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ECONOMIC DEVELOPMENT

NO COUNTRY LEFT BEHIND



Opening remarks for the ICAO NGAP Forum

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Director Air Transport Bureau

Montréal, Canada
27 November 2017





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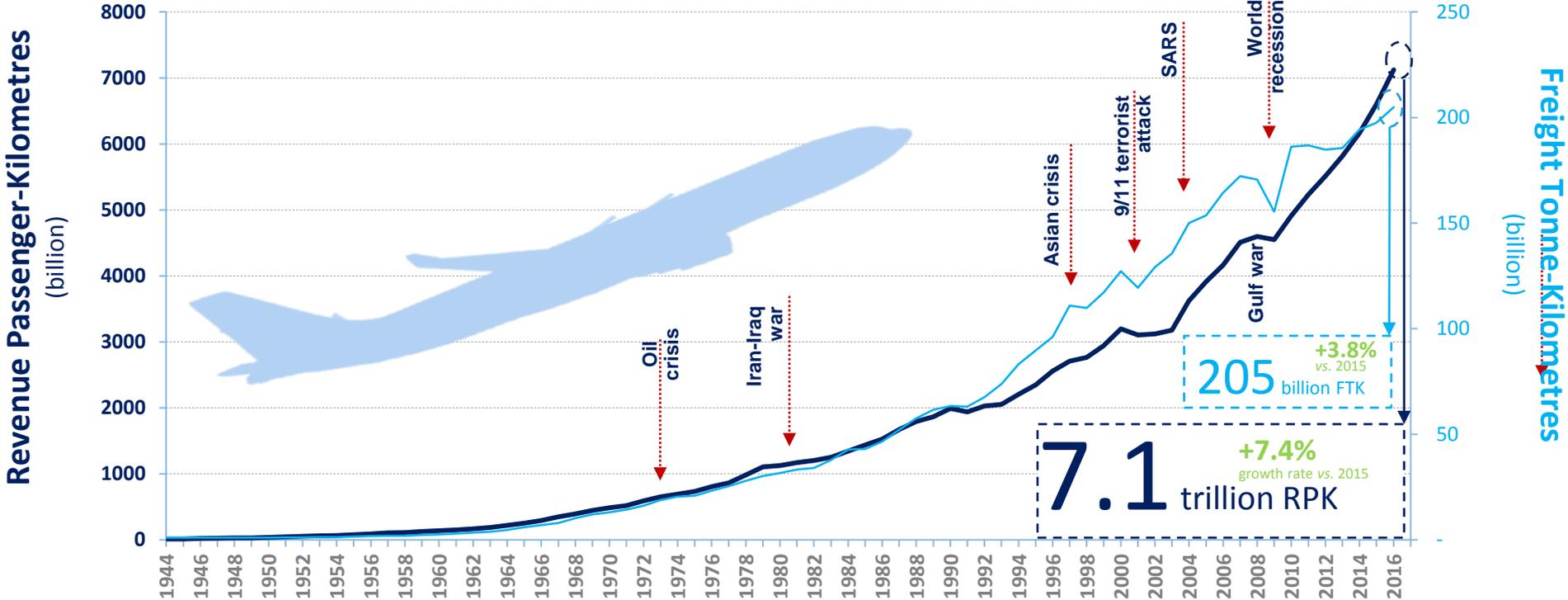


