and support the implementation of CORSIA.





From curb to gate with a single biometric token

Government-imposed COVID-19 travel restrictions forced airlines to revert to the manual verification of travel and health documents, especially for international travel. This led to the suspension of many of the automated and contactless processes travelers enjoyed prior to the pandemic. As traffic started to pick-up, many airlines introduced back-office processes that permitted passengers to submit their documents in advance of their trips. This has allowed for the resumption of some automated processes with the aim of reducing the number of customer touch points in the travel process.

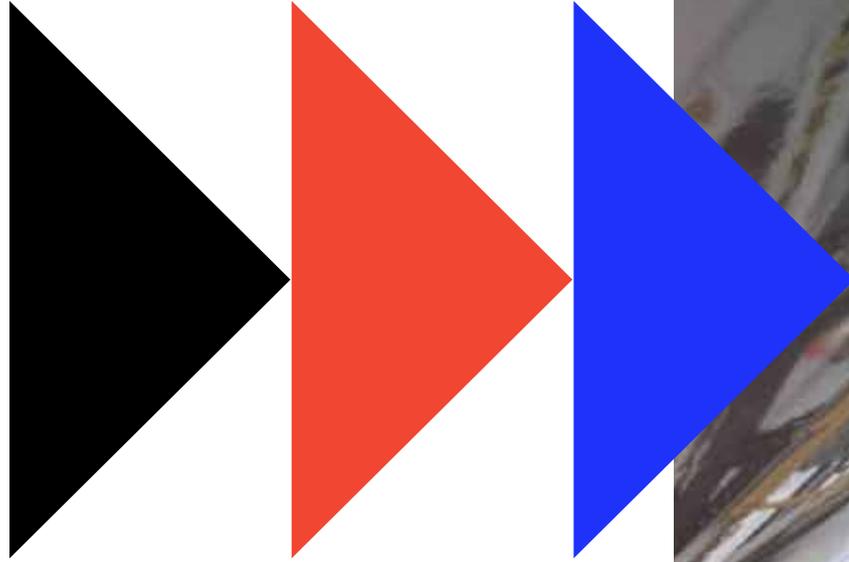
The past two years have demonstrated the need to implement automated solutions to avoid airport disruptions and congestion. IATA is collaborating with industry stakeholders to accelerate work on its One ID initiative to provide travelers with the expedited experience they demand.

One ID is helping transition the air transport industry to a day when travelers can move from curb to gate using a single biometric travel token, such as a face, fingerprint, or iris scan, from which their information is provided direct to governments without airline intermediation. Airlines are firm supporters of One ID.

The emphasis now is on ensuring that regulation is in place to support the vision of paperless travel. One ID will make traveling processes more efficient and pleasant for passengers and will utilize valuable government resources more effectively. It will take self-service to the next level for travelers, improve airport efficiency, and generate cost-savings for stakeholders—all of which are essential as the industry recovers from the COVID-19 pandemic.



"The emphasis now is on ensuring that regulation is in place to support the vision of paperless travel."



CARGO

Air cargo revenues vital to airlines

36

Air cargo is the backbone of global supply chains. The efficiencies and advantages of transporting goods by air were highlighted during the COVID-19 pandemic, with the delivery of life-saving personal protective equipment, medical supplies, and vaccines. The passenger side of the air transport business, conversely, dimmed as countries closed their borders and added to their travel restrictions.

In 2021, air cargo generated \$155.0 billion, up from \$129.0 billion in 2020 and \$101.0 billion in 2019. Air cargo therefore contributed more than a third of airline revenues in 2021, over double its contribution in 2020.

Global demand for air cargo was up 6.9% compared with the pre-covid level in 2019 and up 18.7% compared with the level in 2020. Air cargo capacity in 2021, however—measured in available cargo tonne kilometers (ACTKs)—was 10.9% below the ACTKs in 2019 (-12.8% for international operations). The lack of capacity contributed to

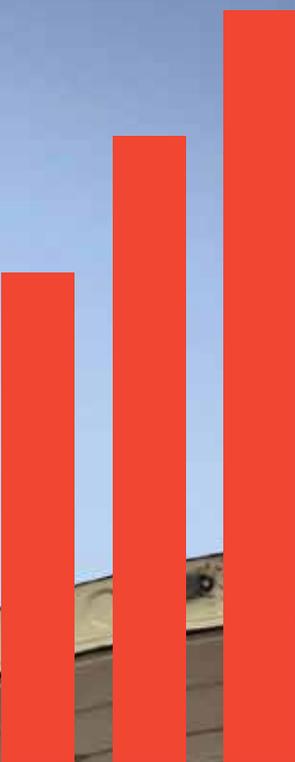
increased yields and revenues that, in turn, enabled airlines to continue to offer passenger connectivity on many routes during the pandemic.

