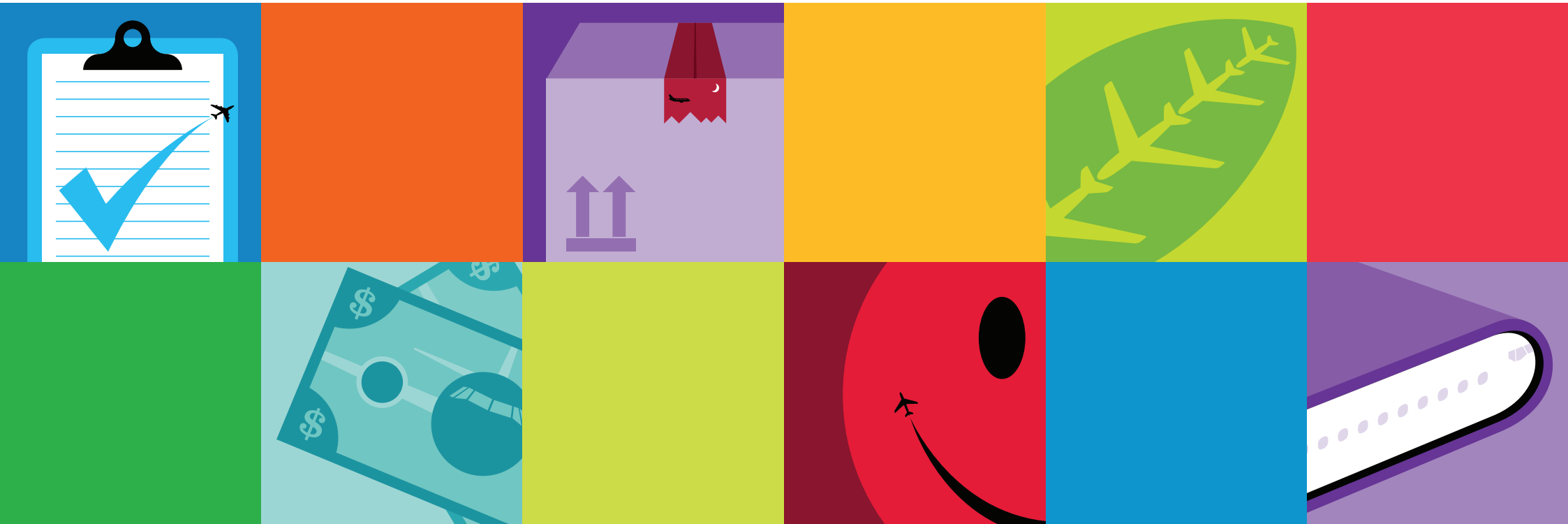
Annual Review 2016



Tony Tyler
Director General & CEO
International Air Transport Association
Annual Review 2016
72nd Annual General Meeting
Dublin, June 2016

1945—2015
70 YEARS
Flying better. Together.

Note: Unless specified otherwise, all dollar ($) figures refer to US dollars (US$).

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MEMBERS' LIST

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ABSA Cargo Airline
Adria Airways
Aegean Airlines
Aer Lingus
Aero Contractors
Aero República
Aeroflot
Aerolineas Argentinas
Aerolineas Galapagos S.A.
Aerogal
Aeromexico
Afriqiyah Airways
Aigle Azur
Air Algerie
Air Arabia
Air Astana
Air Austral
Air Baltic
Air Berlin
Air Botswana
Air Burkina
Air Cairo
Air Caledonie
Air Canada
Air China
Air Corsica
Air Europa
Air France
Air India
Air Koryo
Air Macau
Air Madagascar
Air Malta
Air Mauritius
Air Moldova
Air Namibia
Air New Zealand
Air Niugini
Air Nostrum
Air Serbia a.d.Beograd
Air Seychelles
Air Tahiti
Air Tahiti Nui
Air Transat
AirBridgeCargo Airlines
Aircalin
Airlink
Alaska Airlines
Alitalia
All Nippon Airways
AlMasria Universal Airlines
ALS
American Airlines
Arik Air
Arkia Israeli Airlines
Asiana Airlines
Atlas Air
Atlasjet Airlines
Austral
Austrian
Avianca
Avianca Brasil
Azerbaijan Airlines
Azul Brazilian Airlines

b

Bahamasair
Bangkok Air
Belavia—Belarusian Airlines
B H Air
Biman—Bangladesh Airlines
Binter Canarias
Blue Air
Blue Panorama
Blue1
bmi Regional
Boliviana de Aviación—BoA
Braathens Regional Aviation AB
British Airways
Brussels Airlines
Bulgaria air

c

C.A.L. Cargo Airlines
Camair-Co
Capital Airlines
Cargojet Airways
Cargolux
Caribbean Airlines
Carpatair
Cathay Pacific
China Airlines
China Cargo Airlines
China Eastern Airlines
China Postal Airlines
China Southern Airlines
CityJet
Comair
Condor
Copa Airlines
Corendon Airlines
Corsair International
Croatia Airlines
Cubana
Czech Airlines

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Delta Air Lines
DHL Air
DHL Aviation
Dniproavia
Donavia
Dragonair

e

Egyptair
EL AL
Emirates
Ethiopian Airlines
Etihad Airways
Euroatlantic Airways
European Air Transport
Eurowings
EVA Air

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Federal Express
Fiji Airways
Finnair
flybe
flydubai
Freebird Airlines

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Garuda Indonesia
Georgian Airways
Germania
Gulf Air

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

i

Iberia
Icelandair
InselAir
Interjet
Iran Air
Iran Aseman Airlines
Israir Airlines

j

Japan Airlines
Jazeera Airways
Jet Airways (India)
Jet Lite (India)
JetBlue
Jordan Aviation
JSC Nordavia-RA
Juneyao Airlines

k

Kenya Airways
Kish Air
KLM
Korean Air
Kuwait Airways

l

LACSA
LAM—Linhas Aéreas de Moçambique
LAN Airlines
LAN Argentina
LAN Cargo
LAN Colombia
LAN Perú
LANEcuador
LIAT Airlines
LLC Nordwind
LOT Polish Airlines

MEMBERS' LIST

Lufthansa
Lufthansa Cargo
Lufthansa CityLine
Luxair

m

Mahan Air
Malaysia Airlines
Mandarin Airlines
Martinair Cargo
MAS AIR
MEA—Middle East Airlines
Meridiana fly
MIAT Mongolian Airlines
Mistral Air
Montenegro Airlines
Myanmar Airways International

n

NESMA Airlines
Nextjet
NIKI
Nile Air
Nippon Cargo Airlines (NCA)
Nouvelair

o

Okay Airways
Olympic Air
Oman Air
Onur Air
Orenair

p

Philippine Airlines
Pegasus Airlines
PGA—Portugália Airlines
PIA—Pakistan International Airlines
Precision Air
PrivatAir

q

Qantas
Qatar Airways

r

Rossiya Airlines
Royal Air Maroc
Royal Brunei
Royal Jordanian
RwandAir

s

SAA—South African Airways
Safair
Safi Airways
Santa Barbara Airlines
SAS
SATA Air Açores
SATA Internaçional
Saudi Arabian Airlines
Shandong Airlines
Shanghai Airlines
Shenzhen Airlines
SIA—Singapore Airlines
SIA Cargo
S7 Airlines
Sichuan Airlines
Silk Way West Airlines
Silkair
SKY Airline
South African Express Airways
SriLankan Airlines
Sudan Airways
SunExpress
Surinam Airways
SWISS
Syrianair

t

TAAG—Angola Airlines
TACA
TACA Peru
TACV Cabo Verde Airlines
TAM—Transportes Aéreos del Mercosur
TAM Linhas Aéreas
TAME—Linea Aérea del Ecuador
TAP Portugal
TAROM
Tassili Airlines
Thai Airways International
THY—Turkish Airlines
Tianjin Airlines
TNT Airways
TransAsia Airways
TUIfly
Tunis Air
T'way Air

u

Ukraine International Airlines
United Airlines
UPS Airlines
Ural Airlines
UTair
Uzbekistan Airways

v

Vietnam Airlines
Virgin Atlantic
Virgin Australia
VLM Airlines
Volaris
Volga-Dnepr Airlines
VRG Linhas Aéreas
Vueling Airlines

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Wamos Air
Westjet
White Airways
Wideroe

x

Xiamen Airlines

y

Yemenia

IATA membership is growing. The association is attracting airlines from all corners of the globe and from all varieties of business model. The first quarter of 2016 alone saw 10 airlines join IATA.

In Europe, three airlines joined IATA: **Blue Air**, **Nextjet**, and **Mistral Air**, which principally operate out of Bucharest, Stockholm, and Rome, respectively. Blue Air was established in 2013 and flies to over 30 European destinations, while Nextjet is Sweden's largest regional carrier. Mistral Air operates charter flights and scheduled international flights. It is a 100% subsidiary of Poste Italiane and has its main hub at Leonardo da Vinci-Fiumicino International Airport.

Africa-Middle East likewise saw the arrival of **flydubai**, **Air Burkina**, and **Camair-Co**. Flydubai was set up in 2008 by the Dubai government and serves a network of 95 destinations in the Middle East, Africa, Asia, and Europe. Air Burkina, the national airline of Burkina Faso, was privatized in 2001 and is based at Ougadougou Airport. Camair-Co was established in 2006 and began operations under its present structure in 2011 at Douala International Airport.

Okay Airways, **T'way Air,** and **Capital Airlines** joined IATA from the North Asia region. These airlines have their main bases at Tianjin Binhai International Airport, Gimpo International Airport, and Beijing Capital International Airport, respectively. Capital Airlines is a subsidiary of Hainan Airlines.

IATA also welcomed **WestJet** from the Americas. WestJet, based in Calgary, is Canada's second-largest carrier. The airline operates to over 100 transatlantic destinations using scheduled and charter flights.

Meeting airline needs

What have been your top priorities as Chairman of the Board of Governors?
Safety is always the top priority for IATA. I am proud to say that last year was very positive and airline safety improved on the five-year rolling average. We had two unfortunate events: Metrojet and Germanwings. Those were deliberate acts, but even so we need to work together as an industry to help prevent such incidents going forward.

Sustainability is our license to grow. So at the ICAO Assembly later this year, it is very important that we continue to build on the progress made at COP21 in Paris.

Finally, I am also proud of the results of the financial systems that IATA manages. Airlines get their money on time, and that is important from the point of view of IATA's Board and of an airline.

How important is it that a global market-based measure framework is agreed to at the 39th ICAO Assembly in September 2016?
As an industry, we want to achieve carbon-neutral growth by 2020. And for that to happen, we need to have a global market-based measure (MBM) agreed to at the ICAO Assembly in September. We need to stand firm on our industry targets and keep insisting on the importance of the global .

Do enough governments understand aviation as a strategic asset?
There are governments that do not see airlines as a source of growth but as a source of revenue in the short term. IATA needs to work with the governments of all countries across all regions to help them understand the importance of aviation.

It is essential to have a sustainable industry that can generate employment and growth in the long term rather than have an industry that contributes to the government coffers in the short term.

IATA turned 70 during 2015. How can the association stay relevant over the next 70 years?
IATA has been successful because it has followed its guiding principles: collaboration, partnership, and global standards. In my view, it needs not only to continue adhering to those principles but also to get ahead of the curve. It needs to be proactive and look at those areas where we can build a stronger industry. ▸

IATA has made progress in attracting new-model airlines. How important is this for the association?
In this industry, there are many different business models, from full-service network carriers to low-cost carriers. But there are many aspects of the industry where the distinction between the different models becomes blurred and almost ceases to exist. All airline business models need the right infrastructure, for example, or low taxation.

I hope that every airline in every corner of the world sees IATA contributing toward those goals. And so I would encourage all airlines to join IATA because they will benefit from membership and provide additional experience to those of us who are already members.

What are your thoughts on the leadership transition?
Tony Tyler did a great job. His achievements are outstanding. In line with IATA principles, he improved partnerships and collaboration. And he guided a new global standard—New Distribution Capability—from its launch to the point today where it is being implemented in many airlines. He strengthened the industry and also strengthened IATA's management and corporate governance.

We expect Alexandre to follow a similar path but in his own style. He has great experience in the industry and in government, so I am convinced that he will also do a great job in leading IATA.

What are the potential areas of focus for IATA in the year ahead?
One of the pillars of IATA is global standards. We have, for instance, successfuly implemented a global standard in safety. It is important to continue along these lines, and I think that it will be key to have a global standard in consumer rights.

And there are still opportunities to improve IATA's main function—the financial systems. I am looking forward to continual upgrades in the on-time performance and cost-efficiency of processing airline funds.

The importance of the organization is huge. Having served on the IATA Board for a number of years and in the last year as Chairman has given me many opportunities to observe how my airline—Aeromexico—can do things better, implement global standards, and strengthen its operations.

IATA Board of Governors 2015–2016

CHAIR OF THE BOARD
Andrés Conesa
Chief Executive Officer
AEROMEXICO

MEMBERS
Akbar Al Baker
Chief Executive Officer
QATAR AIRWAYS

Saleh N. Al Jasser
Director General
SAUDI ARABIAN AIRLINES

David Bronczek
President and Chief Executive Officer
FEDEX EXPRESS

Yang Ho Cho
Chairman and Chief Executive Officer
KOREAN AIR

Chu Kwok Leung, Ivan
Chief Executive
CATHAY PACIFIC

Enrique Cueto
Chief Executive Officer
LAN AIRLINES S.A.

Alexandre de Juniac
President and Chief Executive Officer
AIR FRANCE-KLM
(representing AIR FRANCE)

(From November 2015) Mark Dunkerley
President and Chief Executive Officer
HAWAIIAN AIRLINES

German Efromovich
President of the Board of Directors
AVIANCA

(From February 2016) Pieter Elbers
President and CEO
KLM ROYAL DUTCH AIRLINES

Tewolde GebreMariam
Chief Executive Officer
ETHIOPIAN AIRLINES

Goh Choon Phong
Chief Executive Officer
SINGAPORE AIRLINES

Naresh Goyal
Chairman
JET AIRWAYS (INDIA) LTD

Rickard Gustafson
President and Chief Executive Officer
SAS

Robin Hayes
President and Chief Executive Officer
JETBLUE AIRWAYS

James Hogan
President and Chief Executive Officer
ETIHAD AIRWAYS

Harry Hohmeister
Member of the Executive Board and Chief Officer Hub Management
LUFTHANSA GROUP
(representing SWISS)

Alan Joyce
Chief Executive Officer
QANTAS

Temel Kotil
President and Chief Executive Officer
TURKISH AIRLINES

Liu Shaoyong
Chairman
CHINA EASTERN AIRLINES

Pham Ngoc Minh
President and Chief Executive Officer
VIETNAM AIRLINES

(From May 2016) Safwat Musallam
Chairman and CEO
EGYPTAIR

Mbuvi Ngunze
Managing Director and Chief Executive Officer
KENYA AIRWAYS

Masaru Onishi
Chairman
JAPAN AIRLINES

Douglas Parker
Chief Executive Officer
AMERICAN AIRLINES

Calin Rovinescu
President and Chief Executive Officer
AIR CANADA

Vitaly G. Saveliev
Chairman
AEROFLOT

Carsten Spohr
Chairman and Chief Executive Officer
LUFTHANSA

(From February 2016) Tan Wangeng
President and Chief Executive Officer
CHINA SOUTHERN AIRLINES

Willie Walsh
Chief Executive Officer
INTERNATIONAL AIRLINES GROUP
(representing BRITISH AIRWAYS)

ALSO SERVED
(To August 2015) Sameh Ahmed Zaky El Hefny
Chairman and Chief Executive Officer
EGYPTAIR

(To September 2015) Jeffery Smisek
Chairman, President, and CEO
UNITED AIRLINES

(To November 2015) Si Xian Min
President/Chairman
CHINA SOUTHERN AIRLINES

(To January 2016) Peter Hartman
Vice Chairman of the Board
AIR FRANCE-KLM
(representing KLM)

(November 2015–March 2016) Sherif Fathi Attia
Chairman and Chief Executive Officer
EGYPTAIR

A historic year for IATA **and its members**

In 2015, the world's airlines safely transported 3.5 billion people and 51 million metric tons of cargo. They accomplished this with a workforce of nearly 10 million people managing a fleet of 26,000 aircraft averaging 100,000 flights a day over a global network of 51,000 routes.

Even more impressive than the scale of these operational numbers is the contribution of aviation to prosperity. The industry supports the livelihoods of 63 million people and underpins $2.7 trillion of GDP. Aviation is a force for good. ▸

Financial Performance

Despite this, airlines have long struggled to reward their investors appropriately. But in 2015 a major milestone was achieved. At the industry level, airlines generated a return on invested capital exceeding the cost of that capital. Put simply, for the first time in history airlines made a normal level of profitability. In real terms, a $35.3 billion net profit on revenues of $718 billion.

That's good news. Profitable airlines are able to invest in product improvements, fund the growth of stronger networks, and purchase modern, fuel-efficient aircraft. And it helps passengers to continue to enjoy great deals on air travel, the cost of which has fallen 57% over the last two decades.

The spread of profitability, however, is far from even. Geographically, about two-thirds of the industry's profits are generated by airlines based in North America. And while passenger traffic is enjoying robust growth, the cargo business continues in the doldrums.

The fall in the oil price is a major driver of improved profitability. That has been reinforced by airline efforts that have raised load factors to all-times highs, increased ancillary revenues, and improved aircraft utilization. All indications are that 2016 will see a continued improvement in financial performance.

Safety

Another key marker of improved performance is safety—the industry's top priority. Looking at jet operations, there was one major accident for every 3.1 million flights in 2015. That's a significant improvement on the five-year average (2010–2014) of one accident for every 2.2 million flights.

As always, the industry strives to be ever safer and underpins this commitment with global standards and best practices. The IATA Operational Safety Audit (IOSA) has grown to over 400 airlines. This includes all IATA members, for whom this is a requirement.

Safety is a team effort. Airlines are working with partners in government and across the value chain to address emerging issues, such as the safe carriage of lithium batteries, pilot mental health, and the establishment of a regulatory framework for drones.

Security

Sadly, security threats continue to loom. Recent months have seen terrorists laying claim to bringing down an airliner and to severely disabling a major air hub. The list of security challenges also includes cyber-attacks, the movement of foreign terrorist fighters, and the overflight of conflict zones.

As with safety, the solutions to keep flying secure are being driven by strong government-industry partnerships. The focus is on risk-based measures backed up by solid intelligence, a prerequisite of which is effective information sharing among governments.

Sustainability

A similar partnership approach is propelling progress on sustainability. Advances in technology, operations, and infrastructure are improving environmental performance. Governments could boost these efforts by finding ways to realize the commercialization of sustainable aviation fuels and by modernizing air traffic management.

2016 presents a major opportunity. A proposal for a carbon offsetting scheme for international aviation has been developed through the International Civil Aviation Organization (ICAO). It is a critical tool for aviation to meet its commitment to cap net emissions with carbon-neutral growth from 2020. The industry is united in asking governments to formalize this proposal at ICAO's 39th Assembly later this year.

The Association

Whether it is safety, security, or sustainability, IATA is where the airlines come together to create and deliver value.