STATE OF THE INDUSTRY 2016: LATEST FIGURES





Growth of air transport





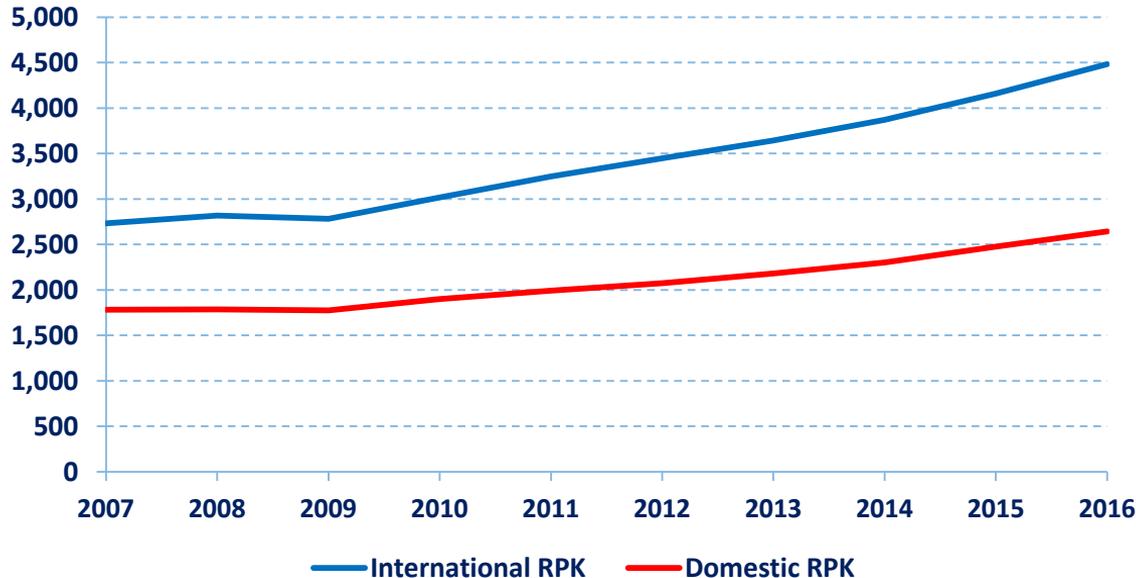
The size of the industry 2016

- **3.8 billion passengers**
- **53 million tonnes of freight**
- **Over 1 400 scheduled airlines**
- **More than 28 000 aircraft**
- **More than 4 130 airports**
- **173 air navigation centres**



International and domestic passenger traffic

Domestic and International Revenue Passenger-Kilometres (RPK)
(in billion)

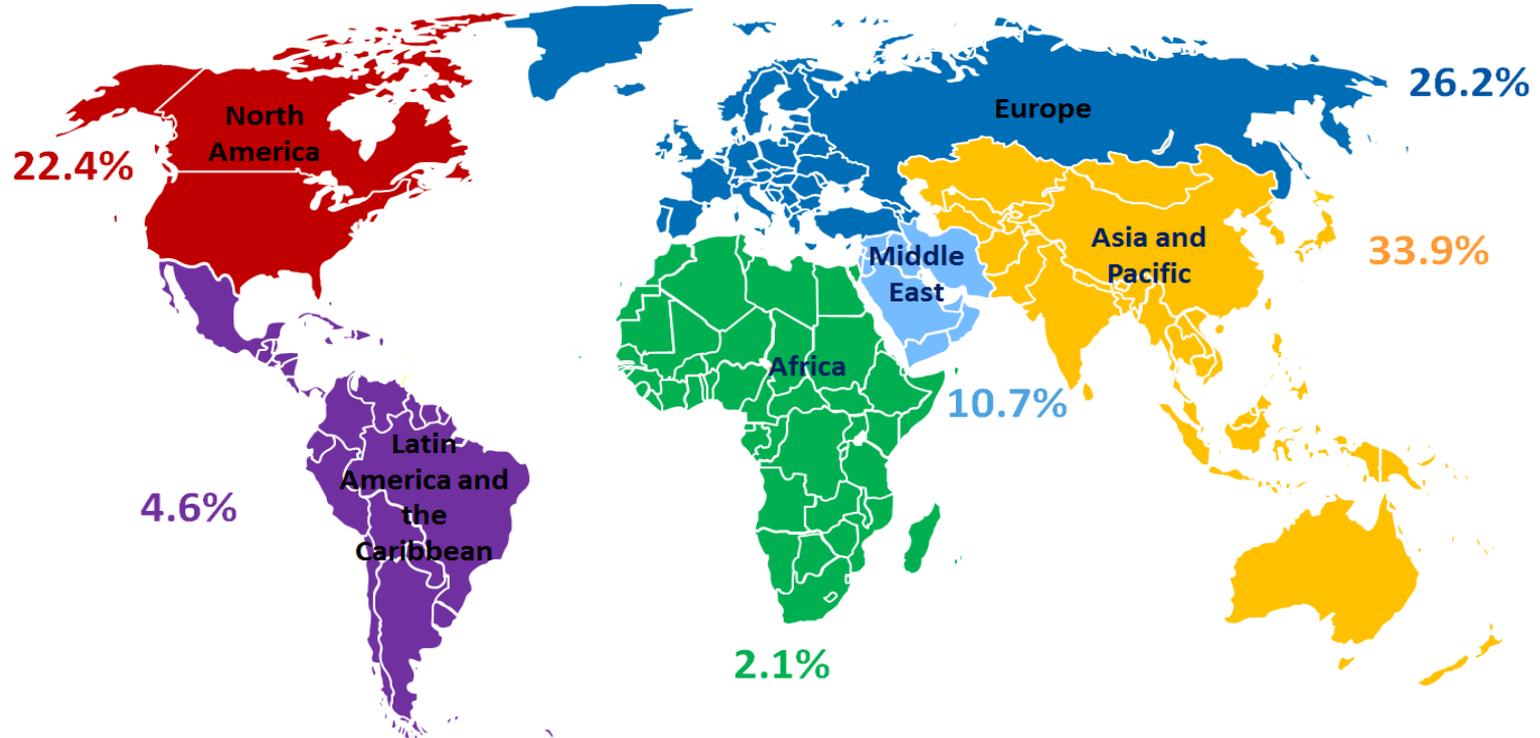


+7.8% in 2017 (ICAO projection)

+7.0% in 2017 (ICAO projection)