Eliminating supply chain congestion

Global supply chain congestion is contributing to an inflationary environment and causing challenges for air cargo. Air cargo crews face hardships navigating COVID-19 restrictions, and operations are being adversely affected by shortages of human resources and facilities.

IATA continues to work with governments on removing operational barriers to ensure that vital air cargo supply lines remain open, efficient, and effective. Specifically, IATA urges governments to exempt air cargo crews from the COVID-19 restrictions imposed on regular travelers and to coordinate and standardize their pandemic measures so that air cargo can move around the world with minimal disruption.





**“In 2021,
air cargo
generated
\$155.0 billion,
up from
\$129.0 billion
in 2020 and
\$101.0 billion
in 2019.”**



Contributing to making aviation sustainable

Airlines have committed to net-zero carbon emissions by 2050 in line with the Paris Agreement. The strategy is to abate as much CO₂ as possible from such in-sector solutions as SAF, aircraft technologies, operations, and infrastructure. This includes the development of zero-emissions energy sources, such as electricity and hydrogen power. Emissions that cannot be eliminated at source will be eliminated through out-of-sector options, including carbon capture and storage and credible offsetting schemes.

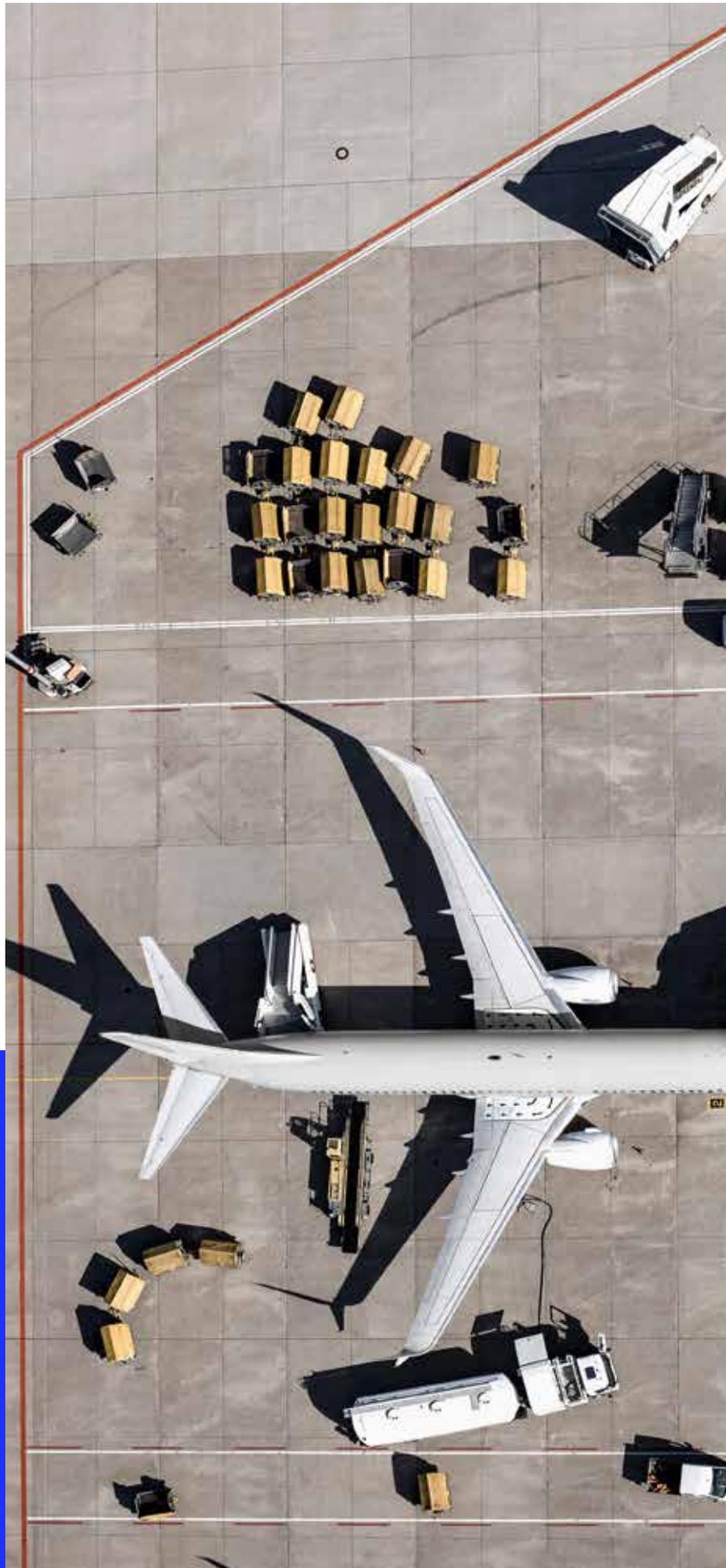
Air cargo has an important role to play in air transport's bid for sustainability, from stabilizing to reducing net emissions. We are already seeing some great examples in air cargo's re-fleeting, SAF commitments, and electrification of ramp vehicles. More opportunities are available for air cargo to improve its operational efficiency through modernization and digitalization, yet another priority for the air transport industry as a whole.