That value extends to the consumer through global standards and processes. IATA's financial systems enable global distribution and reliably handled $362.9 billion in 2015. The New Distribution Capability (NDC) standards are moving into the deployment stage. And by year-end, Fast Travel self-service solutions are anticipated to cover 40% of travelers and e-air waybill penetration is expected to reach 56% on available trade lanes.

I have had the privilege of leading IATA for five years. In that time, IATA's membership has grown to 264 airlines, constituting 83% of global traffic, coming from all regions, and covering the complete spectrum of business models. We have strengthened our partnerships with regional and global stakeholders and set out an agenda to remind the world of aviation's role. We must not be shy in explaining that aviation is a force for good. IATA's standards, expertise, and unique global perspective are relevant, and IATA's staff are motivated in their mission to represent, lead, and serve the airline industry.

Your association is strong, and I look forward to passing its leadership to my successor with great confidence. With the approval of the 72nd IATA Annual General Meeting, Alexandre de Juniac, the Chairman and CEO of Air France-KLM, will become IATA's seventh Director General and CEO in September.

I thank the Board, all the IATA members, our many partners, and the IATA staff for their help, support, and wise counsel. And I wish Alexandre all the best in leading IATA to even greater heights.

Tony Tyler
Director General and CEO, June 2016

Continuing recovery: **challenges remain**

Passenger market surpasses 3.5 billion

The two branches of the commercial air transport industry—passenger and freight—had contrasting fortunes in 2015. Industry-wide revenue passenger kilometers (RPK) grew 7.4%. This was the greatest increase since the rebound from the depth of the global financial crisis in 2010 and well above the long-run average of 5.5%. Altogether, more than 3.5 billion passenger segments were flown in 2015, an increase of 240 million compared with 2014.

Aviation's center of gravity continues to shift eastward

Aviation's center of gravity continued to shift eastward in 2015, with 7 of the top 10 increasing origin-destination (O-D) passenger markets located in Asia. Despite well-documented signs of slowing growth in China's economy, China's domestic air passenger market saw the biggest incremental rise in journey numbers in 2015, with 36 million more passenger journeys made than in 2014. This increase was more than in the next two largest-gaining markets combined: domestic Indonesia and domestic India. Popular markets for Chinese outbound tourism also grew strongly; specifically, journeys to and from Thailand and Japan.

By virtue of the United States' position as the world's largest air passenger market, even modest year-on-year passenger growth of 1.7% in 2015 translated into almost 8 million additional passenger journeys in the US domestic market.

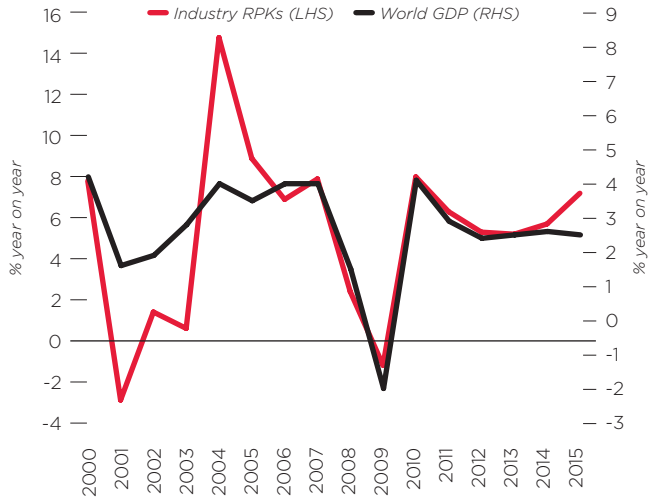
Freight has another start-stop year

Transpacific air freight benefited in early 2015 from a disruption to seaports on the US West Coast. However, the rest of the year proved weaker for air freight, and industry-wide freight tonne kilometers (FTK) increased just 2.3% year on year in 2015.

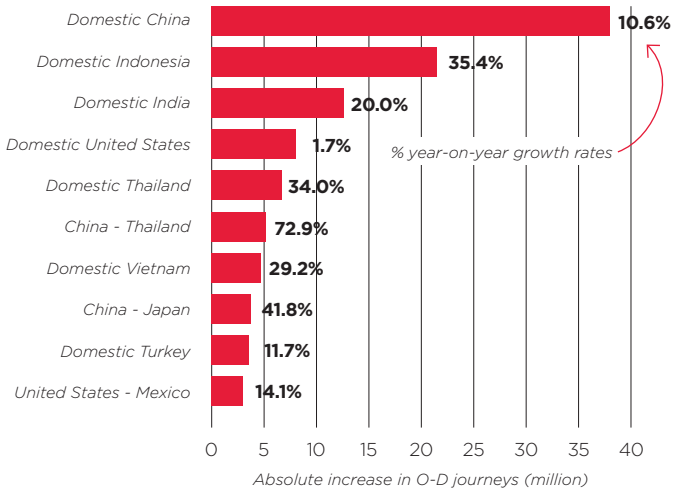
The minimal growth in air freight seen since the global financial crisis has coincided with weakness in world trade growth. It was considered normal for world trade to grow at around twice the pace of global output. But this relationship has changed in recent years, and trade volumes now grow broadly in line with global output. In fact, global trade grew just 2.0% in 2015—slower than the estimated pace of global GDP growth.

1. RPK versus world GDP growth

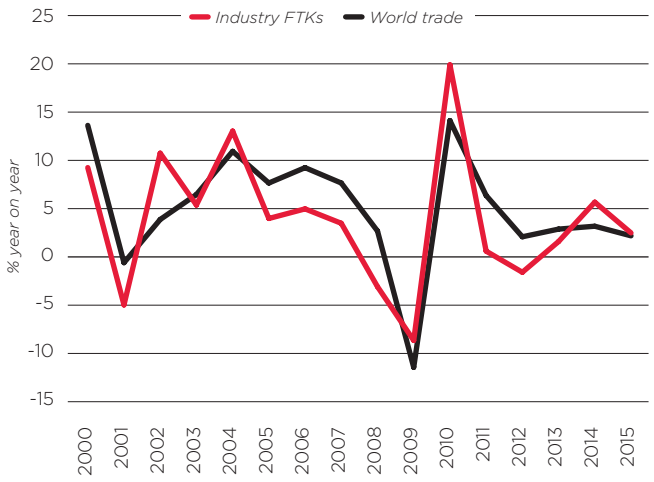
(*Sources:* IATA BIS, IMF)



2. Top 10 increasing O-D markets in 2015 (*Source:* IATA PaxIS+)



3. Air freight versus global trade growth (*Sources:* IATA BIS, IMF)



Oil price and exchange rates falls dominate 2015

The sharp decline in jet fuel prices that occurred in late 2014 continued in 2015, such that the average price of a barrel of jet fuel in 2015 was 42% lower than in 2014. Jet fuel prices fell further in the final months of 2015 and ended the year at around $48 a barrel—the lowest level in more than 11 years.

The declines in jet fuel prices, however, were not felt evenly across airlines and regions globally. This partly relates to different hedging practices within the industry, which can delay the benefits of lower oil prices translating into lower unit costs. But sharp drops in the value of many currencies against the US dollar were another complicating factor in 2015, as the exchange rate declines offset the benefits of cheaper US dollar–based oil prices for many airlines. This was particularly the case for Brazil and Russia, whose currencies fell 30%–40% against the US dollar.

Adjusting for distortions caused by the strong rise in the US dollar, global airfares fell around 4.5% on average in constant exchange rate terms during 2015 compared with a year earlier. This was largely because competition intensified in markets that did see decreases in local currency fuel costs. IATA estimates that the resulting surge in demand accounted for around half of the annual growth in passenger traffic seen in 2015.

Divergence between passenger and freight loads

Airlines added capacity cautiously in 2015 despite strong passenger demand. Available seat kilometers flown increased 6.7% compared with 2014, and the industry-wide passenger load factor increased 0.6 percentage points over the 2014 percentage to an all-time high of 80.4%.

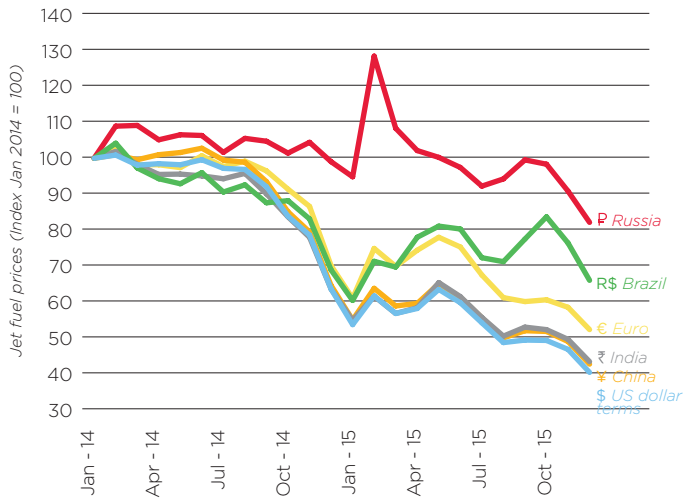
By contrast, growth in freight capacity outstripped demand, partly reflecting ongoing additions to belly-hold capacity in the passenger fleet. Available freight kilometers in 2015 increased 5.8% year on year.

As a result, the freight load factor dropped to 47.4%, 1.6 percentage points lower than in 2014 and the lowest annual average since 2009. This kept intense pressure on freight yields.

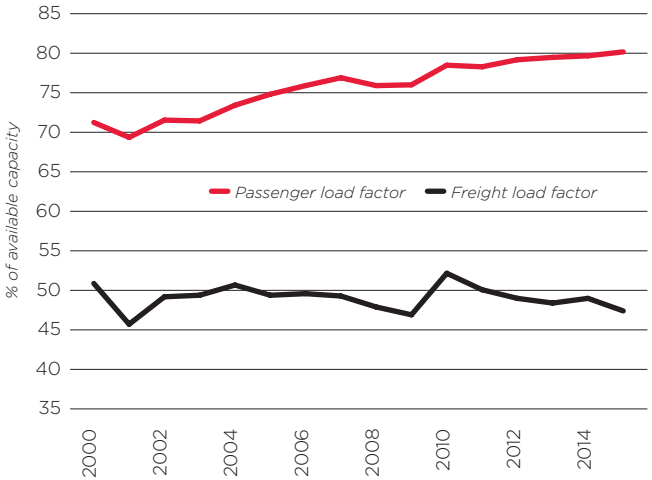
Financial performance driven by load factor and productivity

Fuel is a major expense for airlines and accounted for, on average, 27% of an airline's costs in 2015. This means that the reduction in fuel costs in 2015 lowered the industry-wide break-even load factor.

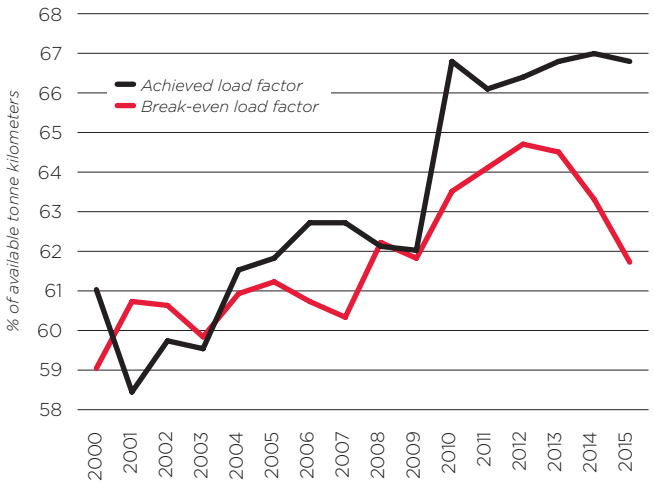
4. Exchange rate–adjusted jet fuel prices (*Sources:* IATA, Platts, Thomson Reuters Datastream)



5. Industry passenger and freight load factors (*Sources*: IATA BIS)



6. Break-even and achieved load factors (*Sources:* IATA, ICAO)



Changes in industry structure and more returns-focused behavior on the part of airlines also exerted downward pressure on the break-even load factor and helped to keep load factors at historically high levels. The industry, moreover, has seen capital productivity trend upward over the past few years, with airlines generating increasing revenue from their capital bases.

The widening gap between break-even and achieved load factors has driven the improvement in the industry's financial performance.

A strong year for industry profitability

Such is the intensity of competition and the challenges of doing business in aviation that air industry equity investors have typically seen their capital shrink. It is noteworthy that 2015 was the first year in which the industry paid its investors a return on capital that exceeded the cost of capital. In most other industries, this performance would be regarded as the norm.

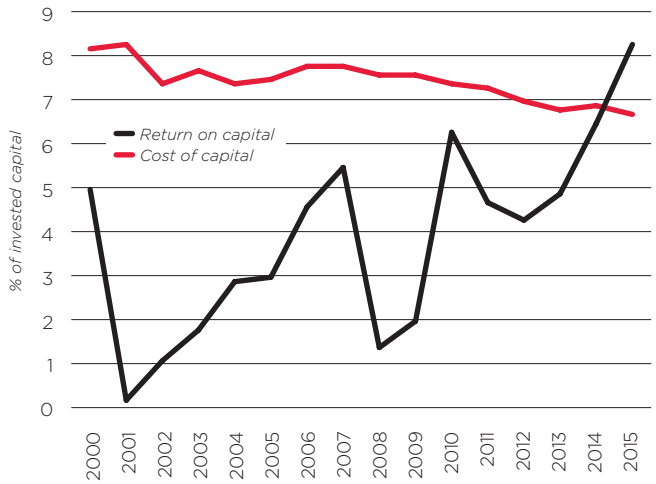
In 2015, airlines posted their strongest financial performance on record. The $35.3 billion net, after-tax profit that the industry generated was almost more than double that in 2014. The corresponding operating margin of 8.3% of revenues was also a record for the industry, up from 4.7% in 2014 and almost three times that achieved in 2012.

But the bigger picture is that the industry's $35.3 billion profit still only represented $9.89 of profit per passenger—a slim margin compared with other industries. The industry's highly leveraged balance sheets, furthermore, will in most cases require a prolonged period of profitability to improve. Only a handful of airlines are rated investment grade by ratings agencies.

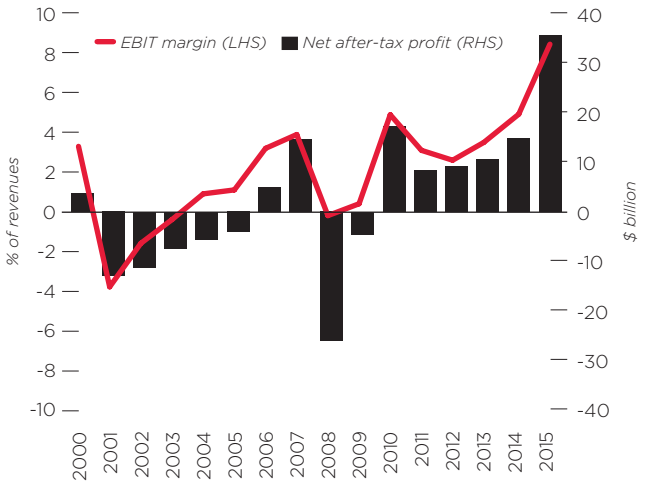
Divergence in financial performance at a regional level

The aggregate industry picture in 2015 masked a wide spread in financial performance at the regional level and that high investor returns are not evenly distributed throughout the industry. Once again, the strongest financial performance was delivered by airlines in North America. US carriers have driven much of the rise in industry profits in recent years. European and Asia-Pacific airlines generated moderate profits in 2015, in spite of further weakness in cargo yields, which particularly affected Asia-Pacific airlines. Latin American and African airlines posted net after-tax losses in 2015 due to challenging conditions in major energy export dependent economies.

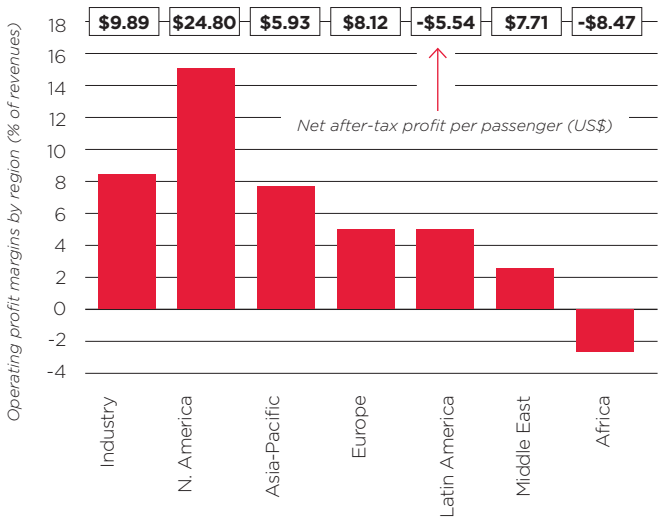
7. Return on capital invested in airlines (*Sources:* IATA, ICAO)



8. Global commercial airline profitability (*Sources:* IATA, ICAO)



9. Operating margin and net profit per passenger by airline region of registration (*Sources:* IATA, ICAO)



Wide choice, lower costs to consumers

Air transport boosts economic development. The ongoing increase in unique city-pair routes has enabled a corresponding increase in the flow of goods, people, capital, technology, and ideas. Time savings and more nonstop connections have increased choice for consumers. The number of unique city-pair connections exceeded 16,600 in 2015, 350 more than in 2014 and almost double the connectivity by air 20 years ago. The price to users of air transport continues to fall, meanwhile, after adjusting for inflation. Compared with 20 years ago, real transport costs have more than halved.

Air transport is crucial to international trade

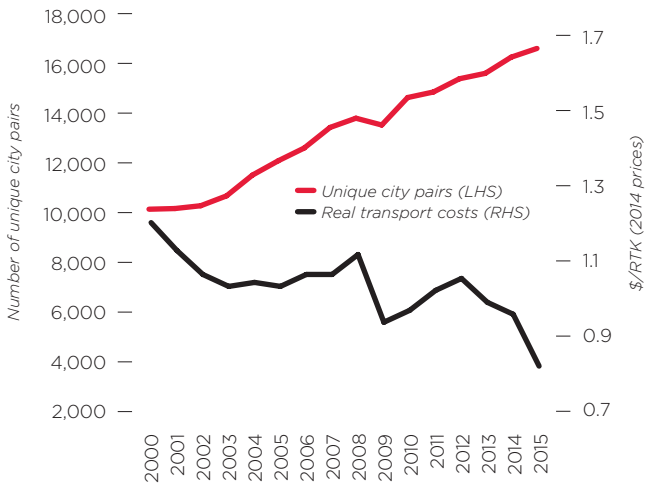
Air transport is a vital link for international trade and plays a critical role in facilitating tourism. Lower transport costs and improving connectivity have boosted trade flows by globalizing supply chains and associated investment.

IATA estimates that the value of international trade shipped by air in 2015 was $5.7 trillion. And tourists traveling by air spent over $620 billion in 2015. Both values were lower than in 2014 because of the distortion from 2015's stronger US dollar.