Share of Revenue Tonne-Kilometres by region in 2016





Traffic rankings in 2016

States Ranking by International Total (Scheduled and Non-scheduled) Revenue Tonne-Kilometres (RTK)

Rank	State of AOC	RTK 2016 (million)	RTK Share (%)	Cumulative (%)	SIDS ⁽²⁾	LDC ⁽³⁾	LLDC ⁽⁴⁾
1	CHINA ⁽¹⁾	76,825.4	12.25%	12.25%			
2	UNITED STATES	67,713.1	10.80%	23.05%			
3	UNITED ARAB EMIRATES	55,287.0	8.81%	31.86%			
4	UNITED KINGDOM	37,852.6	6.04%	37.90%			
5	GERMANY	32,987.6	5.26%	43.15%			
6	REPUBLIC OF KOREA	23,967.9	3.82%	46.98%			
7	QATAR	21,672.0	3.46%	50.43%			
8	SINGAPORE	19,217.6	3.06%	53.50%	Y		
9	FRANCE	18,412.2	2.94%	56.43%			
10	TURKEY	18,240.8	2.91%	59.34%			
11	JAPAN	17,032.2	2.72%	62.06%			
12	RUSSIAN FEDERATION	15,817.0	2.52%	64.58%			
13	NETHERLANDS	15,793.9	2.52%	67.10%			
14	CANADA	14,788.0	2.36%	69.45%			
15	IRELAND	14,428.2	2.30%	71.75%			
16	SPAIN	10,133.9	1.62%	73.37%			
17	THAILAND	10,069.7	1.61%	74.97%			
18	AUSTRALIA	9,695.2	1.55%	76.52%			
19	MALAYSIA	8,280.3	1.32%	77.84%			
20	INDIA	7,566.7	1.21%	79.05%			
21	LUXEMBOURG	7,199.3	1.15%	80.20%			
22	SWITZERLAND	6,719.5	1.07%	81.27%			
23	NORWAY	5,861.4	0.93%	82.20%			
24	SAUDI ARABIA	5,217.2	0.83%	83.03%			
25	ITALY	4,897.3	0.78%	83.81%			
26	PHILIPPINES	4,728.8	0.75%	84.57%			
27	ETHIOPIA	4,313.1	0.69%	85.26%		Y	Y
28	BRAZIL	4,270.6	0.68%	85.94%			
29	MEXICO	4,032.1	0.64%	86.58%			
30	BELGIUM	3,832.7	0.61%	87.19%			
31	NEW ZEALAND	3,753.6	0.60%	87.79%			
32	INDONESIA	3,308.8	0.53%	88.32%			
33	FINLAND	3,298.9	0.53%	88.84%			
34	CHILE	3,277.2	0.52%	89.36%			
35	ISRAEL	3,146.0	0.50%	89.87%			

Note:

(1) China includes Hong Kong SAR, Macau SAR, and Taiwan Province of China.

(2) SIDS: Small Island Developing States

(3) LDC: Least Developed Countries

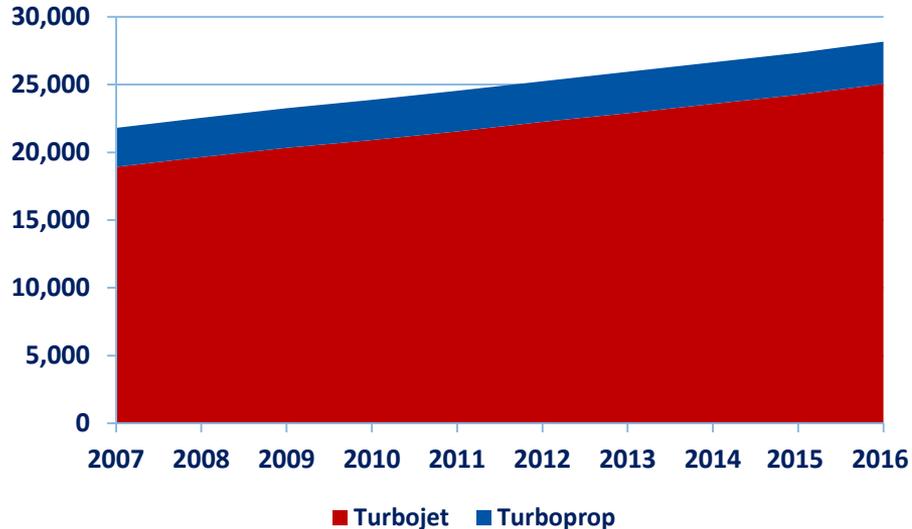
(4) LLDC: Landlocked Developing Countries

Source: ICAO



Airline fleet

Commercial fleet evolution



For the 2 largest aircraft manufacturers (Airbus and Boeing) in 2016:

- **1520** new aircraft **delivered**
- **Net orders** for **1555** aircraft

Book to bill ratio = orders / deliveries

Book to bill ratio sharply declined from **1.3:1** in 2015 to **1:1** in 2016, reflecting slowing orders to deliveries.