Air cargo's efforts regarding sustainability are supported by its customers. Most air cargo customers are themselves committed to reducing the carbon footprint of their supply chains.

Modernizing and elevating the efficiency of air cargo

The pandemic accelerated the growth of e-commerce. This has put pressure on airlines to digitalize and to digitally collect data for real-time tracking. In addition to tracking the location of a shipment, monitoring a shipment's condition regarding its temperature and the like has become a requirement for many shippers. Progress in this and other respects is being made.

The e-air waybill is expected to cover 100% of shipments on all enabled trade lanes by the end of 2022. That will yield a fully digitalized supply chain that employs a single standardized





and entirely exchangeable data set. This is the vision behind One Record, which is undergoing 17 test implementations involving 145 companies and three customs authorities. Underpinning the digitalization of the supply chain is IATA's Cargo XML messaging standard, which is being accepted by an increasing number of customs authorities.

Safety

The transport of lithium batteries is a priority safety issue for air cargo. The main concern is rogue shippers who mis-declare consignments containing lithium batteries.

To mitigate the risk that lithium batteries pose for air cargo, IATA has changed the Cargo Services Resolution and Recommended Practices on Consignment Security Declaration. Effective July 2022, the revised declaration will be the basis for aligning security standards and safety approaches for regulated agents regarding lithium batteries.

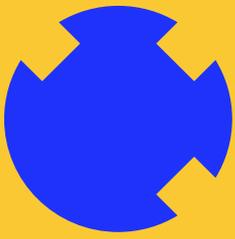
Effective enforcement is also critical. To that end, IATA is advocating for the expanded collection and distribution of incident data and for the criminalization of mislabeling dangerous goods. IATA also

recognizes that operational solutions are needed to attenuate the risk to air cargo posed by lithium batteries. IATA is working with the Airport Services Association (ASA) and the US FAA to develop a standard for fire containment covers. In addition, the Center of Excellence for Independent Validators (CEIV) Lithium Battery program has been launched to encourage best practice in handling lithium batteries.

People

Talent is essential for the advancement of air cargo. IATA has two critical industry programs that help attract people to, and retain people in, the air cargo business. The Future Air Cargo Executive (FACE) program is open to all air cargo and logistics employees under the age of 35 and provides a specific summit for this next generation of air cargo management as part of the annual IATA World Cargo Symposium (WCS). The FACE UP contest, held biannually, allows recent graduates whose theses are about innovation and transformation in air transport logistics, such as air cargo, supply chain management, mobility and IT solutions, to present their theses at the WCS.

“IATA has two critical industry programs that help attract people to, and retain people in, the air cargo business.”



Financial systems maintain efficiency and security

Despite the ongoing challenges of the COVID-19 pandemic, the IATA Financial Settlement

Systems (IFSS) performed at high levels of efficiency and security in 2021. Excluding certain overhead expenses, the IFSS reduced its cost base \$0.74 million compared with 2020 and processed \$201.7 billion, not including refunds. The amount the IFSS processed in 2021 was up from \$156.3 billion in 2020 but was still well below the \$449.8 billion that it processed in 2019.

IATA's Billing and Settlement Plan (BSP) expedites and simplifies the selling, reporting, and remittance procedures of IATA-accredited travel agents and improves financial control and cash flow for approximately 400 participating airlines. In 2021, the BSP processed \$74.7 billion, including \$16.0 billion in refunds. It processed \$76.0 billion in 2020, including a larger portion of refunds, at \$25.0 billion. In comparison, the BSP processed \$237.1 billion in 2019, the year before the COVID-19 pandemic.