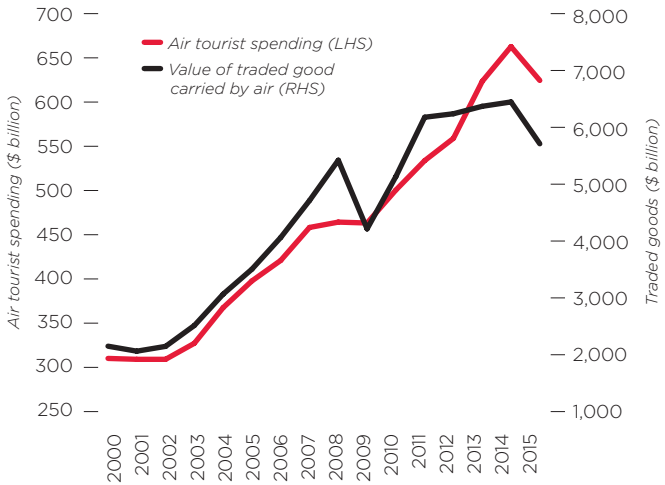
Aviation's wider benefits for the global economy

Another impact of aviation on the wider economy is the influence that increased airline activity has on job creation, in the aviation value chain and in other, related sectors, as spending ripples through the economy. It is estimated that aviation supported 63 million jobs in 2015 and underpinned $2.7 trillion of GDP.

10. Unique city pairs and real transport costs (*Sources:* IATA, ICAO, Boeing, SRS Analyser)



11. Value of trade carried by air and tourist spending (*Sources:* IATA, WTTC, IHS)



Flying safely: **the number one priority**

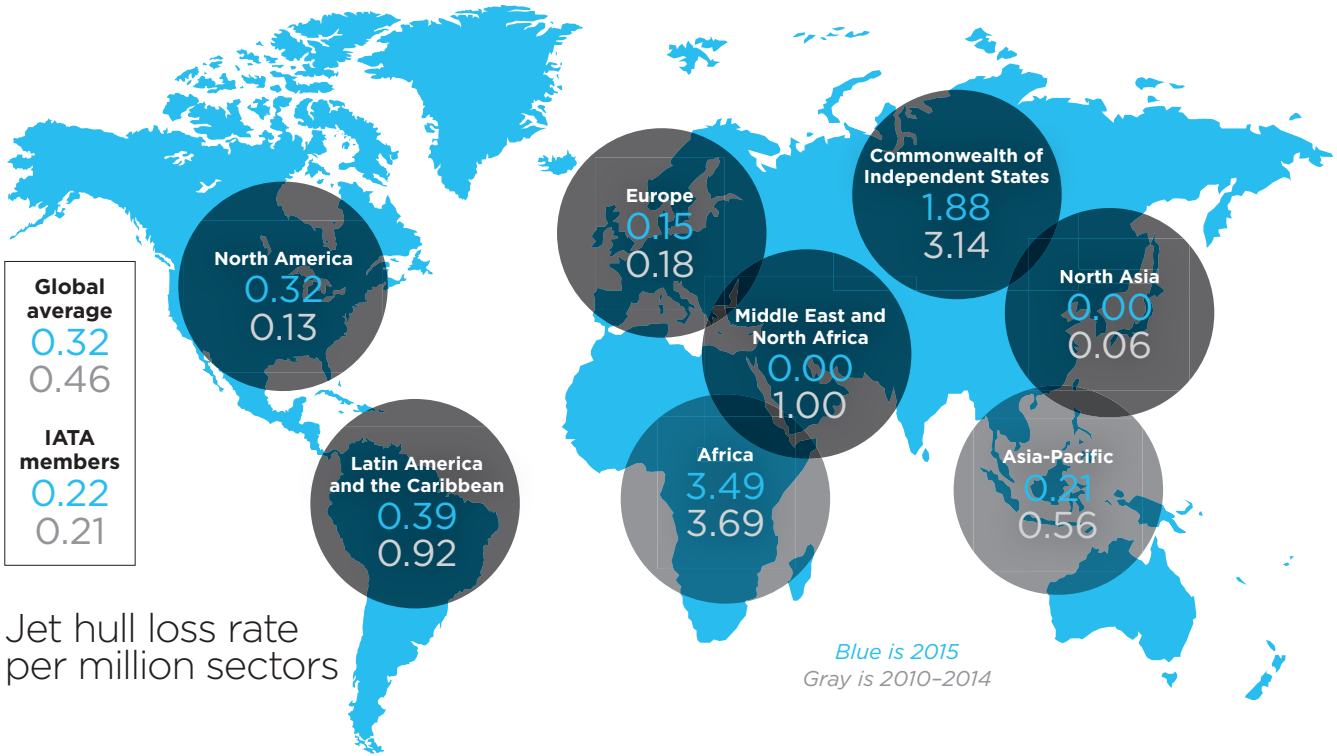
Safety

The 2015 safety performance was marked by divergent themes. The global jet accident rate (measured in hull losses per 1 million flights) was 0.32, the equivalent of one major accident for every 3.1 million flights. This was a 30% improvement compared with the five-year rate from 2010 through 2014 of one major accident for every 2.2 million flights.

Although aviation professionals work hard to prevent any loss of life, the industry experienced four fatal hull loss accidents in 2015, all involving turboprop aircraft and totaling 136 fatalities. This compares with an average of 17.6 fatal accidents for jets and turboprops and 504 fatalities per year in the five years from 2010 through 2014.

Yet 2015 was also a year in which the world was shocked by the deliberate destruction of aircraft and the murder of passengers—by a suicidal pilot (Germanwings 9525) and by what is believed to have been an act of terrorism (Metrojet 9268). These two events resulted in the deaths of 374 passengers and crew. Neither event is included in the accident statistics for the year because they are classified as deliberate acts of unlawful interference. But each casts a shadow on the industry's safety performance.

In this way, 2015 was reminiscent of 2014, which was one of the industry's safest years ever in terms of fatal accidents but marred by the disappearance of one aircraft and the shooting down of another. There are no easy solutions to the issues revealed in each of these tragedies. The aviation industry nevertheless continues to work to minimize the risk that such events will happen again.



Aircraft tracking

The focus on aircraft tracking following the disappearance of MH370 culminated in November 2015 with the adoption by ICAO of a tracking standard. Beginning November 2018, the standard requires operators to provide the position of aircraft at least every 15 minutes for the portion of flights through oceanic and remote airspace.

Crucial to the development of this standard was the industry expertise provided through ICAO's Normal Aircraft Tracking Implementation Initiative (NATII), which included a tabletop exercise to test the proposed standard in real-world scenarios. The industry and ICAO are partnering again through NATII 2 to develop complementary standards, recommended practices, and guidance material to support the tracking standard. It is also expected that new systems and technology, if adopted universally by air navigation service providers (ANSPs), will enable global surveillance.

Of course, many airlines already track their aircraft. But the collaborative effort that resulted in the adoption of the performance-based tracking standard—underpinned by multinational participation in NATII and NATII 2 and industry expertise—demonstrates the effectiveness of an approach where the aviation industry and regulatory bodies work together.

Pilot mental and emotional health

The Germanwings 9525 tragedy was an exceptional event. Pilot suicides are rare in commercial aviation. Unfortunately, it is impossible to predict human behavior accurately with existing tests. The industry, though, is working to maximize predictability related to the mental and emotional health of pilots.

In May 2015, the US Federal Aviation Administration (FAA) announced the formation of a Pilot Fitness Aviation Rule-Making Committee (PFARC) on which airlines were represented at the request of IATA. PFARC submitted its report to the FAA administrator for review in November 2015.

Concurrently, the EC asked the European Aviation Safety Agency (EASA) to set up a task force to look into the Germanwings tragedy. The EASA task force comprised senior representatives from airlines, flight crew associations, medical advisory bodies, and other authorities. The principle of two persons in the cockpit at all times is one of six task force recommendations. Also recommended is that pilots undergo a psychological evaluation before entering airline service, that pilot support systems be implemented within airlines, and that there be more defined guidance on drug and alcohol testing.

EASA conducted a first international workshop on the medical fitness of pilots to get feedback from stakeholders—including IATA—on the best ways to implement its recommendations and a technical meeting on several initial regulatory proposals where IATA contributed to the development of a balanced enhancement of risk mitigations. A second workshop is planned in mid-2016, after which EASA's intent is to implement the task force recommendations with a mix of regulatory and nonregulatory measures.

IATA will work closely with its member airlines and regulators to achieve the best possible outcomes in protecting and enhancing flight safety. This includes working to prevent or minimize unintended negative consequences in the event of safety failures.

An outcome of the investigation by France's civil aviation authority, the BEA, into the Germanwings accident is the BEA's recommendation in its final report that IATA encourage its member airlines to implement measures to mitigate the socioeconomic impact for pilots who lose their license for medical reasons. There is no clear global consensus on this recommendation. But it should be noted that there are no global standards for providing workplace insurance for pilots. This varies greatly by country based on several factors, including national healthcare policies.

Following the data

As stakeholders work to address the issues discussed, it is important that the industry continues to dedicate resources to areas that safety data show will have the biggest impact in reducing the risks of an accident. In 2015, efforts to reduce operational risk again focused on runway excursions (RE), loss of control in flight (LOC-I), and controlled flight into terrain (CFIT).

Almost all LOC-I and CFIT accidents lead to fatalities and hull losses, whereas most other accidents mainly damage aircraft, though this, too, can lead to hull losses. From 2011 through 2015, for example, 3% of runway and taxiway excursions caused fatalities, making them the third source of fatal accidents. Runway and taxiway excursions, however, were the main source of hull losses during that period, with hulls lost in 25% of all such events.

In 2015, hard landings and runway excursions were the most frequent categories of accidents, at 24% and 22%, respectively. Hard landings may cause aircraft damage but do not typically result in serious injuries to passengers. The survivability of runway excursions likewise is high; RE represented less than 1% of fatalities in the five years from 2011 through 2015.

The industry is implementing reports and guidance materials that establish best practices in support of mitigating runway safety risks. And IATA continues to work with international organizations to analyze and develop mitigation strategies to reduce runway excursion and overall fatality risks in commercial aviation.

Flight data monitoring (FDM) indicators can be powerful tools for an airline in improving and monitoring operational safety. As such, the IATA Operational Safety Audit (IOSA) requires that operators have a flight data analysis (FDA) program that is nonpunitive and that contains adequate safeguards for data sources.

Loss of control in flight is not a common accident, but it has the highest number of fatalities. LOC-I accounted for just 8% of accidents in the five years from 2011 through 2015, but 97% of those LOC-I accidents involved fatalities to passengers and crew. The IATA Training and Qualification Initiative (ITQI) provides guidance for enhanced pilot training to help address factors contributing to LOC-I. IATA is also developing guidance materials and best practices to support the awareness and mitigation of LOC-I occurrences.

Controlled flight into terrain accidents are as much a concern as LOC-I. CFIT accidents represented 7% of the accidents in the five years from 2011 through 2015 but accounted for 20% of fatalities. Most CFIT accidents occur in the approach and landing phase of flight and are often associated with imprecise approaches.

The industry's efforts to reduce CFIT incidents include the development of a CFIT Accident Reduction Strategy, which was endorsed by IATA's Safety Group members in 2015. Numerous factors contribute to CFIT events. Typically, aircraft malfunction is not their main cause. Causes rather are most often attributed to flight crew or human error, such as noncompliance with standard operating procedures, poor crew resource management (CRM), inadequate flight path management, and the like. From 2011 through 2015, 60% of CFIT accidents involved situations where the ground-based Nav-Aid malfunctioned or was unavailable, which would contribute to an imprecise approach.

The industry continues to focus its operational safety efforts on reducing CFIT accidents and employs mitigation strategies to that end. IATA is developing guidance materials to enhance awareness of the contributing factors and outcomes of unstable approaches and best practices in CRM aimed at establishing a multilayered defense against undesirable conditions.

Emerging safety risks

Addressing emerging safety issues is an important element of IATA's Six-Point Safety Strategy.

Remotely piloted aircraft systems

The use of unmanned aircraft is expanding rapidly beyond their initial military functions. Drones, or remotely piloted aircraft systems (RPAS), are increasingly being used in environmental and fishery operations, disaster response, law enforcement, firefighting, and many other civic and commercial activities, and this trend is forecast to grow exponentially.

There has also been a notable increase in the recreational operation of RPAS. More than 340,000 people have registered small drones in the United States since the FAA announced its registry in late 2015. And the rise in the number of reports of RPAS operating dangerously close to manned aircraft and airports coincides with the growth in the number of RPAS overall. Regulators must ensure that RPAS do not interfere with the airways or pose a safety risk to airline passengers.

Most RPAS operators pose no risk. But a smart approach to regulation and a pragmatic and firm method of enforcement for those who disregard rules and regulations and put others in danger are required. Education is an important tool in this regard. So IATA is supporting the Know Before You Fly campaign to teach people about the safe and responsible operation of RPAS.

Governments have agreed that a globally harmonized approach through the ICAO process, including the development of standards and recommended practices, is vital to safely and efficiently integrating drones into civil airspace. Stakeholders also agree that such steps need to be taken on an accelerated basis. In February 2016, a joint statement was released by the International Federation of Air Line Pilots' Associations (IFALPA), Airport Councils International (ACI), and IATA to raise safety awareness among RPAS users.

Other emerging issues

In February 2016, ICAO adopted a measure that prohibits on an interim basis all loose shipments of lithium-ion batteries as cargo on passenger aircraft. The prohibition does not apply to lithium-ion batteries packed with or contained in equipment. It also does not apply to the lithium-ion batteries in personal electronic devices carried by passengers and crew. The carriage of lithium-ion batteries on freight aircraft continues to be permissible provided the batteries do not carry a charge beyond 30% of their capacity.

In a related issue, new consumer devices powered by lithium-ion batteries, such as hoverboards and balance boards, have shown in a series of incidents to be a fire risk. IATA recommends that these devices be restricted to cabin baggage only.

IATA continues to work with regulators to ensure that the manufacturers of faulty or fake batteries and anyone shipping batteries in contravention of the *Dangerous Goods Regulations* are punished by the authorities. The industry is also working on solutions to contain and eliminate lithium-ion battery fires so that these batteries can again be safely carried on passenger aircraft.

Another challenge for the aviation industry is lasers aimed at aircraft from the ground. The number of incidents is rising steadily, up approximately 16% over the past two years according to voluntary airline reports to IATA. The industry continues to advocate for the strict enforcement of laws and regulations prohibiting this dangerous activity and for the introduction of such laws and regulations in nations where they do not exist.

The International Airline Training Fund (IATF) serves as IATA's corporate social responsibility. It sponsors training for airlines and other aviation industry stakeholders in developing economies to build stronger aviation skills and to foster the implementation of industry best practices and standards where they are most needed.

In 2015, the IATF trained 3,152 aviation industry professionals from developing nations. Aviation safety enhancement remained the IATF's priority through the continuation of the SMS Implementation Training Program in Africa and Latin America; the Diploma in Safety Oversight for Civil Aviation Authorities in Africa; and the IOSA Implementation Training Initiative for African airlines, thanks to which nine airlines have so far been admitted to the IOSA registry.

The IATF is funded by annual contributions from IATA and its member airlines.

Safety audits

Airlines on the IOSA registry experienced four nonfatal jet hull loss accidents and one fatal turboprop hull loss accident in 2015. The 2015 accident rate among all aircraft types for IOSA-registered carriers was nearly three times better than that for non-IOSA carriers, at 1.14 vs 3.23. And compared with the five years from 2010 through 2014, the rate was more than three times better: 1.48 vs 4.99.

As of 1 March 2016, 405 airlines were on the IOSA registry. IOSA registration is a requirement for IATA's 264 member airlines. That 145 nonmember airlines are also on the registry is evidence that IOSA is the global benchmark for airline operational safety management. A focus in 2016 is ensuring that the highest standards of quality assurance are being maintained throughout the audit process.

The IATA Safety Audit for Ground Operations (ISAGO) helps improve safety and reduce costs related to ground damage. In 2015, ISAGO introduced safety management system (SMS) requirements for providers, including a three-year (2016–2018) strategy for their implementation. As of May 2016, the ISAGO Registry had surpassed 200 registered providers, with 379 registered stations in 253 airports worldwide. The ISAGO stakeholders are developing a new audit model that will be launched in September 2017. The member-based audit program will be discontinued from 2018 and new audit program management will comprise a charter of professional auditors (CoPA), a new scheme of charges, and lead auditing entities (LAE) that will administer the audits on IATA's behalf.

Six-Point Safety Strategy

IATA's Six-Point Safety Strategy is a comprehensive, data-driven approach to identifying organizational, operational, and emerging safety issues. Its six points are as follows:

- Reducing operational risk
- Enhancing quality and compliance through audit programs
- Advocating for improved aviation infrastructure, such as the implementation of performance-based navigation approaches
- Supporting the consistent implementation of safety management systems
- Supporting effective recruitment and training to enhance quality and compliance through programs such as the IATA Training and Qualification Initiative, which seeks to modernize and harmonize the training and assessment of pilots and maintenance technicians
- Identifying and addressing emerging safety issues

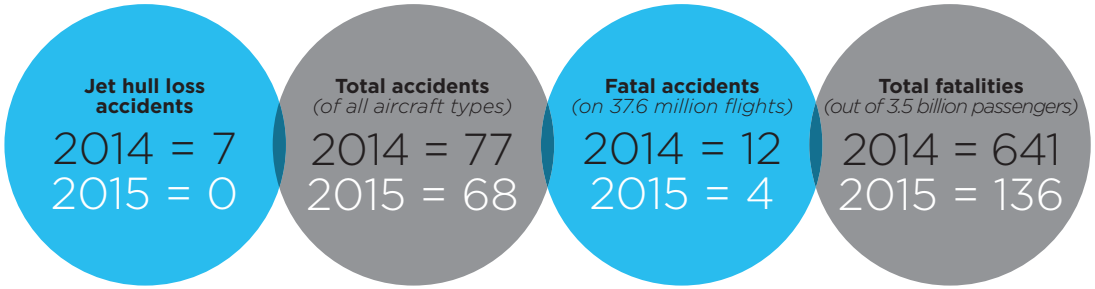
Fatality Risk

In 2016, IATA introduced another measure of safety to its analysis. Fatality risk examines the exposure of passengers and crew to a catastrophic accident where all on a flight perish. While a fatal accident indicates an accident with at least one fatality, the full-loss equivalent indicates the proportion of people on board who were killed. The calculation of fatality risk does not take into account aircraft size or how many are on board.

Fatality risk provides a baseline for comparison among accident categories. LOC-I, for example, is known to have a high fatality risk but a low frequency. RE has a low fatality risk but a high frequency. It is possible, therefore, for the two categories to have the same fatality risk if the frequency of RE is so high that the generally small full-loss equivalent for each individual accident produces the same total full-loss equivalent as LOC-I, per million sectors.

In 2015, there were four accidents with at least one fatality, and the sum of the full-loss equivalents was 3.72. This translates to a fatality risk of 0.10 per million sectors, or 1 per 10 million sectors. This was a significant improvement over the average for 2010 through 2014, where the total full-loss equivalent was 14.44 and the fatality risk was 0.42 per million sectors.