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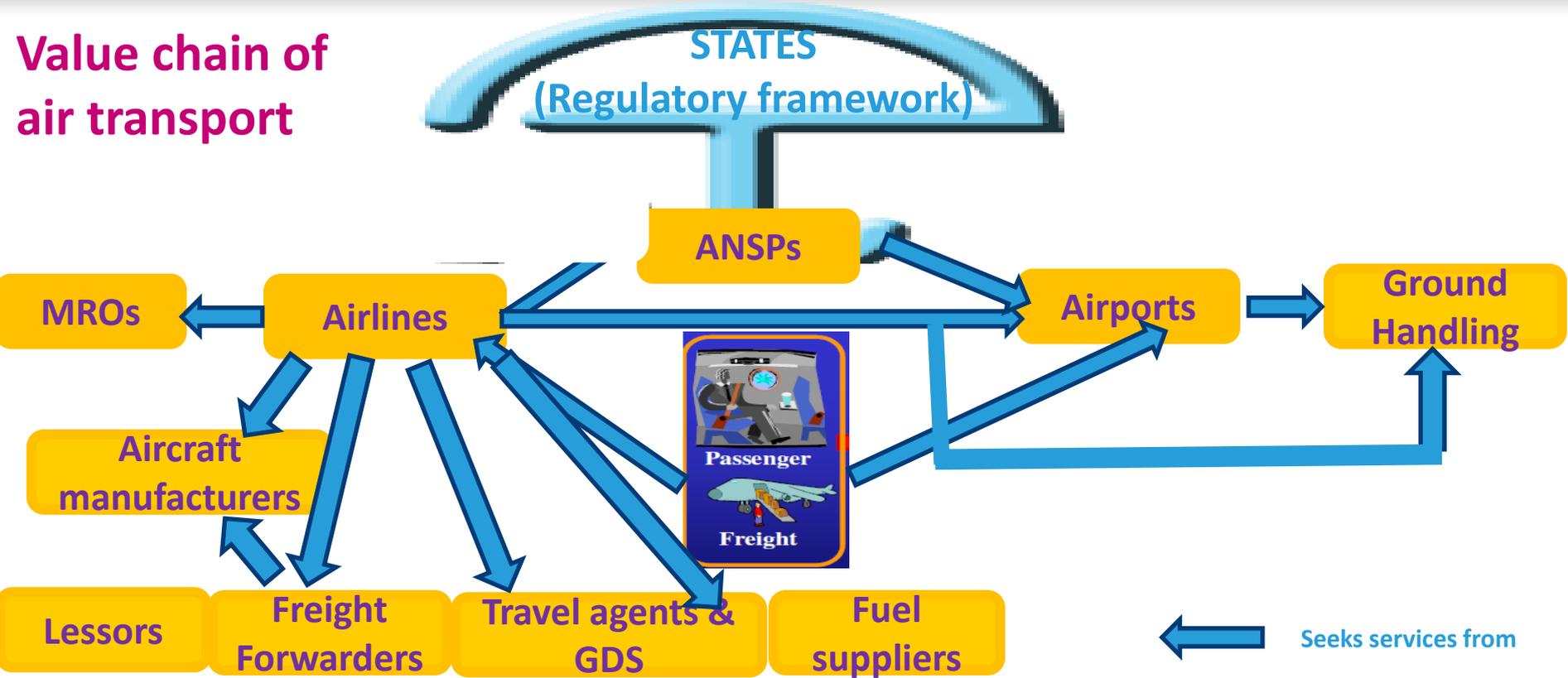


AVIATION PERSONNEL FORECASTS





Value chain of air transport





Direct economic contribution of the aviation sector

10.2 million

Direct jobs supported by aviation worldwide

\$725 billion

Direct Global economic impact

Direct, indirect, induced and tourism economic contribution of the aviation sector

67.3 million

Jobs supported by aviation worldwide

\$2.7 trillion

Global economic impact

In collaboration with the United Nations, States and international organizations, ICAO is developing a universally-accepted methodology to measure aviation's gross domestic product (GDP) relative to overall economic activity, to better showcase the economic benefits of aviation to the public.