At the close of 2021, there were 153 BSPs in 181 countries and

territories. Their overall on-time settlement rate was a stable 99.977%.

IATA's Cargo Account Settlement System (CASS) simplifies the billing and settling of accounts between airlines and freight forwarders. It operates through CASSLink, an advanced, global, web-enabled e-billing solution. In 2021, CASS processed \$57.4 billion, with an on-time settlement rate of 99.999%. This is similar to the \$42.0 billion and on-time settlement rate of 99.995% in 2020. By comparison, CASS processed \$32.7 billion in 2019.

At the end of 2021, 97 CASS operations were serving more than 230 general sales and service agents (GSSAs) and over 240 airlines.

To ensure that CASSLink continues to deliver fast, secure, and reliable service to all participants, IATA launched the CASSLink project. The aim is to modernize the platform to meet future operational needs and to make it more user friendly. The implementation of the renewed platform is planned to start later in 2022.

The IATA Clearing House (ICH) provides fast, secure, cost-effective settlement services to more than 480 airlines and associated companies in the value chain. In 2021, the ICH processed \$19.2 billion and had a financial settlement rate of 100%, meaning that the ICH settled every invoice presented to it despite the industry going through its biggest crisis ever. In 2020, the ICH processed \$20.4 billion and had a financial settlement success rate of 99.977%. The year before, in 2019, the ICH processed \$62.5 billion.

IATA Currency Clearance Services (ICCS) offer global cash management that enables more than 375 participating airlines to centrally control and repatriate their BSP and CASS sales, including from countries with severe currency liquidity issues. The ICCS processed \$22.5 billion in 2021, compared with \$16.0 billion in 2020 and \$37.3 billion in 2019.

IATA's Simplified Invoicing and Settlement (SIS) is a cost-effective electronic invoicing platform legally compliant for e-invoicing in 46 countries. It enables the exchange of electronic data among airlines and between airlines and direct operating cost suppliers. The use of a single standard, the IS-XML, simplifies business activity for the industry and allows suppliers to use one invoicing standard for all their airline customers. SIS automation and cost control can save companies up to 2% on operating expenses.

In 2021, SIS had more than 2,850 participants, including 445 airlines,

Blocked Funds

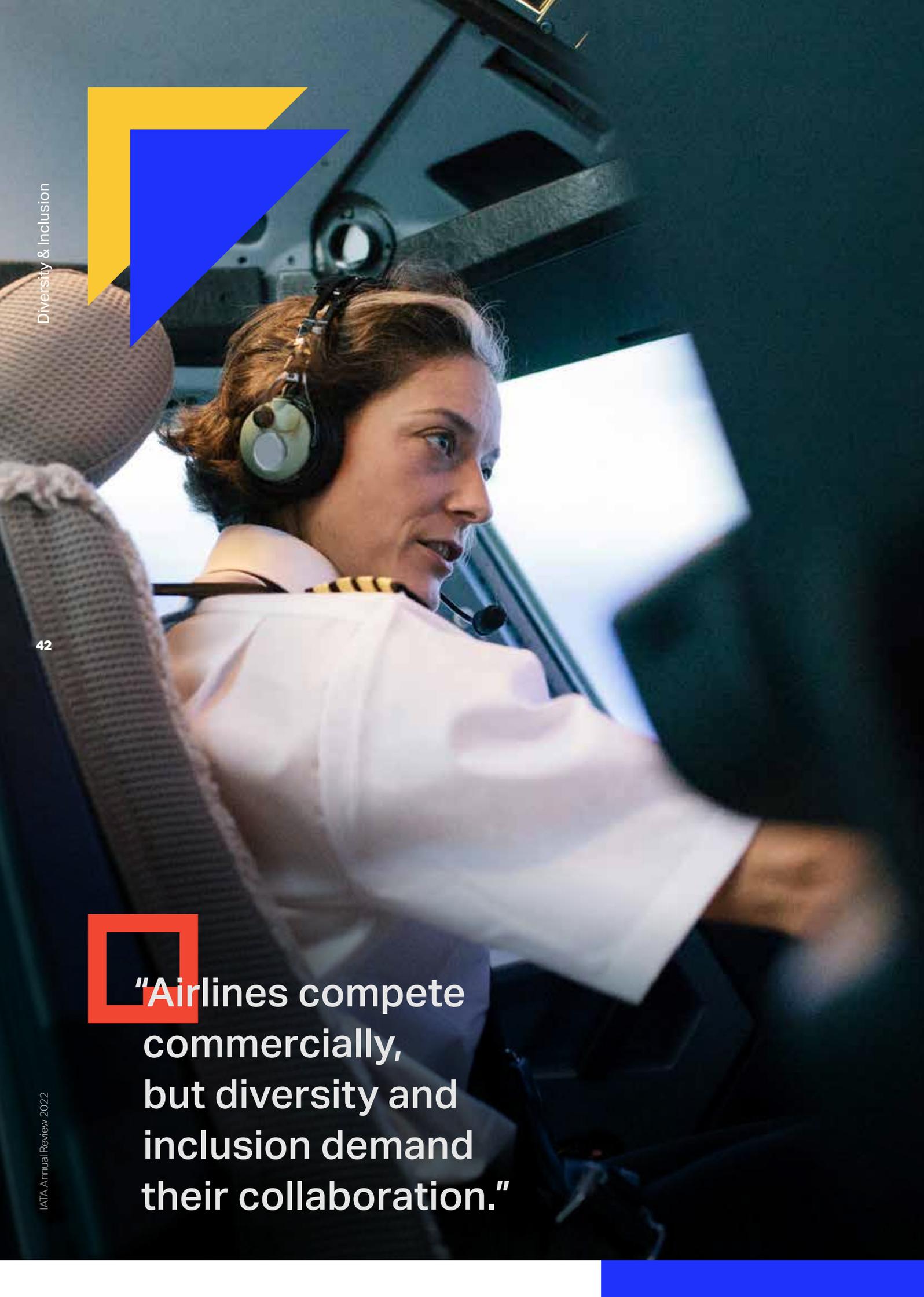
In contravention of bilateral agreements and global standards, some countries block the repatriation of airline funds from ticket sales. Blocked funds totaled \$1.33 billion at the end of April 2022, a 40% increase over the previous six months. The country blocking the most funds is Nigeria, where some