Key safety figures at a glance



Regional safety initiatives

1 LATIN AMERICA/CARIBBEAN

In 2015, five years ahead of time, the Latin American and Caribbean region achieved its 2020 target of a 50% fatality risk reduction compared with the 2009–2011 rolling average. The region's fatality risk, based on a 2013–2015 three-year rolling average, was 0.28, compared with 1.05 in the 2009–2011 period. In addition, the region had no fatalities in 2014 and 2015. The 2020 target was included in the 2013 Bogota Declaration and 2014 Port of Spain Declaration, which were signed by all of the region's countries and confirmed by member airlines in the Latin America/Caribbean (LATAM/CAR) and North Atlantic and North American (NATNAM) regional coordination groups. The declarations took aim at reducing the RE, LOC-I, CFIT, and traffic collision avoidance system events that are the main contributors to fatalities in the Latin America and Caribbean region.

The region's successes in 2015 highlight the effectiveness of the partnership approach taken by the Regional Aviation Safety Group—Pan American. Governments and the aviation industry are working as equal partners toward a shared level of safety. This entails a representative of the region's nations and a representative of the industry cochairing a balanced working structure where everyone has the same rights and responsibilities.

2 AFRICA

Africa had the highest accident rate among regions in 2015, at 7.88 accidents per million sectors. This, however, was a substantial improvement over its five-year average, from 2010 through 2014, of 11.64 accidents per million sectors. The improvement coincides with the signing of the Abuja Declaration, which commits African nations to improve aviation safety.

Challenges in bringing Africa in line with global performance remain. IOSA overcomes many of these challenges. The 32 sub-Saharan airlines on the IOSA registry are performing 3.5 times better than non-IOSA operators in terms of accidents. African nations should make IOSA a part of their airline certification process. Regional governments also need to accelerate the implementation of ICAO's safety-related standards and recommended practices (SARPS). As of the end of January 2016, only 21 African countries had at least 60% SARPS implementation.

3 EUROPE/CIS

An aim in Europe is greater clarity of the EU safety list of carriers banned from flying into the European Union. A success in this regard was the removal of Air Astana from the list in 2015. Other safety initiatives in Russia and the CIS included a safety conference in Kazakhstan at which area stakeholders developed a theory-to-practice concept of safety.

In line with the fifth of its six safety strategy points, IATA co-organized an evidence-based training (EBT) implementation workshop at ICAO in Paris. The shift from established, traditional training methods to fact-based, competency-focused methods faces challenges. Nevertheless, through the ICAO regional office many willing airlines, especially from eastern Europe, have benefited from the shared experience of operators that have implemented EBT.

4 NORTH ASIA

In 2015, the Civil Aviation Administration of China enhanced China's safety management system by introducing new safety oversight measures. IATA is working with airlines to cooperate with the administration to improve the adaptability and applicability of these measures.

Security processes: **effective, efficient**

Security

We live in an increasingly complex world, where the threat of terrorism is a fact of life. No part of the globe is immune, and aviation remains a special target. We were reminded of that with the attacks in Brussels in March 2016 and the attempted destruction of a Daalloo Airlines aircraft in February 2016 and, earlier, with the downing of Metrojet 9268 in October 2015 in what is believed to have been an act of terrorism.

Governments are aviation's closest partners in security. Ultimately, security is the responsibility of national governments, which have vastly more resources and capabilities than the industry, including access to information from intelligence agencies. Aviation thus relies on governments to provide it with the guidance and information to help it manage risks and keep its passengers, crews, and cargos secure. Governments and aviation must work together to ensure that information relevant to security is shared.

This is especially so given that threats to security are constantly evolving. The emergence of cyber-attacks and the movement of foreign terrorist fighters (FTFs) have added new dimensions to the challenges. Aviation is well aware of this through its work on countermeasures with governments and other security stakeholders.

Conflict zones

Information and countermeasures are particularly important regarding the risks to aircraft overflying conflict zones, as was tragically borne out in the shooting down of MH17. In 2015, the report of the Dutch Safety Board concluded that MH17 was destroyed by a ground-to-air missile while operating in airspace open to commercial aviation. The Dutch investigators also confirmed that in the months leading up to this event no nation or international organization explicitly warned of risks to civil aviation in the airspace involved and no nation restricted or prohibited its airlines from using that airspace.

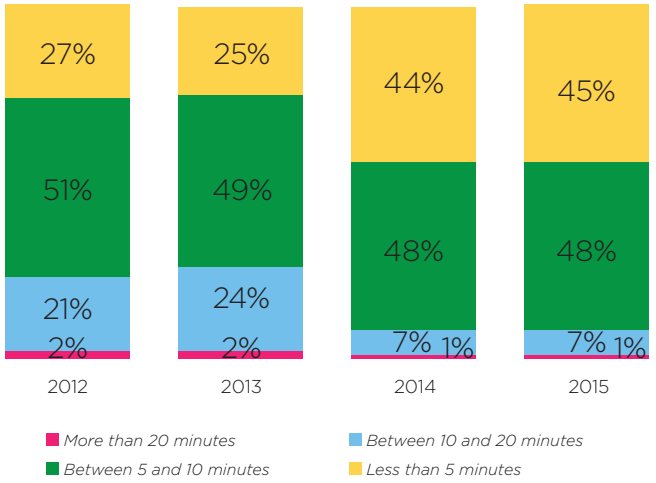
IATA supported the efforts of the Dutch Safety Board to reveal the causes behind the downing of MH17 and to ensure that such an event is not repeated. IATA was most supportive of the board's recommendations that countries strengthen their mechanisms for monitoring and maintaining the security of their airspace.

One such mechanism is the Conflict Zone Information Repository established by ICAO in 2015. The repository allows countries to share their conflict zone information, and some nations are indeed beginning to provide useful information. But more countries need to participate to ensure a more complete picture of the security situation.

The aviation industry is working to reduce the risk of anything resembling the MH17 event. Operators and regulators know that risk can never be eliminated entirely. The objective must be to minimize risk. Airlines have developed proven approaches to effective risk mitigation. This includes cultivating effective information sharing and significant investments to develop mechanisms and methodologies to evaluate, assess, and exchange threat information across communities of interest.

All 264 IATA members and 145 non-IATA airlines, moreover, hold IATA Operational Safety Audit (IOSA) certification. IOSA is an important, proactive, and robust mechanism that includes an assessment of airlines' security management systems (SeMS) and, as of an update in 2015, conflict zone risk management practices. IOSA compliance is also documented through a publicly accessible registry.

Acceptable queuing time at security checks



(Source: IATA Global Passenger Survey)

Passenger data management

In line with keeping aircraft secure in flight, the industry must do all that it can to keep terrorists from getting on board aircraft. Critical in this is the role that governments play in analyzing information collected through advance passenger information (API) and passenger name records (PNR). The movement of FTFs from the Syrian conflict gives this issue particular urgency and relevance.

More than 60 nations require API from airlines. A growing number of countries also require carriers to provide PNR information from their reservation systems. The number of nations requiring such information is, in fact, expected to increase significantly in the coming years. Internationally agreed-upon standards have been adopted to align and standardize API and PNR requirements. But the industry continues to confront nonaligned, non-standardized implementation by the authorities in various nations.

An industry priority is a continued focus on ensuring that new API and PNR program implementations align with global standards and best practices. A useful tool to increase nations' awareness of API and PNR standards are API-PNR days and targeted workshops delivered in partnership with ICAO, the United Nations (UN), or other interested stakeholders. Some 17 API-PNR days have been held. Additionally, the industry has strengthened the level of expertise available at the regional and local levels to ensure that it is better able to respond to emerging issues and potential challenges on countries' API/PNR implementations in a timely manner.

Foreign terrorist fighters

The adoption in September 2014 of UN Security Council Resolution 2178, which requires that all countries obtain API from airlines to prevent the movement of FTFs via international air transport, continues to represent a significant challenge for the industry. IATA agreed in 2015 to join with the UN Counter Terrorism Executive Directorate, ICAO, the World Customs Organization, and other intergovernmental bodies to deliver a series of five regional API information seminars for countries most at risk for the movement of FTFs and to take part in a series of targeted, in-depth, interagency national evaluations intended to enhance rapidly the countermeasure capabilities of countries deemed particular targets for FTF movements.

In addition, IATA and its airline members will increase their awareness and educational outreach campaign, including hosting regional API-PNR days and workshops targeting individual countries as warranted. IATA will specifically approach nations that feel obligated by the UN resolution to implement passenger data exchange requirements to ensure that any systems imposed align with global standards and internationally adopted best practices.

- 13 nations have implemented mandatory PNR transmission regimes for all or some markets
- 8 nations have legislation in place authorizing PNR data exchange but have not yet implemented that legislation
- 29 nations have indicated interest in developing PNR exchange programs but have yet to announce detailed timeframes or adopt the necessary legislation

Cybersecurity

Aviation is a complex industry with many partners. When it comes to cybersecurity, complexity breeds vulnerability. The industry uses IT solutions to design aircraft, sell tickets, process passengers, roster crews, fuel aircraft, manage flight operations, assign gates, guide air traffic, and even entertain and connect passengers in flight. And that is only a partial list of technology's roles in aviation.

Airlines individually are investing to stay ahead of those who a target them. IATA is securing its systems and developing a three-pronged industry strategy that sees it

- working to understand, define, and assess the threats and risk of cyber-attack and to increase industry awareness of this risk;
- advocating for appropriate regulation; and
- developing mechanisms for increased cooperation throughout the industry and with governments.

IATA continues to partner with the cosignatories of the Civil Aviation Cybersecurity Action Plan: ICAO, Airports Council International (ACI), the Civil Air Navigation Services Organization (CANSO), and the International Coordination Council of Aerospace Industries Associations (ICCAIA). IATA is working with these entities on commitments to ensure that industry stakeholders and governments promote a coherent approach to cybersecurity.

In July 2015, IATA published an updated edition of its *Aviation Cyber Security Toolkit* to assist airlines in understanding and better defining their organizational risks.

Throughout 2016, IATA will continue to promote a threat-based, risk-managed, outcome-focused framework for responding to cybersecurity concerns. That framework takes account of the industry's cybersecurity capabilities.

Smart Security

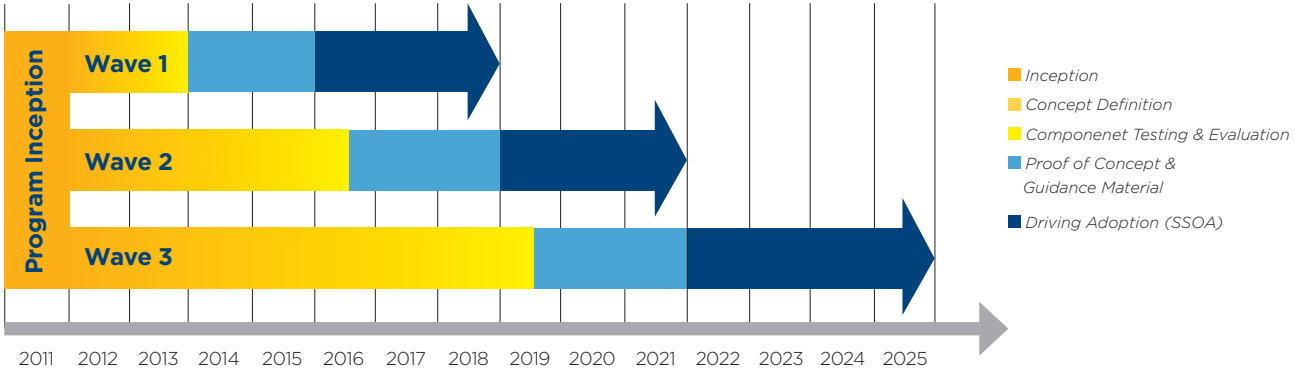
Smart Security is a joint initiative of IATA and ACI that evolved out of IATA's Checkpoint of the Future vision. It aims for a future where passengers proceed through security checkpoints with minimal inconvenience, where security resources are allocated based on risk, and where airport facilities can be optimized, thus contributing to an improved journey from curb to airside.

Today's state-of-the-art security lanes provide improved detection through the use of scanner and multi-view X-ray systems equipped with explosive detection systems (EDS). Security scanners allow for a reduction in full body pat downs, and centralized image processing and innovative lane configurations drive improvements in throughput and asset utilization. All of which betters the passenger experience. The networking of equipment and the ease of information collection that results support the development of sophisticated checkpoint management systems.

Individual components bring improvements, but the greatest benefits come from the integration of specific business objectives, operational considerations, and regulatory requirements. In cooperation with Smart Security partner airports and other government and industry stakeholders, IATA has developed detailed guidance material to bring these benefits to more airports. It has also rolled out the Smart Security Opportunity Assessment (SSOA) program to help airports and screening authorities explore how Smart Security concepts can be applied to their specific context. By the end of 2015, more than 20 airports around the globe had signed up for the SSOA program.

Smart Security has been structured in three waves. The first wave is now in the adoption and implementation stage, and research trials for the second wave are under way. By 2020, it is expected that all of the technology and processes will be available to develop a checkpoint that meets the industry vision. It is now for regulators to embrace these technology and process innovations, including risk-based concepts, and drive the global harmonization of airport security measures.

Smart Security implementation plan



Smarter regulation: **the fair way forward**

Global standards

Global aviation is a complex system of interacting elements, many of which require regulations based on global standards to function optimally. Safety and security regulations in particular must provide clarity and certainty for the aviation industry and its consumers to support efficient business operations. The same is true for aspects of economic regulation.

Regulation that is poorly constructed, ineffectively enforced, or not harmonized globally adds significantly to the cost of doing business and reduces efficiency. Despite a growing body of evidence that overly complex regulations limit choice, competition, and value for consumers, airlines confront increasingly prescriptive regulatory regimes that stifle innovation and competitiveness.

Smarter regulation

To expand the benefits of air connectivity, governments should adopt smarter regulation principles. These principles fall into two categories: design principles, which focus on what smarter regulation should consist of, and process principles, which describe how smarter regulation should be formulated. The process principles include the following:

- **A clear definition of need.** The need for an objective of the regulation should be identified based on sound evidence, and available alternatives should be considered to select the most appropriate solution.
- **An impact assessment.**
- **Transparency**. The drafting of the regulation should involve those who will be potentially affected, and the decision-making process should be open and objective.
- **A reduction of burdens.** The process of developing the regulation should emphasize reducing the compliance burden.
- **An opportunity to respond, review, and revise.** There should be clear procedures for responding to adjudications, for reviewing and appealing judgments, and for revising regulations if necessary.

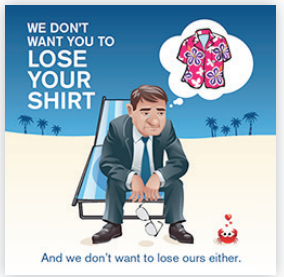
In 2015, the industry aimed to incorporate smarter regulation principles for commercial and operational licensing, environmental market-based measures, air traffic management efficiency, noise concerns, and drones. In 2016, the industry will add government requests for information and facilitation to the list. IATA will also work with regional partners to focus on principles relevant to specific regions.

Passenger rights

Airlines, passengers, and governments have the same goal: safe, reliable, ontime air travel. Increasingly, however, passenger rights regulations are failing to take this shared objective into account. This creates inconvenience for passengers and higher costs for airlines.

Governments should adopt regulations that are consistent with ICAO's policy guidance and IATA's core principles on consumer protection. The ICAO guidance issued in July 2015 is consistent with the IATA principles. And both call for consistency with Montreal Convention 1999 (MC99) on proportionality, the preeminence of safety and security, and the recognition of the responsibility of various stakeholders in cases of massive disruption.

Examples of the Change the Debate posters



More fundamentally, devising regulations should involve the partnership of all participants in the value chain, including airlines, airports, air navigation service providers, governments, and passengers. Regulations built in this way will be more effective than those predicated on the conventional assumption that consumers need to be protected from airlines. This partnership approach changes the debate on consumer protection and is being spearheaded by airlines, using communications materials developed by IATA in 2015 (see poster examples on page 26).

Over 60 nations have some form of passenger rights legislation. In May 2015, Chile issued new passenger rights rules, while the process of revising rules in the European Union and the United States stalled in 2015 and remains so. The development of rules in China and the progress that the Arab Civil Aviation Commission is making in issuing policy guidance to its member nations are being closely monitored by the industry. The National Civil Aviation Agency of Brazil, meanwhile, seeks to revise that nation's regulations on airline conditions of carriage, and this is a priority concern for IATA and its members.

Unruly passengers

The number of reported unruly passenger events continues to increase. Over 38,000 unruly passenger incidents were reported by IATA member airlines between 2007 and 2014. Such incidents disturb other passengers and may disrupt airline operations, endanger airline crew, undermine airline safety, and increase airline costs.

In 2014, the ICAO member nations recognized the limitations of existing international legislation in deterring unruly passengers and agreed to Montreal Protocol 14 (MP14) of the Tokyo Convention. MP14 gives countries legal tools to deal with unruly passengers. Bringing MP14 into force, however, requires its ratification by 22 countries. Airlines are therefore mobilizing governments to ratify the treaty, and IATA has instigated an advocacy campaign to this effect in major markets. In 2015, the number of nations signaling their intention to ratify MP14 reached 29, and Gabon became the second nation to ratify MP14, after the Republic of Congo.

In the meantime, airlines have access to expanded guidance materials to help them prevent and manage unruly behavior. *Guidance on Safe Service of Alcohol*, for example, was published by IATA in 2015 and complements the previously published *Guidance on Unruly Passenger Prevention and Management.*

The aviation industry continues to partner with ICAO on this crucial issue. ICAO and IATA held a joint seminar in April 2016 that looked at a number of outstanding concerns, particularly the need for a multi-stakeholder approach that includes airlines, airports, handlers, and bars and restaurants in preventing incidents before and during flights. It is also important for governments to work with the industry to highlight prohibited behaviors and their consequences.

Montreal Convention 1999 (MC99)

MC99 establishes airline liability in the case of the death, injury, or delay of a passenger and the delay, damage, or loss of baggage and cargo. It is, moreover, a prerequisite for the industry's e-cargo initiatives, such as the e-air waybill and e-freight. MC99 modernizes and unifies the international treaty regimes covering airline liability that have developed haphazardly since 1929. In short, it is designed to be a single, universal treaty to govern airline liability around the world.

In 2015, 11 countries ratified MC99: Azerbaijan, Bolivia, Ivory Coast, Equatorial Guinea, Fiji, Guyana, Honduras, Kazakhstan, the Philippines, Rwanda, and Sierra Leone. This means that 119 of 191 ICAO nations are party to MC99, and advocacy campaigns coordinated by IATA with local stakeholders and partner associations are continuing in the most influential nations that have yet to ratify MC99. Further ratifications are expected in 2016, as Ghana, Indonesia, Russia, Sri Lanka, Thailand, and Vietnam have the process of ratification in hand.

Tax developments in 2015

1 UNITED STATES
At the end of 2015, the Animal Plant Health Inspection Service (APHIS) passenger fee was reduced from $5.00 to $3.96. The APHIS aircraft fee, however, increased from $70.75 to $228.00 for each landing—a significant financial hit for airlines, especially as this fee cannot be passed on to passengers. IATA and Airlines for America have filed a lawsuit to overturn the aircraft fee increase.