- ICAO Long term traffic forecasts
- 39th Assembly Resolution regarding the update of personnel forecasts
- Aviation Data and Analysis Panel in March 2017



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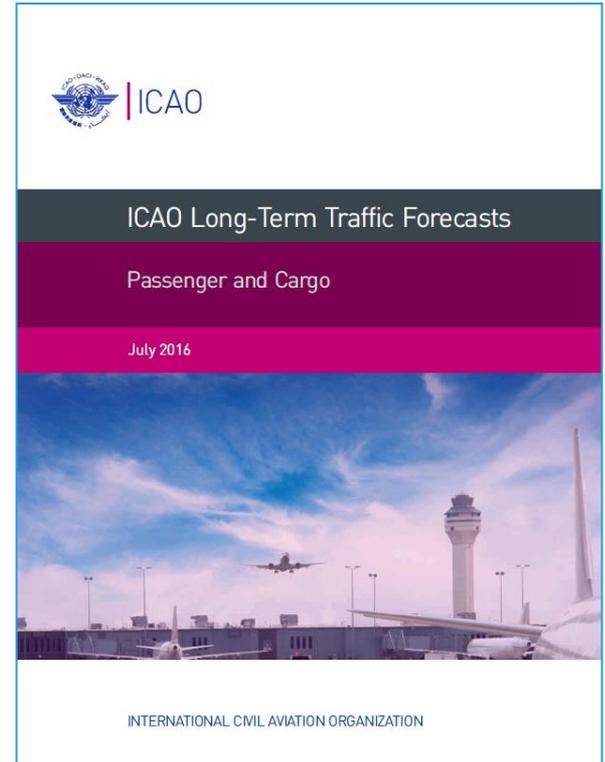


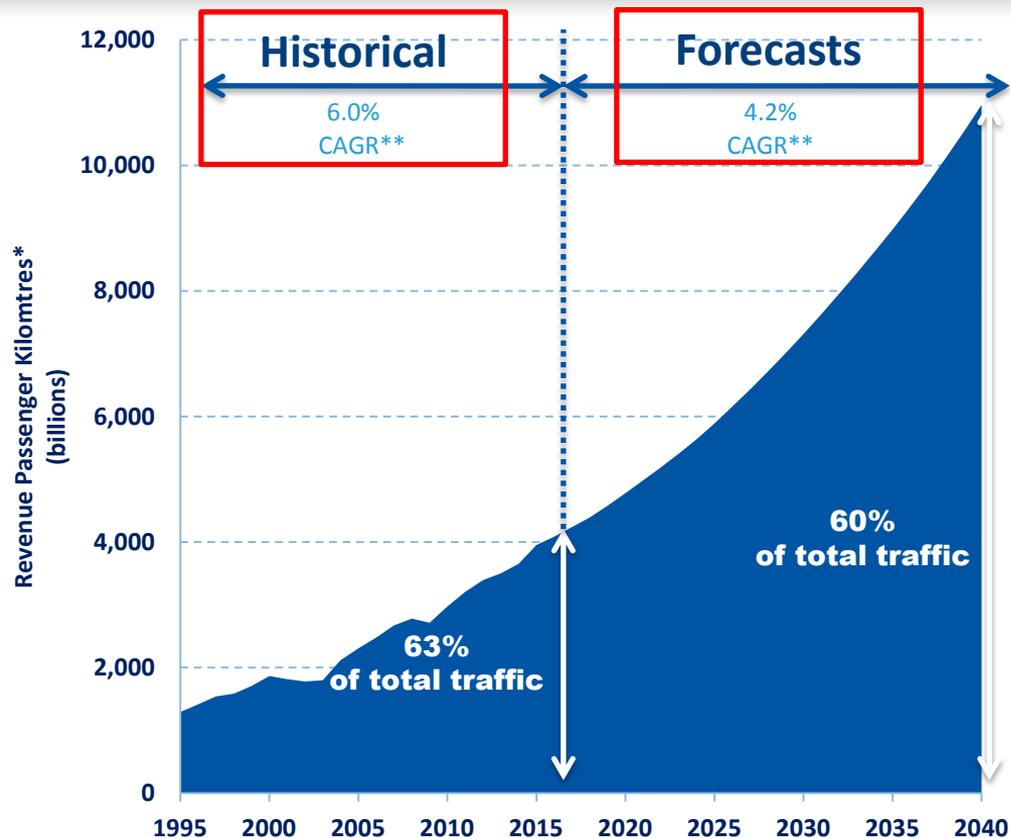
ICAO Long term traffic forecasts

Results of the work of the Multi Disciplinary Working Group on Long Term Forecasts (MDWG-LTF)