\$282 million awaits repatriation. Governments are urged to work with the aviation industry to resolve the issues that prevent airlines from repatriating their rightful funds. This will enable aviation to provide the connectivity needed to sustain jobs and to energize economies as they recover from the pandemic.

"CASS processed \$57.4 billion, with an on-time settlement rate of 99.999%."

373 suppliers, and 2,032 other entities. It processed over 1.12 million interline and supplier invoices and settled more than \$25.9 billion. SIS processed \$25.0 billion in 2020 and \$76.0 billion in 2019.

IATA's Enhancement & Financing (E&F) service gives air navigation service providers (ANSPs) and airports access to IATA's globally trusted systems and processes for accurate billing data, standardized e-invoices that can be automatically validated, and secure fund collection. E&F helps airlines avoid late payment penalties, handle reconciliation concerns, and resolve disputes through a standardized billing process with a single point of contact. In 2021, E&F processed \$2.0 billion, compared with \$1.9 billion in 2020 and \$4.2 billion in 2019.



“Airlines compete commercially, but diversity and inclusion demand their collaboration.”

25by2025 initiative gathers momentum

The aviation industry is continuing its focus on gender diversity. Its percentage of women in senior and technical roles is disproportionately low compared with other industries. In fact, only 22—25 if we count the latest additions—of IATA member airlines have female CEOs. And industry data suggests that a mere 4% of airline pilots are female. Making gender diversity an industry priority is essential.

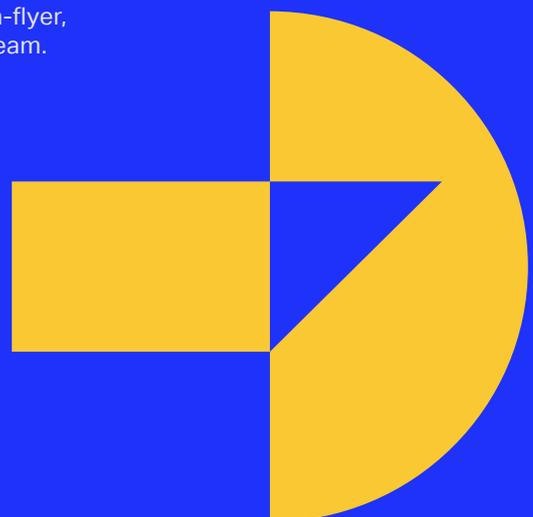
To help raise awareness of, and find solutions for, the air transport industry's gender gap, IATA launched its 25by2025 initiative in 2019. More than 111 signatories representing airlines and aviation companies from all parts of the world and responsible for 50% of global air traffic have signed up to 25by2025. Fully 36 signatories have joined the initiative since the IATA Annual General Meeting in Boston in October 2021.