2 EUROPE
In Norway, an air transport tax is proposed at NOK80 ($11) per passenger departing on a domestic or international flight. Sweden is also exploring whether to introduce a tax for environmental purposes. Airlines and IATA are engaging with both nations' governments to abandon these moves.

Italy, meanwhile, raised its council tax 36% on average, or approximately €2.50 per passenger, without consultation. There was some good news, however, on the Italian IRESA (noise tax). In February, an amendment opposing the introduction of IRESA in Sicily was adopted by the regional assembly during debates on the 2016 budget. This action came a few weeks after IATA had written to the president of the region to ask him to reconsider the introduction of the noise tax.

In the United Kingdom, the air passenger duty remains the highest passenger departure tax in the world. It was, though, abolished in March 2016 for youths under the age of 16.

3 ECUADOR
The international tourism fee was increased 150% from $20 to $50 in mid-March 2016. This is in addition to the infrastructure tax (also for tourism) of $10 per arriving passenger that was introduced earlier in 2016.

4 INDIA
India plans to introduce a goods and services tax (GST). It is understood that the GST will replace a number of Indian taxes, including the service tax, in late 2016 or early 2017. The industry supports the GST's introduction, provided it aligns with value-added tax best practices. In the meantime, IATA continues to challenge India's service tax, which applies to passenger tickets, fuel surcharges, airport and air navigation service charges, and excess baggage on return flights to India from abroad.

5 NEW ZEALAND
Despite industry efforts strongly protesting the introduction of a border clearance levy for each person arriving and departing New Zealand on international flights, the government began levying a NZ$18.10 arriving passenger tax and NZ$3.37 departing passenger tax as of 1 January 2016.

Airport slots

The lack of airport capacity in an increasing number of congested markets is a major concern for the industry. Constraints on capacity are best alleviated by constructing runways and terminals. It is necessary in the meantime to manage scarce runway capacity through globally coordinated processes, the rules for which are laid down in the *Worldwide Slot Guidelines* (*WSG*).

The *WSG* is the global standard for the policies, principles, and procedures of airport slot management. Adherence to the *WSG* ensures consistent practices and the smooth performance of the system. Conversely, local rules and deviations from the *WSG* can cause disruption to passenger journeys. Deviations nevertheless continue to emerge and must be resolved through strong advocacy. In 2015, progress was made in aligning Indonesia and Colombia with the *WSG*. Constructive engagement continues, meanwhile, in Greece, Hong Kong, Saudi Arabia, and Thailand.

In 2016, IATA will engage with Egypt, Kenya, Malaysia, Morocco, South Africa, Tunisia, Cuba, and Peru regarding slots concerns in those nations.

Latin America

The rapid growth in the Latin American aviation market, despite economic difficulties in key countries, has resulted in infrastructure capacity lagging demand. Brazil, moreover, enacted a regulation that differs significantly from the *WSG* despite industry warnings of the consequences. Other countries in the region, such as Mexico, were considering a slot regulation that likewise differed significantly from the *WSG*. But strong advocacy during 2015 has ensured significant progress in limiting their divergence from the international standard.

United States

IATA responded to the Federal Aviation Administration (FAA)'s Notice of Proposed Rulemaking relating to slots at New York–area airports. The response suggests changes that align the FAA's proposal with the *WSG*.

Asia-Pacific

In 2015, China launched a two-airport trial of slot auctions that the industry is opposing at the highest level. Slot auctions set a worrying precedent within the region.

Relationship with manufacturers

The aviation industry makes substantial revenues, but profits are not shared equitably across the value chain. Airlines have been pushing for fairer airport charges in Europe, for example, for a number of years (see page 33). Another example has been the efforts to ensure that original equipment manufacturers (OEMs) don't abuse their dominant position in the marketplace. Airlines want to be able to negotiate contract terms more effectively and with more options than the OEM community will entertain today. The industry's aim is to help rebalance the relationship so that airlines and OEMs can work together as true business partners in a normal commercial relationship.

In 2015, the European Commission's Directorate General for Competition (DG-COMP) sent questionnaires to several industry stakeholders, including IATA member airlines, requesting information regarding claims of abuses of dominant positions by OEMs with respect to their control of aftermarket repairs, including parts and services. Based on the information received, in March 2016 IATA made a formal complaint to DG-COMP, that involves no claims for monetary damages or any other forms of compensation for past conduct. DG-COMP is expected to review the evidence and decide on whether to proceed with legal action later in 2016.

Taxation

Aviation taxation remains a challenge. Excessive and inconsistent tax regulations affect the ability of air transport to meet demand and impedes economic growth. The industry seeks to work with governments to find appropriate taxation levels that promote aviation connectivity and strengthen government finances by facilitating and expediting economic expansion.

Where existing or new taxes threaten this mutually beneficial balance, the industry looks to convince governments to change course. IATA, for example, provides governments with economic data detailing the overall benefit of aviation, directly and as a facilitator of tourism and trade. This data includes calculations of the real impact of taxation on airline economics, the tourism industry, and national economies.

The concept of smarter regulation includes efforts to harmonize the collection and remittance processes of ticket taxes. Smarter regulation is also important when dealing with corporate income tax and double tax treaties. IATA incorporates the smarter regulation principles into its tax campaigns.

Some countries are moving away from applying income taxes and toward imposing social contribution taxes, claiming that these taxes are not covered under double taxation agreements. IATA continues to promote the *Guidelines for Taxation of International Air Transport Profits* in this regard. The industry will monitor developments and defend ICAO policies in the conviction that such taxes are against the spirit of Article 15 of the Chicago Convention.

Meeting needs: **the right way to build**

Operational and financial improvements

Air transport is a growing industry. According to IATA's 20-year forecast, demand for air transport will double by 2034. The industry, therefore, needs infrastructure developed to meet capacity and quality requirements at competitive costs. Consultation and collaboration among airlines and their infrastructure partners—particularly airports, air navigation service providers (ANSPs), and fuel suppliers—are crucial.

The air transport industry agenda for infrastructure is to

- drive cost efficiency and lower charges at airports,
- align airport capital expenditures (CAPEX) with airline needs,
- improve airport operations,
- reduce ground damage costs by standardizing procedures,
- secure a reliable supply of jet fuel at competitive and transparent prices, and
- advocate for and assist in implementing modernized, efficient air traffic management systems.

Cost-efficiency and lower charges

Dialogue among airlines, policy makers, and infrastructure partners is critical to ensuring that infrastructure charges are fair, justified, and reflective of the value of the services offered to airlines and passengers. ICAO has developed clear guidelines for determining the airport charges imposed on airlines and passengers. The guidelines promote transparency, consultation, efficiency, and productivity in establishing an equitable charges structure.

Experience has shown that effective economic regulation is essential to improving airport cost-efficiency. In 2015, therefore, airlines worked with IATA to counter proposals to lessen the economic regulation of airports and to weaken ICAO's policies on economic regulation. Proposed modifications to ICAO's template for bilateral air services agreements that would have diluted provisions on user charges were also defeated.

The European Commission (EC)'s review of the EU Aviation Package provided an opportunity to campaign successfully, against assumptions that bilateral commercial agreements between airlines and airports are sufficient for setting airport charges.

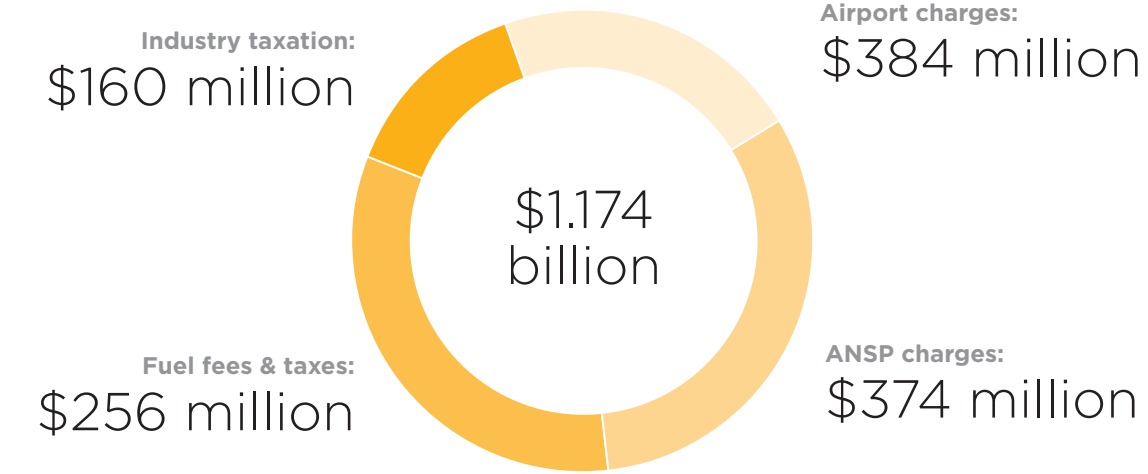
In 2016, airlines will continue to call for more effort by all parties to ensure that ICAO safeguards regarding charges to airlines and passengers are broadly applied. The industry will ask the EC specifically to improve the economic regulation of airports throughout the European Union and to ensure that the European Airport Charges Directive is properly transitioned to national law.

Aligning CAPEX with airline needs

The lack of approved new airport capacity is in some parts of the world an issue of growing concern. The fragmented way airport authorities, governments, and airlines work cannot continue if approval for infrastructure expansion is to be won. At the same time, airport expansion must match airline requirements. Unnecessary capital investment leads to higher costs, which can reduce demand for air travel and weaken the case for investment in required infrastructure. Airline and airport owners and operators must partner in aligning the business plans of the latter with the business needs of the former.

Close airline-airport working relationships do exist. But too often airlines are excluded from airport-related decision making. If necessary, airports should be mandated by regulators to consult with airline experts to ensure that airport expenditures are necessary, functional, and a potential good return on investment.

Total cost reductions achieved in 2015–16



Improving airport operations

Constant and close cooperation is also vital to fostering understanding between airports and airlines of the drivers of effective airport operations. Airlines work with airports to achieve efficient operations, thorough contingency planning and handling, and a repositioning of the airline-airport business relationship to that of customer and supplier.

- **Airport collaborative decision making (A-CDM)**. Well-implemented A-CDM can increase an airport's number of traffic movements and enable a better use of resources during aircraft turnaround. In 2016, the focus will be on ensuring that consistent processes are applied in all A-CDM implementations.
- **Baggage handling.** Developing common capabilities in all IATA members is fundamental to sound baggage handling. Projects for this purpose include tracking as required by IATA Resolution 753, identifying baggage uniquely, and planning the transition to Baggage XML messaging. When completed, these projects will help IATA members significantly reduce costs and raise customer service.
- **Service-level agreements.** IATA is benchmarking airport services to determine key performance metrics. Best practice guidelines are the basis for service-level agreements being concluded at a number of European airports.
- **Emergency response planning.** IATA plans to extend its emergency response planning activities to include identifying the issues for airport business communities, understanding where and how assistance can be given, and sharing industry best practices. IATA and ACI World are considering developing a joint business continuity manual.
- **Airport of the Future.** Everything that IATA does, including its airport development and ground operations initiatives, contributes to the airport of the future. New airport design and construction will optimize airline benefits.

Reducing ground damage costs

Ground damage costs airlines nearly $4 billion a year. Poor handling on the ramp, moreover, poses a danger to health and safety. Because airlines increasingly rely on outsourced ground service providers (GSPs), IATA is working to harmonize ground handling procedures. The intent is to improve operational practices and cost efficiencies in ground handling and heighten safety, quality, and efficiency for all.

The *IATA Ground Operations Manual* (*IGOM*) consolidates international best practice in ground operations procedures. IATA is encouraging airlines and GSPs worldwide to adopt *IGOM* as their minimum standard for ground operations. At the end of 2015, *IGOM* was fully adopted by 22 airlines, with a further 65 airlines in the process of implementation.

The benefits of *IGOM*'s widespread use include preventing accidents and injuries, reducing aircraft damage, improving efficiency, promoting timely performance, and realizing cost savings in ground operations. *IGOM*'s adoption will also help realize the full benefits of the IATA Safety Audit for Ground Operations program.

At the World Cargo Symposium in March 2016, a campaign to reduce instances of damage to Unit Load Devices (ULDs) was launched. The mishandling of ULDs costs the industry upwards of $300 million per year. The campaign, "It's not just a box," aims to raise awareness of the importance of correct ULD handling, with messages relevant to people in the warehouse and the boardroom.

Reliable jet fuel supply at competitive prices

Notwithstanding lower oil prices in 2015, jet fuel continued to account for about 27% of an airline's operating costs. Many airlines do not reap the benefit of lower oil prices because some countries still use posted pricing instead of a pricing formula based on international market quotations. This, and a lack of transparency to go with it, is a particular problem in parts of Africa and the Middle East. IATA has nevertheless had some successes. In Saudi Arabia, estimated savings of $151 million annually have resulted from a long-term campaign to adjust the country's jet fuel pricing formula to reflect international, market-based prices.

An additional issue facing airlines is fuel concession and other fees that have no cost basis. These should be removed. In Colombia, the competition authority's termination of the concessionaire's contract at San Andrés airport because of the concessionaire's extortionate 2,500% increase in the fuel concession fee and abuse of economic power sets a precedent for the removal of other unjustifiably high fuel fees.

The industry continues to remind governments that it is a tenet of the Chicago Convention, of ICAO policies, and of bilateral air service agreements that jet fuel for international flights not be taxed. Campaigns to remove or prevent taxes on jet fuel continue in Austria, Ethiopia, Gabon, and Kenya. IATA is also continuing its advocacy activities in principal markets for the liberalization of fuel services and associated regulation. In 2015, IATA advised the Mexican government of the impact of its energy reform on the country's jet fuel industry and assisted with the development of a regulatory framework for the sector.

Another of IATA's aims is to work with partners to improve the safety, quality assurance, and auditing efficiency for aviation fuel. IATA is cooperating with the oil industry's Joint Inspection Group and the IATA Fuel Quality Pool to develop a common industry fueling standard.

Fair airport charges and appropriate development

Airport development requirements should be agreed on by all parties based on a robust, transparent cost-benefit model that is in line with expected demand. Where airport privatization is being considered, early consultation, including decisions on investment, cost allocation, and charge setting, is needed among all parties to avoid unfair concession agreements, which would stifle efficient industry growth.

1 AMERICAS

Industry efforts saw **Colombia's** international departure fee reduced by $54 a passenger.

IATA is working with the project teams for **Mexico City's** new airport to make sure that airline input and airport operational parameters are aligned and incorporated in the new airport's development strategy. IATA is also sharing expertise with security and immigration departments in the government. The Mexican authorities are being encouraged to realign and modernize their processes with global best practice by adopting and incorporating IATA Fast Travel, Passenger Facilitation, and Smart Security processes into the design of the new airport.

2 EUROPE

Amid industry pressure, **Amsterdam Airport Schiphol** reduced its airport charges an average of 12% for 2016–2017, which will save $105 million. Charges reductions at **Spanish airports** were also secured and will save $48 million in 2016–2017. A successful appeal against a **Brussels Airport** charges proposal will save $28 million in 2016–2019.

Airlines broadly welcomed the UK Airports Commission's recommendation to expand **London Heathrow** and thereby alleviate capacity issues in Southeast England. However, there are concerns over the commission's prefunding proposals and prescriptive approach to environmental mitigation measures.

3 AFRICA

A decision on the **Airports Company of South Africa** (ACSA)'s airport charges for 2015–2020 urgently needs to be made. The airline community expects the regulator's recommendation of a reduction to be upheld.

4 MIDDLE EAST

IATA is working with its members to shape proposals for new economic regulation models in **Oman** and **Sudan**. The aim is to ensure that the airline perspective appears in provisions for airport and air navigation charges.

5 ASIA

Airlines welcomed the Indian government's reported decision not to privatize four major Indian airports after it was challenged on inadequate justification for those airports' high charges. At Delhi's **Indira Ghandi International Airport**, IATA is continuing its legal challenge of airport charges. Furthermore, on behalf of the airline community, IATA supported a peer review of the Delhi airport's master plan. The airport authority has agreed to review the master plan every five years in accordance with international best practice.

In 2015, a decision was made to build a third runway at **Hong Kong International Airport** (HKIA). Completion is targeted in 2023. Airlines welcome the decision but, to avoid a capacity crunch, are still pushing for reforms to HKIA's movement cap of 68 aircraft an hour.

IATA, meanwhile, secured reductions and ongoing rebates at **Singapore Changi Airport** worth $102 million in 2015–2016.

Regular dialogue is taking place with the **Beijing New International Airport** (BNIA) project team through IATA-led Airport Consultative Committee meetings. This enables the international airline community to review BNIA's plans and to provide input into the design and development processes for this $12.9 billion project. BNIA's willingness to engage with the international airline community is encouraging. Improvements have already been made to BNIA's user functionality.

Modernized air traffic management systems

The global vision for air traffic management (ATM) is for a harmonized, cost-efficient, and interoperable ATM system. Airlines and ANSPs need to work together if this vision is to be achieved. A number of ambitious regional projects are in place to address capacity restraints and the lack of efficiency, but political commitment to the success of these projects is essential. There also remain many examples where ANSP charges are too high.

1 UNITED STATES: NEXTGEN

The US Federal Aviation Administration (FAA)'s troubled NextGen modernization program is a decade behind schedule and will cost two to three times more than the initial estimated $40 billion in public-private investment, according to a recent US government report. Part of the problem is that the FAA and NextGen are subject to the vagaries and shifting priorities of the annual federal budgeting process.

Given the importance of the US market, a modernized and efficient ATM system is vital to the growth of global commercial aviation. For that reason, IATA and other stakeholders support a legislative proposal to modernize the system by establishing an independent, corporatized nonprofit entity to perform air traffic services. It appears unlikely, however, that this will succeed, owing to insufficient support in the US Senate. But there are grounds for optimism in the broad coalition of stakeholders supporting the initiative.

2 EUROPE: SINGLE EUROPEAN SKY

Development of the Single European Sky (SES) remains stalled despite over a decade of work. The Single European Sky ATM Research (SESAR) joint undertaking is proceeding with plans to spend up to €26 billion developing and deploying technology and procedures. But airlines argue that implementing systems without accompanying airspace reforms will not produce the cost-efficiency, environmental, safety, and capacity improvements envisaged. Needed reforms, including the amalgamation of European airspace into functional airspace blocs to promote greater efficiency, have been only partially implemented because of a lack of political direction.

To reinvigorate airspace modernization, in 2015 IATA commissioned a report from SEO Amsterdam to look into the economic benefits to Europe from the successful delivery of the SES goals in 2035. The report concluded that Europe stands to gain €245 billion in economic benefits, including a million extra jobs. Throughout 2016 and beyond, IATA will be working to build a coalition of European stakeholders to promote the report's main messages in an effort to encourage governments to push for genuine ATM reform and modernization.

3 MIDDLE EAST AND NORTH AFRICA

The Middle East is a strategic location with significant volumes of transiting air traffic. The challenge is to increase the overall efficiency of the region's ATM system through improved airspace design and organization. Solutions must take into account projected regional traffic flows and not just national interests.