MDWG-LTF comprising of Members from CAEP, Member States and Industry

Endorsed by the 39th Session of the Assembly



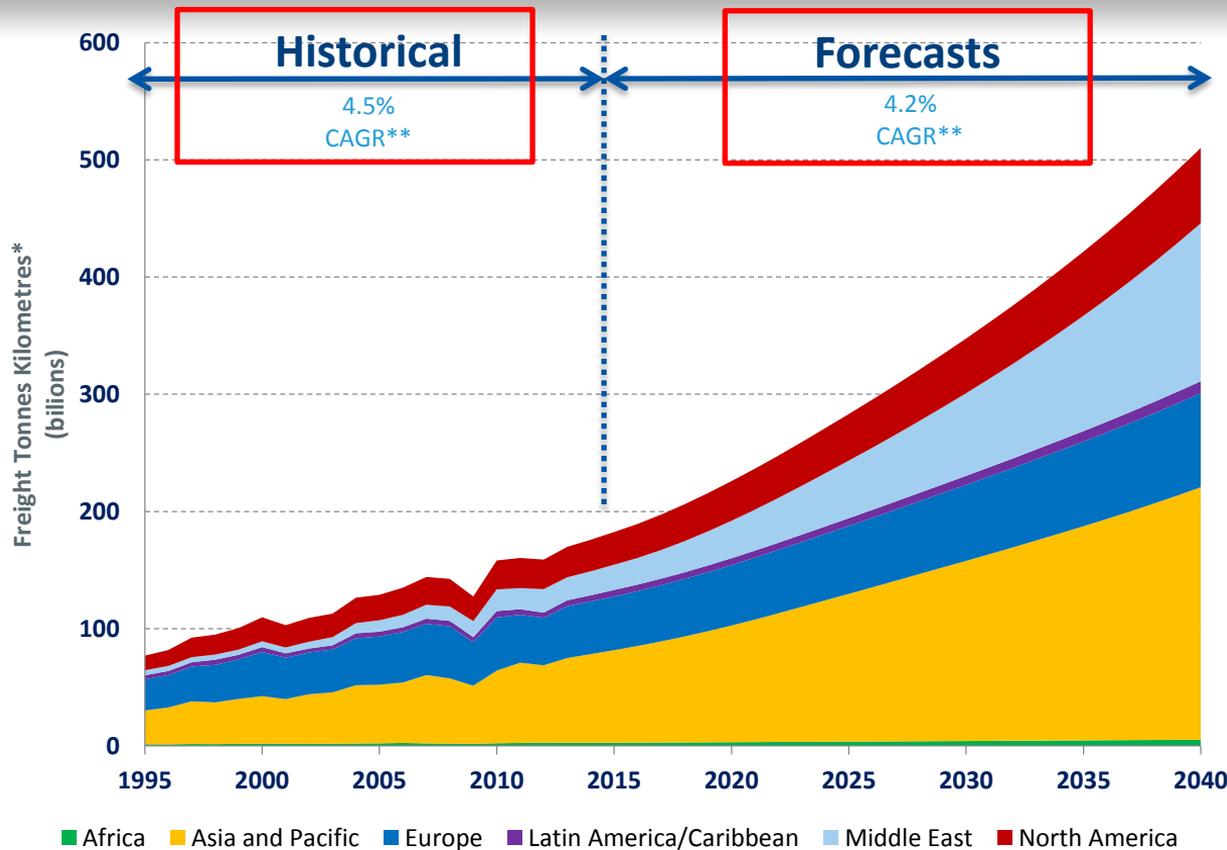


Long-term air traffic forecasts

Scheduled international passenger traffic

Projected Top 10 Routes 2040

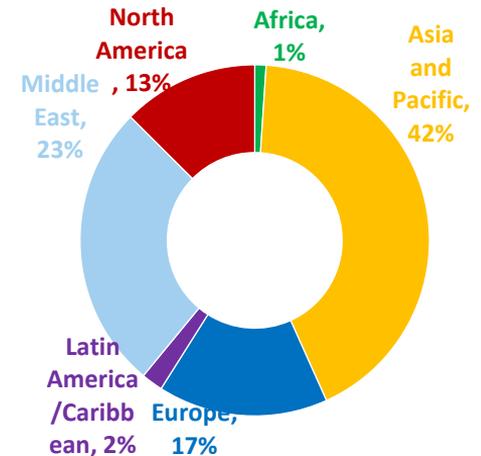
Rank 2040	Rank 2015	Long Term Forecast Route Group	Share 2040	Share 2015
1	4	Central Southwest Asia - Pacific South East Asia	11.9%	5.4%
2	1	Intra Europe	11.5%	15.8%
3	8	Central Southwest Asia - Middle East	11.3%	3.9%
4	2	Europe - North America	9.0%	11.8%
5	3	Central Southwest Asia - Europe	7.3%	5.8%
6	5	Intra Pacific South East Asia	6.1%	4.5%
7	7	Central Southwest Asia - North America	5.9%	4.1%
8	18	Central Southwest Asia- North Asia	4.6%	1.9%
9	6	Europe - Middle East	3.6%	4.5%
10	9	Europe - Pacific South East Asia	3.5%	3.6%