Airlines compete commercially, but diversity and inclusion demand their collaboration. Every quarter, the 25by2025 signatories meet to share best practices and to discuss how they are integrating diversity and inclusion into their

business practices and strategies to strengthen their workforces. Airlines are increasingly focused on attracting, developing, and retaining female employees from all walks of life whose experiences and gender will help to shape the future of the air transport industry.

Up to end April 2022, five female CEOs have been appointed, at KLM Royal Dutch Airlines, El Al, Hahn Air, Austrian Airlines, and Pegasus. Their appointments exemplify an epochal change in leadership within the industry and among IATA's membership. Most importantly, the appointment of women to the industry's uppermost positions is tangible evidence of the degree to which airlines prioritize diversity and inclusion.

These and other efforts in respect of diversity and inclusion will be shared at the annual IATA Diversity & Inclusion Awards held as part of IATA's Annual General Meeting, in Qatar, in June 2022. The IATA Diversity & Inclusion Awards are the industry's principal means of recognizing and celebrating excellence in driving the 25by2025 agenda in three categories: inspirational role model, high-flyer, and diversity and inclusion team.



Airline retailing to put the customer in control

Airline retailing enables travelers to see the value of airline offers through a multitude of options beyond the standard fare and schedule information, regardless of whether travelers buy through an airline's website or a travel agent. Complementing these purchase options are new payment options that allow customers to use the payment method of their choice and airlines to benefit from reduced payment costs and the ability to accept diverse forms of payment onboard.

What is more, whatever offer a traveler chooses, the traveler's purchase will be fulfilled using a single order. Customers will no longer have to wrangle with Passenger Name Records (PNRs) or a booking record; with e-tickets (the receipt); and with electronic miscellaneous documents (EMDs) when they purchase ancillary services. And airlines will no longer have to struggle to reconcile different elements of a traveler's journey should that journey be disrupted, as there will just be one order for an entire journey, whether on a single airline or multiple airlines.

The goal is to achieve customer centricity. The air transport industry desires to put travelers fully in control of their credentials and data in a way that permits them to effortlessly consume any airline service, even, for example, during

travel disruptions. To achieve this, the industry is transforming its legacy processes and artifacts into modern retailing processes.

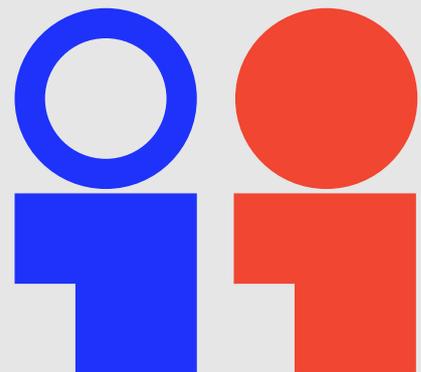
Modernizing legacy ticketing and back-office systems and processes is a case in point. The introduction of e-tickets digitized but did not otherwise change the related legacy paper processes. Online retailing, however, requires the complete replacement of legacy e-tickets, PNRs and EMDs. This is the purpose of ONE Order, which combines all three in the single order common to Internet retailing.

Along these lines, Finnair announced in September 2021 in an industry first that it would no longer process legacy-based distribution transactions beyond the end of 2025 and issued a call to action for others in the industry to join it in this significant step toward airline retailing. The new distribution capability (NDC) standard is the crucial gateway to enabling airline retailing, as it gives airlines control of the offer, which, in legacy systems, is created outside the airline. To date, more than 60 airlines have some degree of airline retailing capability through the NDC.

IATA is supporting airlines' transformation to airline retailing by ensuring that standards, implementation guides, and other requirements are easily accessible to all at every level

of each organization. IATA also engages with technology providers, travel agents, online travel agencies (OTAs), metasearch entities, and corporate buyers to ensure that all technical pain points are identified and that alternative industry approaches are proposed where possible.

In October 2021, IATA established its Airline Retailing Maturity (ARM) index to help airlines achieve airline retailing. The ARM index looks at an airline's technical capabilities and partnerships with sellers, and offers a "value capture compass," a tool to help airlines pinpoint where value is being or could be created. According to a report by McKinsey, airline retailing has a value creation potential of up to \$7 per passenger, the equivalent of approximately 4% of revenue.





“The air transport industry desires to put travelers fully in control of their credentials and data.”





www.iata.org