Technology and processes and institutional arrangements can achieve a great deal. IATA, airlines, and other industry partners are working with ICAO in helping the Middle East evaluate enablers of air traffic flow management (ATFM) and collaborative decision making. ATM modernization and the implementation of operational concepts that support airspace optimization and availability, such as flexible-use airspace, harmonized en route performance-based navigation, and standardized en route aircraft separation, are also vital.

Developments in ATM and airspace capacity alone, though, are not enough. Harmonization, integration, and collaboration among aviation stakeholders are essential to realize the potential of national projects.

4 CHINA

Operations in China remain a notable challenge. On-time performance on air routes in China fell in 2015; only about 67% of flights arrived on time. This is a 10 percentage point deterioration in just five years.

China is investing in new technology, but the country needs to use it flexibly and with the support of the military. A good example of this is in ATFM. China's domestic ATFM system is maturing, but the key is international cooperation. The industry is encouraged that the reports of two cross-jurisdictional ATFM trials—in Southeast and East Asia—are positive.

Another positive development is the establishment of an operational liaison mechanism linking China's Air Traffic Management Bureau with airline operation control centers. This will help airlines to manage delays and extraordinary situations. Longer term, it should contribute strategically to the development of efficient operations in China.

Environmental commitments: **reducing impact**

Environment

Aviation has an environmental impact. Flights generate noise and air pollution, including greenhouse gas emissions.

Airlines, though, are united in their determination to manage and reduce their impact on the environment in partnership with airports, air navigation service providers (ANSPs), and aircraft manufacturers. Tackling carbon (CO_2) emissions is at the top of the agenda, and the industry has a well-established strategy and globally agreed to targets to that end. Noise is addressed through the ICAO Balanced Approach. To deal with more general environmental issues, airlines are working together to establish and share best practices, including the use of environmental management systems and environmental assessments.

Carbon emission reductions

The industry is working hard to decouple the growth in traffic from the growth in emissions that results. Aviation's license to grow depends on achieving long-term sustainability.

In 2009, the aviation industry committed to three emission-reducing goals:

1. Improving fuel efficiency an average of 1.5% annually to 2020
2. Capping net emissions through carbon-neutral growth from 2020 (CNG2020)
3. Cutting net emissions in half by 2050, compared with 2005

Such ambitious goals place aviation in the forefront of industries globally in managing its impact on climate change. Through ICAO, moreover, governments worldwide are aligned with the industry's CNG2020 vision. This is important because the challenges of achieving the second and third goals are so significant that they cannot be overcome by the industry alone.

To achieve its three carbon-emission goals, the industry has adopted a four-pillar strategy comprising technology, operations, infrastructure, and market-based economic measures. Continued investment in new aircraft and innovative efficiency improvements are helping the industry meet its yearly 1.5% fuel-efficiency goal. In the 2015–2016 period, significant progress occurred, particularly in formalizing technological efficiency gains through a CO_2 standard for aircraft and in negotiations to deploy a global market-based measure (MBM) for addressing CO_2 emissions.

Aircraft CO_2 standard

In February 2016, governments took an important step in agreeing, through ICAO, on a CO_2 efficiency standard for commercial aircraft. The standard is the result of six years of technical work by ICAO's Committee on Aviation Environmental Protection. Following the standard's approval by the ICAO Council, it will apply from 2020 and ensure that CO_2 emissions from new aircraft types do not exceed a limit defined as a maximum fuel burn per flight kilometer depending on the size and weight of the aircraft. Between 2023 and 2028, this standard will also be applied gradually to aircraft designs that are already in production.

The aviation industry's three emissions reduction goals

1
Improving fuel efficiency an average of 1.5% annually to 2020

2
Capping net emissions through carbon-neutral growth from 2020 (CNG2020)

3
Cutting net carbon emissions in half by 2050, compared with 2005

Global market-based measure

The 39th ICAO Assembly in September 2016 may mark a milestone in industry efforts to commit governments to agree to the implementation of a market-based measure (MBM). A proposal for a Carbon Offsetting and Reduction Scheme for International Aviation (CORSIA) has been developed by governments through ICAO and is supported by the industry. It must, however, be adopted by the assembly, which comprises ICAO's 191 member states, if it is to come into force.

The development of the CORSIA proposal has been a considerable technical and political challenge. In addition to the involvement of national governments, CORSIA's development included intensive negotiations with and technical input from the aviation industry. It is the view of the industry that a global carbon offsetting scheme represents the most effective and practical means to implement an MBM in time to meet the CNG2020 goal. The aviation industry, including IATA and the Air Transport Action Group, is engaged in explaining the merits of the proposal to national governments and regional governmental organizations.

The aviation industry's priorities are to ensure that CORSIA is built on the principles of transparency, nondiscrimination, and cost-effectiveness. CORSIA must also provide for an equitable distribution of emission-reduction obligations between countries and operators. Other important issues—such as monitoring, reporting, and verification requirements and the types of carbon offset units that can be used for compliance purposes—also need to be addressed.

Sustainable alternative fuels deployment

The use of sustainable aviation fuels (SAF), especially biofuels, is crucial to the industry's technological progress. SAF emit CO_2 but have the potential over their life cycle to save up to 80% in CO_2 emissions.

Aviation's fuel distribution system, meanwhile, enjoys advantages over other transport sectors' fuel distribution methods. That system's delivery of biofuels to just 190 airports worldwide would cover potentially 80% of all flights.

There were a number of important developments in SAF deployment in 2015–2016:

- United Airlines became the first US operator to launch scheduled commercial biofuel-powered flights out of Los Angeles International Airport.
- In April 2016, KLM took advantage of Oslo airport's new hydrant biofuel supply system to launch 80 commercial biofuel flights on its Cityhopper service.
- Air New Zealand and Virgin Australia commenced a partnership to find opportunities for locally sourced biofuel.
- Boeing launched a sustainable fuels research and development project with Aeromexico and the Mexican government. Boeing also announced a partnership with Japanese aviation stakeholders to develop a roadmap for biofuel flights for the 2020 Tokyo Olympic Games.
- The first IATA Alternative Fuel Symposium (AFS) was held alongside the IATA Aviation Fuel Forum in Mexico in November 2015. It brought together airline customers and alternative fuel suppliers to discuss opportunities to remove barriers to SAF deployment. The second AFS will take place in Vietnam in November 2016.

Airline fuel reporting

The airline industry must demonstrate to governments and other stakeholders that it is achieving its target of a 1.5% annual improvement in fuel efficiency. To this end, IATA member airlines continue to report on their fuel consumption through the Fuel Reporting & Emissions Database (FRED), which was launched in February 2013. FRED has a 94.2% reporting rate among its 207 airline participants. The database allows airlines and IATA to provide credible, de-identified CO_2 information to governments and other external stakeholders in support of IATA's advocacy efforts. FRED is continually enhanced to improve data quality.

A balanced approach to noise

The development in 2013 of ICAO's noise certification standard for aircraft marked another stage in the ongoing process that has reduced aircraft noise some 80% in recent decades. Concerns about aircraft noise are nevertheless prominent worldwide.

In April 2014, the European Union (EU) adopted a regulation to improve the management of noise at European airports. That regulation enters into force in 2016 and requires authorities to implement ICAO's Balanced Approach to Aircraft Noise Management, which includes such procedural steps as consulting with stakeholders and assessing noise-mitigation measures. The EU is also reviewing its Environmental Noise Directive (END). While END is not specific to air transport, its revision could have important ramifications for aviation, in particular by introducing noise limits throughout Europe. These limits could prohibit the operation of certain aircraft or introduce caps on aviation activities in specific parts of Europe.

A noteworthy positive development on noise restrictions occurred in September in Colombia. Nighttime restrictions were lifted at El Dorado International Airport in Bogota.

Regulatory and benchmarking developments

The industry's advocacy efforts in 2015 contributed to a number of positive outcomes, notably in Canada, where the imposition of potable water requirements on foreign operators was limited. In Europe, industry efforts are focusing on a smarter regulation approach to the Energy Efficiency Directive, which, as formulated, will require considerable duplication of audits and reporting of energy use by airlines.

The IATA Environmental Assessment (IEnvA) program was developed to benchmark environmental performance and the spread of environmental best practices. Airline participation in this voluntary program continues to grow. Eleven airlines have achieved certification as IEnvA Stage 1 Operators: Air India, Air Transat, Finnair, Icelandair, Kenya Airways, LAN, LAN Cargo, Malaysia Airlines, Qatar Airways, South African Airways, and SriLankan Airlines. Air New Zealand commenced Stage 1 implementation in August 2015, and IATA is holding discussions with a number of other airlines interested in joining Stage 1.

Three partner airlines, Finnair, LATAM, and South African Airways, have achieved certification as IEnvA Stage 2 Operators. This, the highest-level IEnvA assessment, declares that an airline has implemented all IEnvA standards, identified and mitigated its significant environmental impacts, and set performance targets. Icelandair and Qatar Airways have begun the Stage 2 process.

In December 2015, IATA received confirmation from SGS, a leading international certification company, that IEnvA is compatible with the international Environmental Management System (EMS) standard ISO 14001:2004. In addition, an IEnvA general training program has been developed, and IATA is working with an online training provider to develop an IEnvA internal assessor course.

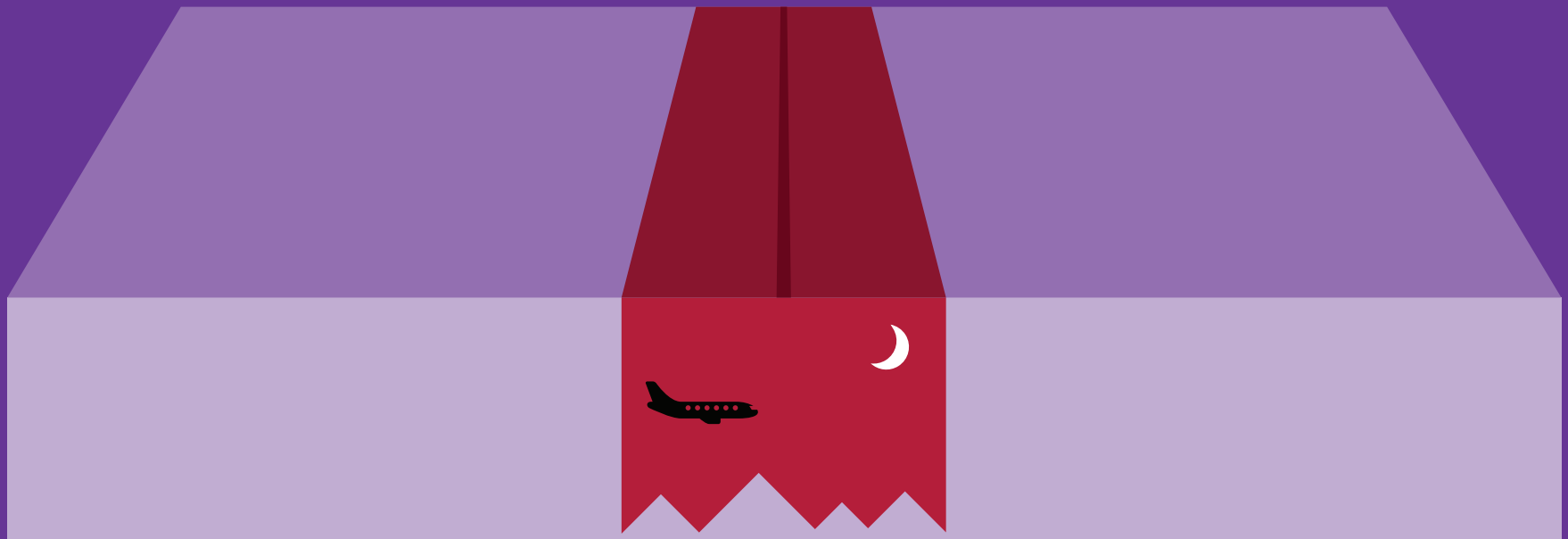
The IATA Environmental Assessment

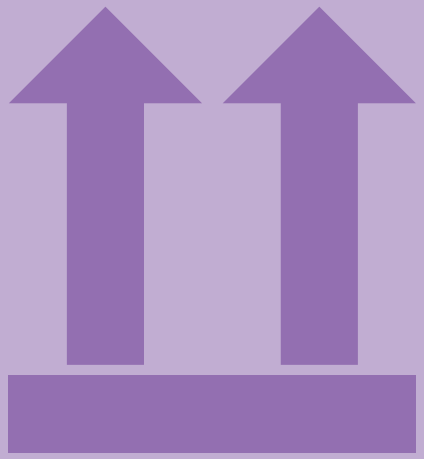
Endangered wildlife carriage

Airlines have focused over the past year on supporting initiatives related to preventing the illegal trade in protected wildlife and associated products. Although the responsibility for enforcing the rules governing the international wildlife trade is clearly with governments, airline staff can be an invaluable source of information on suspicious passenger behavior and unusual shipments. Activities that the industry has undertaken in support of initiatives to protect wildlife include the following:

- Signing a memorandum of understanding with the Convention on International Trade in Endangered Species (CITES) of Wild Fauna and Flora to cooperate on reducing the illegal trade in wildlife and associated products and ensuring the safe and secure transport of legally traded wildlife.
- Supporting the US Agency for International Development's Reducing Opportunities for Unlawful Transport of Endangered Species (ROUTES) program in developing standards and training to enable airline personnel to recognize and report efforts to transport endangered wildlife
- Holding two training workshops provided by the Freeland Foundation—in August 2015 in Nairobi in association with Kenya Airways and in February 2016 in Bangkok—that focused on providing airline and airport staff with the skills and knowledge to identify and report illegal trafficking in wildlife.
- Participating in the Duke of Cambridge's United for Wildlife Transport Task Force, which aims to identify ways the transport sector can break the chain between suppliers and consumers of illegal wildlife products.

In March 2016, IATA and a number of carriers signed a declaration of 11 commitments aimed at identifying ways in which commercial airlines can prevent the trafficking of protected species.





Faster processes: **faster delivery**

Cargo

Air cargo is a crucial enabler of the global economy. In 2015, freight tonne kilometers expanded 2.3%, and airlines transported 51.5 million metric tons of goods valued at nearly $6 trillion.

Although air cargo continues to carry more goods than ever before, the industry is under pressure amid falling yields. Revenues from air freight have declined from a high of almost $67 billion in 2011 to $52.8 billion in 2015. The load factor has fallen because the continued expansion of the long-haul passenger fleet has increased belly-hold capacity. Additionally, the industry is witnessing a shift of some goods to ocean freight and integrators.

To compete, the air cargo industry must undergo a transformation similar to the one happening in the passenger airline business. Passenger airlines have over the course of a decade been underpinning their operations with processes that improve efficiency and give passengers enhanced control of their journeys. Air cargo needs a parallel process to reduce costs and heighten customer service.

Achieving industry change is a collaborative process requiring all partners in the air cargo value chain to work together. During 2015, the Global Air Cargo Advisory Group (GACAG), which comprises the principal global representative organizations of airlines, freight forwarders, and shippers, continued its work emphasizing security, e-commerce, facilitation, and sustainability.

IATA, meanwhile, is working to reform its Air Cargo Program in cooperation with the freight forwarder community. Freight forwarders today act as principals for more than 80% of air cargo transactions and can no longer be seen merely as the agents of airlines. It is important that the Air Cargo Program reflects this business reality.

The program proposes a simplified governance structure, with diverse local and regional governing bodies; clearer roles and a reinforced bottom-up consultation process; the establishment of a joint board to facilitate the achievement of key industry goals, including e-cargo priorities; and reduced risks of liability and legal challenge by addressing the principal-to-principal relationship between freight forwarders and airlines.

Many of the new aspects of the program have been jointly worked out with FIATA (the representative body for international freight forwarders), but a few issues remain. IATA and its members have decided to implement some of the agreed-upon elements. Work, meanwhile, continues on developing a jointly managed IATA/FIATA Air Cargo Program.

Progress in 2015

Throughout 2015, other key industry programs likewise continued evolving. In partnership with shippers, freight forwarders, and the entire air cargo value chain, the industry agenda focused on the following:

- Replacing paper and analogue processes with digital data transfer through the implementation of e-freight
- Working for a safer industry, particularly dealing with the issue of lithium-ion batteries
- Ensuring a secure supply chain to minimize security-related delays
- Measuring the performance of the end-to-end air cargo chain through quality management and benchmarking
- Developing a global facilities matrix and validation certification program to benchmark air cargo infrastructure and raise standards with cold chain shipments

E-freight implementation

The e-freight program will modernize air cargo processes with digitized standard documents adapted for electronic commerce. This will promote efficiencies and enhance security, eliminating the need for multiple data entry, reducing errors, and enabling advance data transmission to the authorities.

The air cargo industry is focused on replacing the paper air waybill with an electronic air waybill (e-AWB) as a step toward digitizing the entire pouch of up to 30 documents. Although e-AWB penetration in 2015 increased by more than 11 percentage points, to reach 36.4%, progress is still slower than expected. It is proving difficult for e-AWB use to expand outside the leading cargo hubs and trade lanes. Consequently, IATA has introduced e-AWB 360, which is an airport community-based approach to e-AWB implementation that aligns carriers, forwarders, and ground handlers around a common industry standard operating procedure and implementation plan.

The rollout of e-AWB 360 will be supplemented with a renewed push for countries such as Russia to ratify Montreal Convention 1999 (MC99). Digital data transfer—the cornerstone of the e-AWB—is not permitted in countries that have not signed MC99. Further industry collaboration will also be required to help implement common e-AWB procedures.

Quality management and benchmarking

Cargo 2000 (C2K) is a quality management system that was developed to assist airlines and freight forwarders monitor and benchmark delivery performance against their service promise, define common processes and procedures, and promote best practices. The C2K Master Operating Plan is an open resource free for airlines to adopt.

In early 2016, C2K was rebranded Cargo IQ. The announcement of that change included the introduction of programs dealing with smart data and audit certification. Moreover, 5 additional users of Cargo IQ have expanded the user total to 82.

Facilities matrix development

Shippers need to be confident that their goods will be carried safely, reliably, and consistently. To improve the transparency of freight handling operations across the cargo chain, a facilities capabilities matrix (FCM) was developed and tested in 2015. The FCM Checklist is a list of capabilities against which a cargo facility can be measured. Benefits of the FCM include the identification of best-in-class handling facilities and of facilities in potential noncompliance in such critical areas as safety and security.

In 2016, the air cargo industry will further embed the FCM as common practice by coordinating test projects between airlines and ground handlers, by drafting FCM recommended practices, and by incorporating FCM practices into a revision of the *IATA Cargo Handling Manual* slated for publication late in the year. Other plans include developing an independent FCM validation program and appropriate tools to communicate FCM results and collaborating with airport operations in planning cargo warehouse facilities.

Pharmaceutical logistics

The pharmaceutical sector relies on air transport for the delivery of temperature-sensitive goods. A single mistake along the cargo supply chain can destroy an entire batch of medicines or vaccines. Yet the increasing number of incompatible cold chain regulations around the world is making it ever more difficult to manage the assured, temperature-appropriate transport of pharmaceuticals.

IATA's Center of Excellence for Independent Validators in Pharmaceutical Logistics (CEIV Pharma) aims to address issues related to pharmaceutical transport. CEIV Pharma offers a standardized, global certification program that trains people to handle and to conduct consistent, on-site assessments of the handling of pharmaceuticals for transport.