Long-term air traffic forecasts

Scheduled international freight traffic

Projected International Freight Traffic Breakdown by AOC 2040





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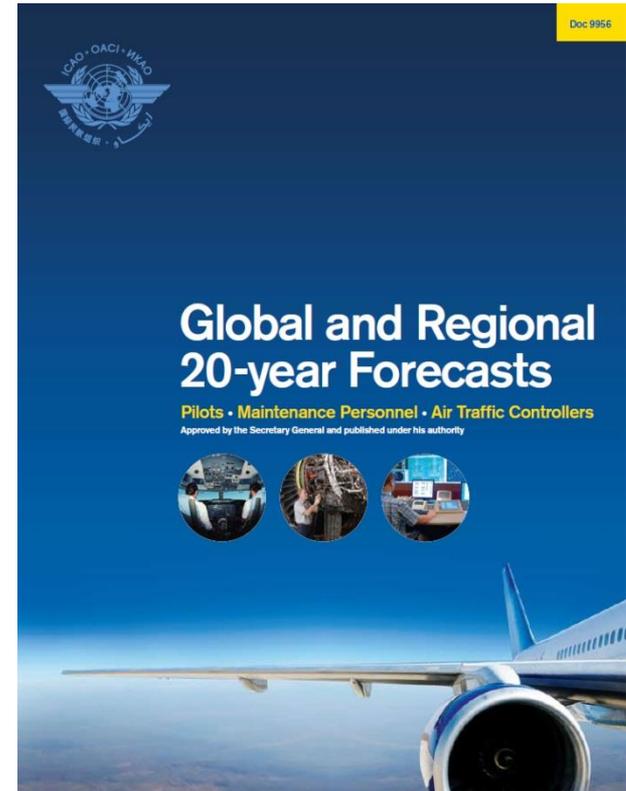
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39th Assembly Outcome regarding Personnel Forecasts

**Report on the Development of a single set of harmonized
long-term forecasts (A39-WP/64)**

Update global and regional 20-year forecasts for pilots, maintenance personnel and air traffic controllers (DOC 9956) in April 2018 to meet the needs of the ICAO Next Generation Aviation Professional (NGAP) programme.





Aviation Data and Analysis Panel met in March 2017

The Panel recommended that:

- a) the Secretariat should continue its work in the development of the forecast of licensed aviation professionals within the timeline proposed and with the help of the MDWG-LTF and the TFGs; and
- b) the Secretariat should consider other sources of information available, which can supplement existing ICAO data and results of the survey.

Traffic forecasts

Endorsed by A39

Fleet forecasts

CAEP and other sources

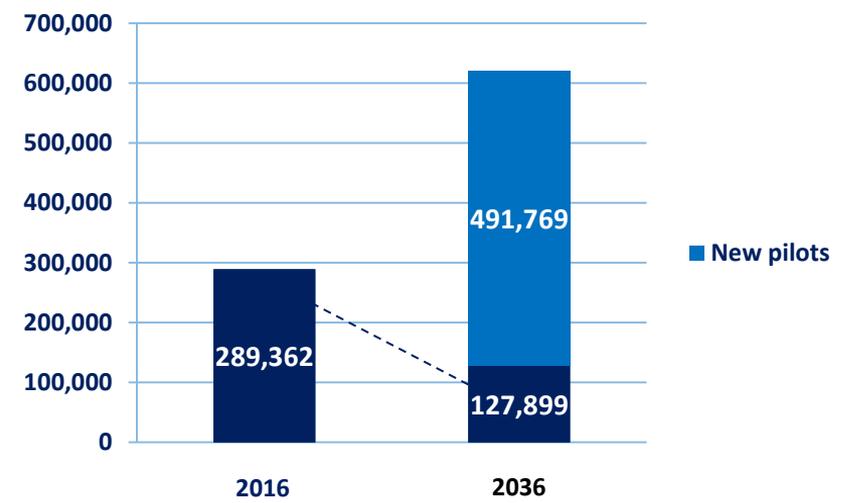
ICAO Survey

New Personnel Forecasts



Pilot forecasts for 2036

Region	Pilots 2016*	Pilots 2036*
Africa	7,251	18,533
Asia-Pacific	84,211	306,268
Europe	66,542	114,299
Latin America	24,965	32,827
Middle East	18,816	45,776
North America	87,577	101,966
World	289,362	619,668



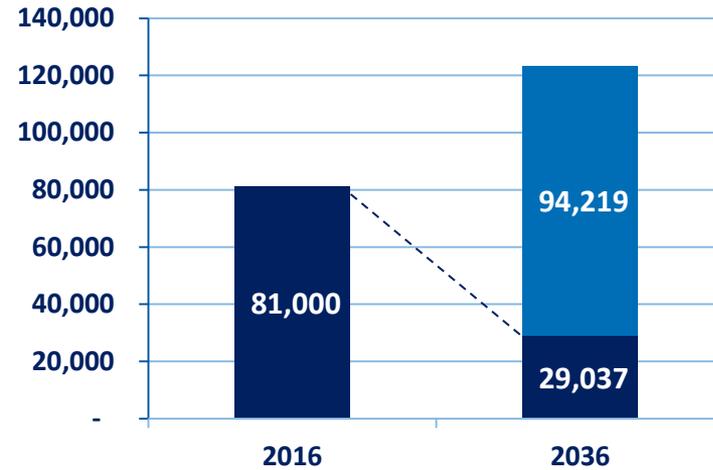
→ 67 new pilots / day

*Number of pilots to fly aircraft above 100 seats



Air traffic controllers forecasts for 2036

	Air Traffic controllers 2016	Air Traffic controllers 2036
Africa	4,860	7,050
Asia/Pacific	25,110	48,993
Europe	23,490	29,589
Latin America	6,480	8,878
Middle East	5,670	8,434
North America	15,390	20,313
World	81,000	123,256