CEIV Pharma is operated in partnership with industry stakeholders worldwide. As such, it delivers a single, internationally recognized standard and harmonizes and simplifies the number of audits. CEIV Pharma improves compliance with standards and regulations by assessing operations against a standard checklist and trains independent validators in applying those standards and regulations.

Since its launch, CEIV Pharma has attracted increasing interest from cold chain logistics businesses and locations. Some 29 such entities were registered as CEIV certified as of March 2016, with 58 more undergoing the certification process. Of particular note is the development of CEIV Pharma airport communities, where a number of neighboring stakeholders are CEIV certified. The first, at Brussels Airport, has been followed by communities at Liege, Madrid, Barcelona, Miami, Singapore, and Amsterdam airports.

Tailor-made: **the journey of the future**

Passenger experience

IATA's 20-year forecast states that air passenger numbers will double to seven billion annually by 2034. This phenomenal growth in traffic is straining airport infrastructure. At the same time, passengers are demanding more personalized self-service options that take advantage of the latest technology.

Part of the answer to strained airport infrastructure and heightened passenger demands is to ensure that each passenger touch point in the air travel experience is as seamless, as hassle free, and as efficient as possible. Since 2004, IATA's Simplifying the Business (StB) program has focused on innovative solutions to do just that. StB facilitates global standards and builds on technological change to transform the customer journey.

Such transformational change is only achievable through strong partnerships. The StB program has brought together stakeholders from across the industry to revolutionize business practices and processes, enhance the passenger experience, and deliver value. StB is focused on

- eliminating or optimizing processes and related wait times throughout the passenger journey;
- providing customers with trusted, accurate, real-time information during their journeys; and
- empowering airline retailing and merchandizing.

Fast Travel

The industry's vision is a revamped airport experience that harmonizes fragmented steps into a single, integrated process. Passengers should be able to walk from the airport entrance to their airplane seat with minimal inconvenience.

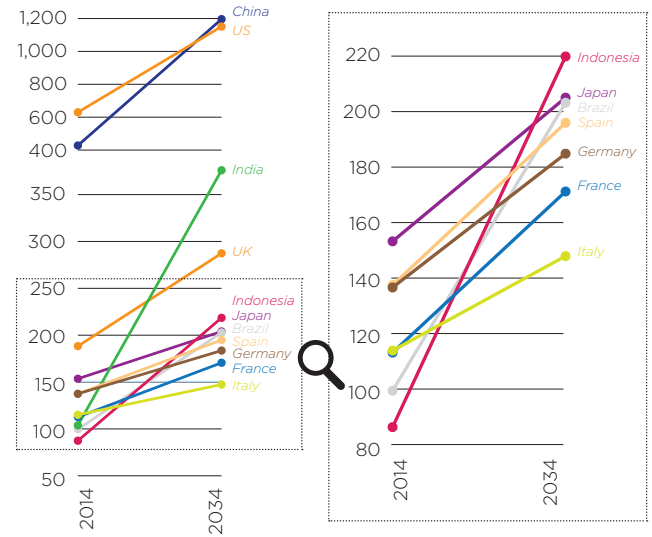
The StB Fast Travel program brings this vision closer to reality. The implementation of Fast Travel solutions gives passengers more control over their journey and a more seamless travel experience. The suite of six Fast Travel elements comprises self-, or automated, check-in; self-tagging of baggage; self-checking of documentation; self-rebooking of flights; self-boarding; and self-recovery of bags.

The target is to offer at least 80% of passengers Fast Travel–compliant procedures by 2020. In 2015, 29% of travelers had access to the Fast Travel experience. For year-end 2016, the industry is targeting Fast Travel access for 40% of passengers, which will require a significant acceleration in Fast Travel implementation from previous years.

Fast Travel services are common practice in many parts of the world but lacking elsewhere. The main obstacles to their ubiquity are regulatory. Such modern technology as mobile boarding passes, for example, is accepted in some countries but not in others. Another notable regulatory issue is the delay in approving self-printed baggage tags for departures from the European Union. The airline industry is engaging with regulators around the world for the use of next-generation technology to offer passengers a smooth and trouble-free travel experience.

Twenty-year forecast reveals air passenger numbers set to double

Top 10 passenger markets 2014-2034



Million O-D passenger journeys (to, from, and within)

(Source: IATA 20 year passenger forecast*)*

Automated border control

Automated border control (ABC) continues to be embraced by the aviation industry and passengers. By year-end 2015, 60 governments had implemented ABC at 179 airports. IATA's *Global Passenger Survey* revealed that 48% of passengers have used ABC with 89% satisfaction.

ABC is expected to play an increasingly significant role in the delivery of modern, effective, and efficient border operations. This is especially so as passenger numbers rise and as passenger demands for self-service and delay-free security processes grows.

InBag

Baggage processes must be more efficient and less problematic for passengers, airports, and airlines. To that end, IATA has developed the InBag program to achieve three key goals: the reduction of the worldwide mishandling of bags, from 1% to 0.5%; innovation enablement; and improved efficiency in the five key processes of check-in, security, manual handling, arrivals, and transfers.

The InBag program has made progress in all respects. IATA is committed to continuing to work with the industry to enhance passenger convenience and to reduce costs and improve efficiency for all stakeholders.

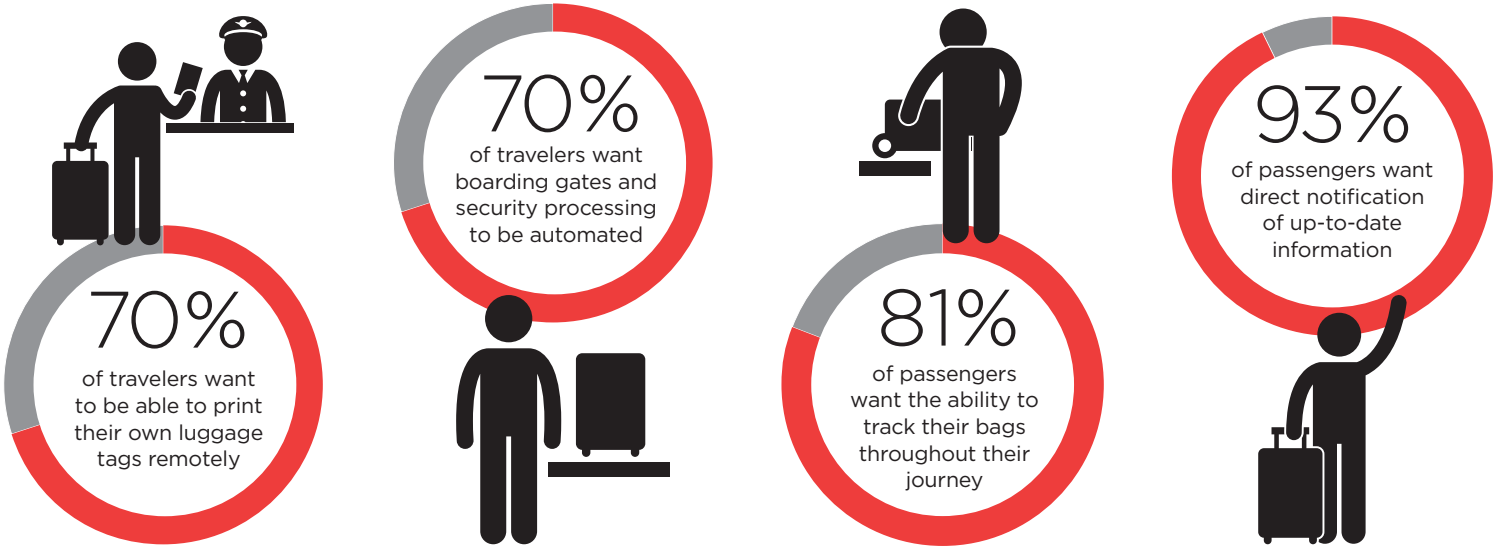
Real-time interaction

Flight cancellations, delays, and gate changes occur daily in airports worldwide, and travelers want to be kept informed. The latest IATA *Global Passenger Survey* shows that 93% of passengers want to be directly notified on flight and baggage status, visa and customs requirements, and security or border control wait times. The real-time capability of today's technology offers the possibility for this to be achieved, but implementation is no easy task.

IATA's Customer Contact Information project, however, aims to enable airlines to communicate with customers anytime, anywhere. The project seeks to provide airlines with the ability to obtain passenger contact details from the passenger name record (PNR) by developing standards and recommended practices for contact information.

Passenger survey

IATA's *Global Passenger Survey* clearly shows that travelers want more self-service options.



New Distribution Capability

Meeting the demand for air travel and satisfying customers' expectations will require an overhaul of the shopping experience. Airlines continue to innovate with bundled and unbundled products and with ancillary items and services. But passengers need to be able to shop and compare the value of these propositions across airlines, just as when shopping for other consumer goods.

The New Distribution Capability (NDC) is intended to grant passengers this ability through the development of a modern, Internet-based data standard for communications between airlines and travel agents. Air travelers will benefit from greater transparency and access to airlines' offerings when shopping through a travel agent or online travel site, which is not the situation today. And airlines will be able to move beyond the mostly commoditized displays of fares and schedules in the travel agent channel to present their products in a more attractive and competitive manner.

On 1 September 2015, the first official NDC standard (PADIS 15.2) was published and approved by the IATA membership. This was followed in October by the first IATA NDC "hackathon," in which close to 100 programmers were given the opportunity to develop travel apps using the NDC standard. The hackathon is a great illustration of how modernizing communication protocols between airlines and travel agents is creating opportunities for programmers to build innovative solutions around the NDC standard, bringing new tools and solutions to the air traveler end user.

Travel agents are crucial to the adoption of the NDC, so IATA has teamed with seven travel agent associations globally to study how agents view the NDC's opportunities and challenges. A key finding is that the NDC could be an enabler of success for travel agents, as it makes them more competitive with airline websites and more customer focused. But agents want to know more about the NDC.

Corporate travel buyers are another important NDC stakeholder group. A recent study of corporate travel buyer attitudes commissioned by IATA shows that they recognize the opportunity the NDC standard offers but that they, too, seek further information about the NDC and its implications for their business. The Travel Manager Advisory Group, comprising 10 European corporate buyers, has been founded to ensure that IATA and corporate travel buyers continue to discuss the NDC and related issues affecting corporate airline programs.

To support airlines in adopting the NDC, a *Change Readiness Guide* and an *Implementation Guide* have been produced.

NDC-related activities for 2016 include

- monitoring and improving the performance of the NDC standard. As IATA receives feedback from early NDC deployments, it is incorporating changes to NDC schemas to ensure that they meet market expectations for scalability, security, and ease of use and implementation.
- introducing the NDC Certification program. IATA will operate the only certification program for the NDC. This will ensure transparency and credibility for all who implement the NDC standard and who wish to connect with new partners using that standard.
- helping the business travel community prepare for the arrival of the NDC standard and take advantage of the benefits of NDC implementation by airlines and travel agents. To support these efforts, IATA has launched ndcbiztravel.iata.org, a microsite of tools and information relevant to business travel agents, self-booking tool providers, and corporate travel buyers.
- continuing the outreach to the travel agent community. Great progress has been made with travel agent engagement, but there is still a lot more to do. IATA will seek to build on its survey of close to 1,000 travel agents and to work with airlines and agents who have deployed the NDC to understand better their challenges and opportunities and to share best practices with them.

To date, IATA has conducted trial runs of the NDC with 24 airlines on five continents, and 15 of the world's top 20 airline groups, by revenue, have either deployed components of the NDC standard or plan to do so during 2016–2017. A significant number of NDC deployments are expected to be initiated by airlines globally in 2016 in partnership with travel technology and travel agency partners.

IATA will continue to support airlines in their deployment of the NDC by producing marketing material and tools to help them understand and engage in the NDC. It is also committed to helping airlines find NDC partners across the value chain.

Settlement systems: **the financial backbone of the industry**

An integrated global system

Global standards and systems that ensure the swift, secure, and reliable movement of funds among the participants in the air travel value chain are a vital and often unnoticed component of the global aviation system. IATA Settlement Systems (ISS) have been the back office of the global air transport system for six decades.

$230.3 billion

IATA's **Billing and Settlement Plan** (BSP) facilitates and simplifies the selling, reporting, and remittance procedures of IATA-accredited passenger sales agents and improves financial control and cash flow for IATA's roughly 400 participating airlines. At the close of 2015, there were BSPs in 180 countries and territories. The BSP proccessed $230.3 billion with an on-time settlement rate of 99.999%.

$33.7 billion

IATA Currency Clearance Services (ICCS) offers global cash management that enables airline treasurers centrally to control and repatriate their worldwide sales funds. The ICCS is used by more than 320 airlines and was responsible in 2015 for repatriating $217 million from countries with severe restrictions on currency repatriation. Notwithstanding this success, $4.88 billion, an increase of 21% over 2014, was held back by various nations. The number of countries reported to have blocked funds in 2015 rose to 13 from 12. Ghana, Iran, Morocco, and Ukraine were removed from the list in 2015. But Eritrea, Ethiopia, Mozambique, Nigeria, and South Sudan were added. Overall, the ICCS processed $33.7 billion.

$70.0 billion

In 2015, **Simplified Invoicing and Settlement** (SIS) had more than 1,800 participants and processed 1.48 million interline and supplier invoices totaling $70 billion. SIS transactions included $54.3 billion from the **IATA Clearing House** (ICH). The ICH provides fast, secure, and cost-effective settlement services to more than 415 airline, airline-associated company, and airline travel partner participants. In 2015, the new ICH launched by IATA had a settlement success rate of 99.99999%.

SIS processed a further $3.7 billion through IATA's **Enhancement & Financing** (E&F) system. E&F helps air navigation service providers (ANSPs) and airports improve the efficiency and quality of their invoicing and collection processes.

$28.8 billion

IATA's **Cargo Account Settlement System** (CASS) is designed to simplify the billing and settling of accounts between airlines and freight forwarders. It operates through CASS link, an advanced, global, web-enabled e-billing solution. At the end of 2015, CASS was processing 95 operations serving over 500 airlines, general sales and service agents (GSSAs), and ground handling companies. The on-time settlement rate for CASS was 99.998%, and $28.8 billion was processed.

ISS

IATA devotes constant effort to improving the IATA Settlement Systems, particularly its most critical elements, the BSP and CASS, to serve its members better. Improved ISS achieved the following in 2015:

- Safer funds, with unrecovered debt of 0.021%
- Higher average rate of on-time funds, at 99.998%
- Lower operating unit fees, to 43% below the 2010 actuals

In the interest of furthering this performance, IATA has initiated a review of ISS targets, with new targets slated for application from 2017 through 2023. The aim for 2016, meanwhile, is to keep the net default rate on gross sales at or below 0.025% and the on-time settlement rate at 99.980% or higher.

Quality is central to all that IATA does. Having obtained ISO 9001 certification for the quality management system at head office and elsewhere, IATA will strive in 2016 to obtain similar global quality certification for the ISS. Updated systems are instrumental to that effort.

NewGen ISS

IATA established the rules for the BSP decades ago. That one-size-fits-all approach to global standards fails to address today's increasingly diverse and complex needs and risks of airlines and travel agents. BSP rules, for example, partially mitigate the financial consequences of agency defaults but have no provision to prevent this risk.

New-Generation ISS (NewGen ISS) aims to bring the BSP settlement system into the modern world. It delivers simplified processes, lower costs, increased funds protection, new payment methods, and a choice of agent accreditation models.

NewGen ISS's principal initiatives include

- **agency accreditation models** that better fit agents' needs and have bespoke rules;
- **safer selling**, enabling agents to sell via alternative forms of payment up to and beyond a cash limit;
- **IATA EasyPay**, which introduces a new, secure payment method based on a pay-as-you-go model for tickets issued through the BSP; and
- **global insurance** that offers travel agents a new and optional financial security solution to what is already available in the market.

The 79,000 IATA-accredited travel agents around the globe are important partners in delivering aviation industry connectivity and are the vital link between airlines and many of their customers. A dialogue has been established with the travel agency community on the value proposition for NewGen ISS through local governance forums and global travel agency associations under the umbrella of the Passenger Agency Program Global Joint Council.

The Passenger Agency Conference (PAConf) establishes the resolutions that govern IATA accreditation for travel agents. To date, PAConf has approved the NewGen ISS framework and is incorporating it into a resolution that will be presented for adoption at PAConf in 2016.

The Order management processes

IATA's ONE Order aims to align order management processes with capabilities enabled by aviation's move to e-ticketing in 2008. This industry-led initiative will replace multiple and rigid booking, ticketing, delivery, and accounting methods using the data communications advances made possible through the New Distribution Capability (NDC).

The fundamental objective of ONE Order is a single customer order record that includes all the data—customer details, order item, payment and billing, and fulfillment data and status information—required for order fulfillment throughout the air travel cycle. ONE Order will result in the gradual disappearance of multiple reservation records and e-ticket and electronic miscellaneous documents (EMD) in favor of one reference travel document.

This will eliminate the need for passengers to juggle different reference numbers and documents along their journeys and thereby greatly simplify the passenger experience. With ONE Order, the only thing that travelers will need to be easily and instantly recognized is their order reference number.

Airlines and travel agents, too, will benefit from ONE Order's simplification of the air travel experience. The reduced complexity will lead to heightened efficiency and, in turn, to potential cost savings. ONE Order also has the potential to facilitate greater interoperability between traditional and ticketless carriers, yielding yet further network opportunities for air travelers.

Supporting success: **solutions in all areas**

Generating value

IATA's innovative products and services represent unique competitive alternatives and have consistently generated value in the aviation industry for more than 70 years. The revenue generated by these products and services is reinvested to drive and support industry-wide programs in such critical areas as safety, security, and the passenger experience.

Understanding the passenger

Direct Data Solutions (DDS) helps airlines make business decisions based on comprehensive passenger traffic data derived from ticketed passenger information.

DDS is the largest repository of airline ticketing data in the world, with more than 5.1 billion transactions available to users since 2010. By mid-2016, DDS will cover an estimated 92% of worldwide agency sales. It is also the most comprehensive data set in the world, as it includes ticketing details, such as fares and taxes.

Only airlines that contribute their ticket information to DDS are able to utilize its data. Its uniqueness is reinforced by carriers contributing their direct sales data and DDS gets stronger with each new participant.

Airs@t is a comprehensive passenger satisfaction benchmarking survey designed for the airline industry. It helps airlines to understand passenger preferences on around 80 attributes, including preflight, in-flight, and postflight experiences. Airlines are able to compare the customer satisfaction ratings of their passengers with the satisfaction ratings of their competitors' customers. Annually, more than 60,000 passengers of 30 airlines are surveyed by our fieldworkers in more than 40 airports worldwide.

Timatic helps airlines to comply with border regulations. **Timatic AutoCheck** enables airlines to automate the passenger travel document check for even the most complicated journey and thereby avoid costly fines should they fly an inadmissible passenger. Timatic AutoCheck can be integrated with airlines' departure control systems and with kiosk, web, and mobile check-in options.

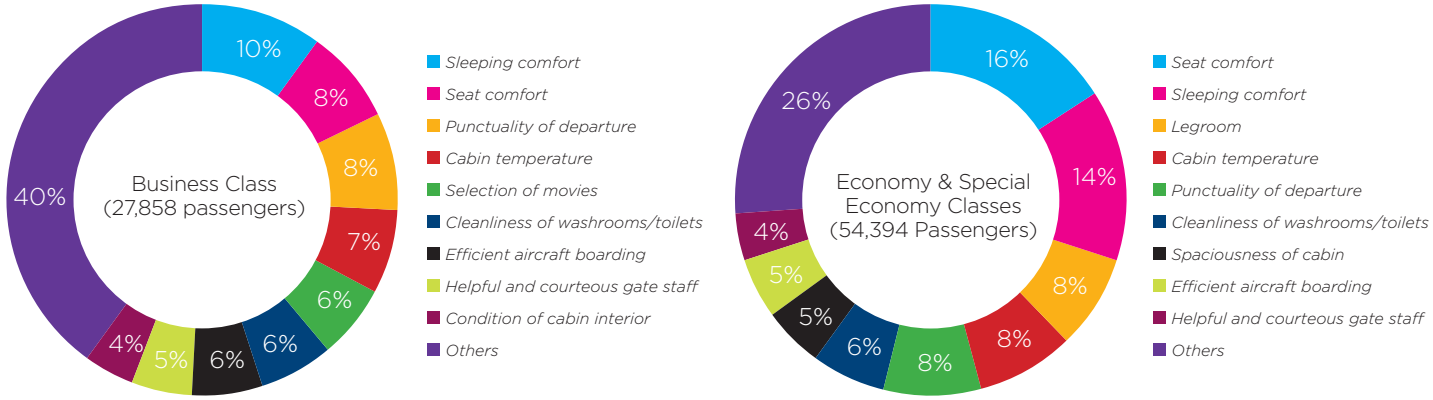
In addition to driving the adoption of self-service check-in, Timatic is an enabler of various other Fast Travel initiatives, involving baggage, flight rebooking, and self-boarding. IATA continues to work with such providers as Amadeus, Sabre, IBM, Embross, Damarel, INK Aviation, and Airline Choice to offer Timatic AutoCheck capabilities through standard industry solutions.

In 2015, 244 million passengers had their travel documents verified and airlines saved 59 cents per passenger by using Timatic. This reliable system features full redundancy and cloud-based hosting at sites in Frankfurt and Singapore.

A new Timatic solution, **Timatic Analytics**, was developed in 2015. It enables airlines to mine their Timatic data to identify enhancements for their operations and check-in procedures.

What aspects of flights need the most improvement?

(Extracted from Airs@t)



Global expertise for business challenges

IATA Consulting carried out a range of projects in 2015 to help clients improve their operational and commercial performances in many different areas. Clients encompassed airlines, airports, investors, CAAs, and other aviation stakeholders. One project involved energizing the launch of a major Middle Eastern airline's turnaround strategy through a comprehensive performance review. In this case, at a modest cost to the carrier, the IATA Consulting team identified $66 million in possible savings, among other recommendations.

Another project, a fuel efficiency evaluation for a fast-growing European airline, identified potential savings of just over six million kilograms of fuel per year and a reduction of 19,590 tons of CO_2 annually. In financial terms, the savings total $3.9 million or 2.0% of the carrier's annual fuel budget. Other IATA Airline Consulting projects included assisting the management of another European airline in its decision to introduce a premium economy product, and helping airlines in China understand the latest developments in ancillary revenues.

By applying the new Level of Service (LoS) concept, which is featured in the latest edition of the ***Airport Development Reference Manual***, IATA Airport Consulting and ACI World partner to provide objective analyses to airports wanting to optimize resources and expenditure. Using global benchmarks, the LoS assessments identify opportunities to minimize passenger waiting times and to maximize facility processes, for current operations and planned expansions. In some cases, clients were able to minimize, adjust, or postpone costly investments based on these assessments, some of which were supported with simulation software. In 2015, these assessments took place at several airports, including the Quito, Ashgabat, and Curaçao International Airports.

In 2015, IATA Consulting also provided technical assistance to Aerocivil of Colombia for the redesign of its airspace and optimization of airside capacity at Bogota's El Dorado International Airport. The aim is to ensure that this airport becomes a highly efficient national and international hub.

Cargo developments

CargoIS uses data from millions of air waybills, representing the activity of airlines and freight forwarders on thousands of trade lanes every month, to provide actionable business intelligence. It sources its data from CASS, the Cargo Accounts Settlement System operated by IATA and used by airlines to settle with freight forwarders. As such, CargoIS is the only air cargo intelligence solution based on actual transactions. CargoIS Direct Data will be added to CargoIS in 2017 to bring non-CASS transactions into the database.

The IATA Dangerous Goods Portfolio includes the ***Dangerous Goods Regulations*** (*DGR*), the global reference for safe shipping. The *DGR* is the source for up-to-date information on how to safeguard the entire cargo value chain, including how to classify, pack, mark, label, and document shipments of dangerous goods safely.

To ensure cargo chain compliance with the new regulations governing lithium-ion batteries, IATA has developed the ***Lithium Battery Shipping Guidelines***. This document guides shippers through the process of efficiently and effectively preparing lithium battery shipments. The *Lithium Battery Shipping Guidelines* are available in numerous formats, including online, as a download, and on CD. They are also available in Chinese, increasing their relevance in the largest market for lithium battery manufacture.

TACT is the source for published rates and rules for air freight. **TACT Online** likewise provides the rates and rules but is also the most comprehensive source for air cargo schedules available and now features a newly revamped interface. And **TACT Net Rates**, launched in March 2016, introduces the dynamic and automated delivery of private air freight rates and charges from airlines to forwarders. This avoids the cumbersome manual creation and e-mailing of thousands of rate sheets. Tact Net Rates is an important step in automating and digitizing air freight commercial processes.

Airport data and analysis

AirportIS features the most comprehensive passenger and cargo traffic data obtainable and is used by more than 70 airports for marketing and air service development activities. For organizations outside the air transport industry, AirportIS is a unique strategic window into global passenger streams and travel patterns. Its business intelligence helps all users to improve their competitive position. AirportIS continues to be a market leader in airport business intelligence, and its new interface ensures best-in-class customer experiences.

IATA training

In 2015, the **IATA Training and Development Institute** (ITDI) trained approximately 100,000 professionals and students from all over the world in all areas of aviation. ITDI's 350-plus courses and 40-plus diploma programs are developed around IATA's areas of expertise and commitment to promoting global industry standards; helping businesses operate safely, efficiently, and sustainably; and building career opportunities.

ITDI course introductions in 2015 included management-focused training through the Cargo Airline Management and Airport Strategic Management Programs. Participants were put through realistic business scenarios. ITDI also inaugurated and expanded a virtual classroom program in aviation leadership development in collaboration with Harvard Business Publishing. The expansion included a program in aviation strategy execution. In addition the ITDI introduced finance and IT courses focused on the New Distribution Capability and launched diplomas in airline quality management and quality management in general for civil aviation authorities and air navigation service providers.

In 2015, the ITDI was awarded ISO 9001:2015 certification for the quality of its training and for its quality management system. ITDI's more than 300 highly qualified IATA instructors teach courses mainly in English, with some courses available in French, Spanish, Russian, and Mandarin. To meet varying needs and budgets, ITDI makes its training available in 20 ITDI training centers, through distance learning, in company settings, or through 450 ITDI reseller and partner institutions.

The ITDI partners with academic institutions to offer management-level training tailored to working industry professionals who require a unique combination of academic and aviation industry expertise. The ITDI also partners with some of aviation's leading organizations, such as ICAO, Airports Council International (ACI), and Eurocontrol, to address the industry's broad training issues.

The ITDI 2015 by numbers:

- About 100,000 people trained
- From 1,000-plus organizations
- In 90-plus countries
- Across 350-plus courses
- Involving 450 resellers and partnering institutions, including
  - 25-plus regional training partners
  - 270-plus authorized training centers
  - 160-plus accredited training schools

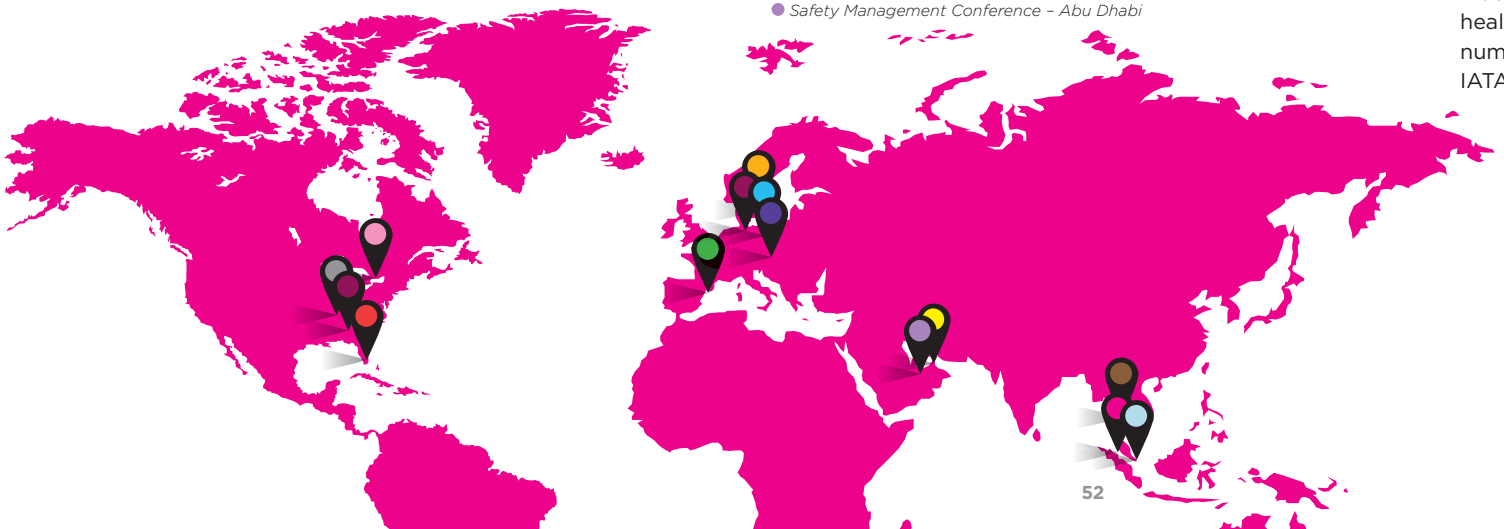
Events

IATA's core conferences cover topics as diverse as law, cargo, finance, maintenance, ground handling, passenger experience, airport slots, and safety and flight operations. As such, IATA continues to respond to demand from the aviation supply chain to meet and discuss critical air transport issues and solutions and networking to drive commercial success.

In 2015, IATA produced its first World Maintenance Symposium, in conjunction with the IATA Maintenance Cost Conference. In 2016, IATA will host its first Safety Management Conference. This event will focus on the general safety culture within aviation organizations and, specifically, on safety management systems.

2016 events

- *World Cargo Symposium – Berlin*
- *Legal Symposium – Barcelona*
- *OPS Conference – Copenhagen*
- *Cabin Safety Conference – Miami*
- *Fuel Forum – Prague*
- *Ground Handling Conference – Toronto*
- *CNS Partnership Conference – Nashville*
- *World Financial Symposium – Singpaore*
- *World Passenger Symposium – Dubai*
- *AvSec World – Kuala Lumpur*
- *Slots Conferences (spring and fall) – Hamburg and Atlanta*
- *Maintenance Cost Conference – Bangkok*
- *Safety Management Conference – Abu Dhabi*



Strategic Partnerships

Over 25 years ago, IATA helped airlines enter an era of cooperation with industry suppliers that laid the foundation for **IATA Strategic Partnerships**.

The IATA Strategic Partnerships program has grown into a community of more than 400 partners worldwide who share ideas and collaborate to improve aviation practices and technologies. This forward-thinking program focuses on more than 40 areas of involvement and thus covers a comprehensive range of industry activities. Members contribute to the efforts of more than 100 work groups and task forces.

Such a collaborative effort has greatly enhanced the quality of IATA standards. Initiatives developed in conjunction with IATA Strategic Partners have delivered countless operational efficiencies and safety enhancements for airlines. Strategic Partners, too, have benefited by being among the first to receive information on crucial opportunities through their participation in work group and task force discussions. Establishing a forum for cooperation has been a win-win situation for all stakeholders. And IATA Strategic Partners will continue to forge a stronger future for the air transport industry.

In 2015, IATA Strategic Partnerships launched a number of important new areas of involvement, including in airline industry economics, data and communications, and aviation health and medicine. The program also welcomed a record number of new Strategic Partners at its flagship event, the IATA Annual General Meeting in Miami, Florida.

Flying better.
Together.

Airlines have worked together for 70 years to establish the links that create social and economic progress

Social and economic progress

IATA's 70th anniversary, from April 2015 to April 2016, allowed the association to fete the airline members whose collaborative work has guided the aviation industry through damaging crises and tremendous growth.

Partnering for airline success is the bedrock of global social and economic development. It underpins aviation's crucial role in transporting people from the four corners of the world to meet for business and pleasure.

IATA, established in 1945 by 57 airlines from 31 countries, is central to this partnership approach. Its early work was largely prescriptive, however, forming the parameters that allowed the fledgling industry to function effectively. Within a few years of IATA's founding, though, IATA's growing membership had accomplished much. It had passed some 400 resolutions at the first Traffic Conference; established the IATA Clearing House (ICH) to handle airlines' money; and set up IATA regional offices in New York, Paris, and Singapore to represent better the increasingly global scope of aviation.

Membership resolutions arrived at during early IATA annual general meetings (AGMs), moreover, provided input for ICAO and the major conventions that still govern aviation. The Warsaw and Rome Conventions, the Hague and Guatemala Protocols, and Montreal Protocol 4 have all been influenced by IATA AGM resolutions. Smarter regulation is a cornerstone of IATA's work.

IATA member airlines, in effect, quickly put in place the keystone of aviation: global standards. These standards were especially important as the industry began deregulating in the late 1970s. They allowed IATA to be effective within a competitive arena and ensured that airlines had a platform for creating value appropriate to the times.

Safety and security

Safety—one of the original articles of the association and a top priority ever since—has evolved to match the enormous growth in air traffic. Despite passenger numbers rising to 3.5 billion, the accident rate has consistently fallen. Some 100,000 flights take off and land safely every day because the industry has never lost sight of the fact that passenger and crew safety can always be improved.

The IATA Operational Safety Audit (IOSA) has proved to be a particularly important step since its launch in 2003. An enhanced version of the audit governs airline safety and stipulates continuous monitoring and compliance throughout the two-year IOSA audit cycle. More than 400 airlines are on the IOSA registry, indicating the extent to which the program is highly regarded even by non-IATA members. Data sharing will be the cornerstone for the next generation of safety advances, heralding a prevention rather than cure approach.

Passenger security, too, is developing to meet changing needs. Airlines have managed to balance facilitation and security over the past seven decades. Smart Security, based on risk assessment rather than prescriptive measures, will optimize this delicate juggling act.

Air passenger numbers from 1945 through 2015 *(Source:* ICAO, IATA*)*

Environment

From the 1960s onwards, questions about environmental concerns related to aviation have been headline news. Part of the industry's answer has come from technology upgrades. New-generation aircraft, for example, are approximately 15% quieter and up to 20% more fuel efficient than the models they replace.

But airlines have not relied on the efforts of others. IATA helped to drive an industry-wide four-pillar strategy made up of improvements in operations, infrastructure, and technology combined with positive economic measures that has guided air transport's work since 2008.

Sustainable aviation fuels are a case in point. As many as 2,000 flights have used these fuels without problem. The widespread use of sustainable fuels could reduce the industry's carbon footprint up to 80%. The challenge is to encourage governments quickly to provide a favorable regulatory framework that makes these fuels commercially viable.

An impending ICAO agreement on a global market-based measure, meanwhile, will provide an additional boost to airlines' determination to cut emissions and to hit a self-imposed, industry-leading target of carbon-neutral growth by 2020. The measure will also propel airlines toward their longer-term aim of a 50% reduction in net emissions by 2050, compared with 2005.

Fast Travel

The advent of the Internet and increasing digitization have similarly influenced the course of the aviation industry.

Simplifying the Business, launched in 2004, began this process. It achieved e-ticketing, modernized boarding passes, and furthered check-in automation. Fast Travel is taking these improvements to the next level and incorporates mobile connectivity. The New Distribution Capability (NDC) adds to the mix, making personalization available through a host of channels.

Passengers have benefited enormously from increased airline efficiency and cooperation. Fares continue to fall in real terms even as passengers take advantage of greater choice and control in their journeys.

Many other areas of aviation, from cargo to air navigation, have likewise seen substantial progress thanks to the willingness of airlines to work together. And this, too, benefits passengers and the global economy.

Challenges, of course, will persist. But 70 years of airline collaboration through IATA have shown that airlines fly better together thanks to global standards and a flexible approach. IATA's enduring relevance means that aviation will continue to drive social mobility and economic progress globally.

1945—2015
70 YEARS
Flying better. Together.

IATA 70TH ANNIVERSARY: TIMELINE

April 1945
57 airlines from 31 countries voted into being the new International Air Transport Association

1945
First AGM elected Sir William P. Hildred as IATA Director General

1947
The first Traffic Conference reached agreement on 400 resolutions covering all aspects of air travel

1947
The IATA Clearing House (ICH) began operations

1947
IATA set up regional offices in New York, Paris, and Singapore

1955
IATA membership rose to more than 70 airlines

1959
The IATA Clearing House (ICH) processed more than $1 billion for the first time

1966
Knut Hammarskjold took over as IATA Director General

1965
IATA membership surpassed the 100-airline mark

1972
Launch of IATA Billing and Settlement Plan for travel agents, in Japan

1975
IATA membership reached 110 airlines, which carried 317 million passengers

1978
An IATA Special General Meeting made tariff coordination optional for carriers

1980
IATA launched the Program for Developing Nations' Airlines

1983
IATA began its management training courses

1984
Gunter Eser took over as IATA Director General

1985
IATA members rose to 150 airlines, which carried 465 million passengers

1985
IATA began selling industry services, such as yield management and currency conversion

1992
Pierre Jeanniot became IATA Director General and CEO

1995
IATA members numbered 225 airlines representing 140 countries

1996
The IATA Executive Committee of airline CEOs was renamed the IATA Board of Governors

2002
Giovanni Bisignani took the helm as IATA Director General and CEO

2003
The IATA Operational Safety Audit (IOSA) is launched and from 2009 becomes mandatory for all IATA members

2004
Simplifying the Business is launched

2008
The industry achieved 100% e-ticketing

2009
IATA announced its vision for carbon-neutral growth

2011
Tony Tyler became IATA Director General and CEO

2013
ACI and IATA sign a memorandum of understanding to develop the Smart Security intitiative

2014
The ICH achieves an on-time settlement rate of 100%

2015
The US Department of Transport approved resolution 787, paving the way for the rollout of New Distribution Capability

2015
IATA members increased to 260 airlines, comprising 83% of all commercial air traffic

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Flying better. Together.