→ 13 new ATC / day



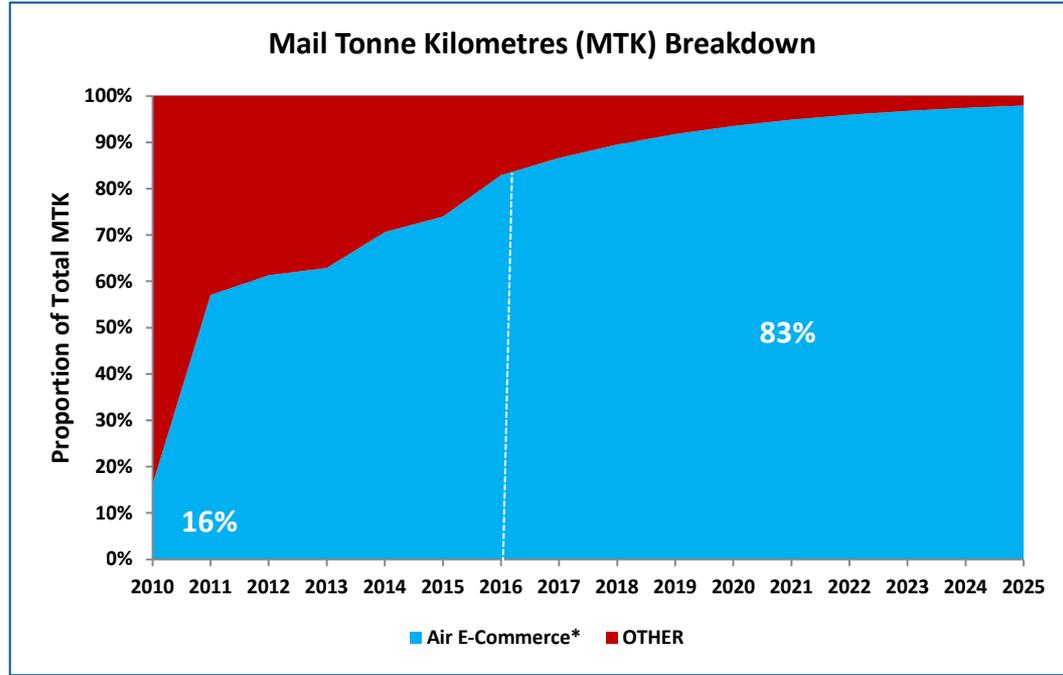
Maintenance personnel forecasts for 2036

1.3 million maintenance personnel required in 2036

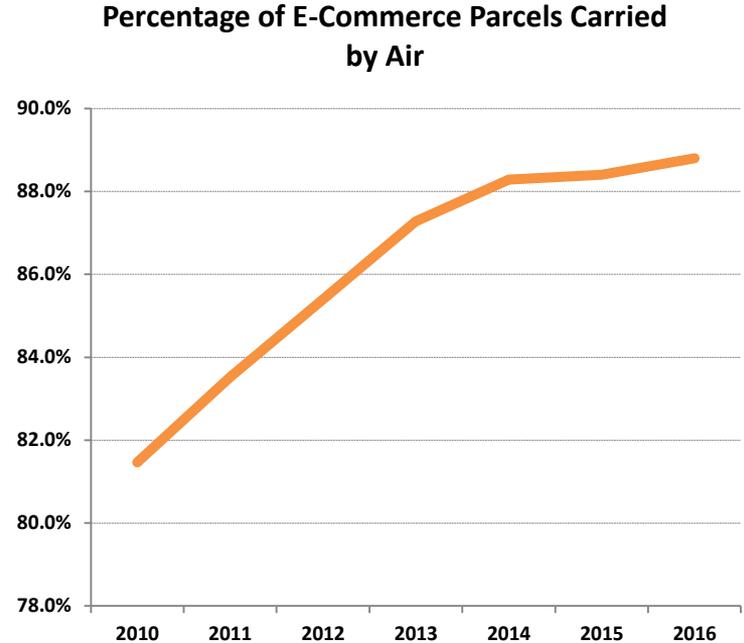
Maintenance personnel population includes personnel employed by commercial air transport operators, maintenance, repair and overhaul organizations (MROs) and training organization.



E-commerce development



- E-commerce share of MTKs grew from 16% to 83% between 2010 and 2016 and is estimated to grow to 91% by 2025



- Approximately 90% of e-commerce parcels were carried by air in 2016

* Air E-Commerce is estimated assuming parcels traveling a distance of above 1000 kilometres are delivered by air



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THANK YOU!