



Annual Analyses of the EU Air Transport Market 2011

Executive Summary

January 2013
European Commission

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Executive Summary

2011 Headlines at a Glance

	World	Europe	Units	Source
Passengers	2.7 billion (+5.6%)	0.8 billion (+5.8%)	Passengers carried	ICAO (Eurostat for Europe)
Airline Demand (RPK)	+6.9%	+9.5%	Revenue Passenger Kilometres	IATA
Airline Capacity (ASK)	+8.2%	+10.2%	Available Seat Kilometres	IATA
Commercial Air Transport Movements	54.5 million (+1.7%)	16.1 million (+3.8%)	Airport Movements	ACI
Cargo (FTK)	-0.6%	+1.5%	Freight Tonne Kilometres	IATA
GDP	+3.9%	+1.6%	GDP growth (Europe = EU27)	IMF
Airline Profitability	\$7.9 billion	<\$1.0 billion	Net Profits	ICAO
Busiest Airport (Passengers)	Atlanta, U.S. (92.4 million)	Heathrow, UK (69.4 million)	Passengers	ACI
Commercial Jet Aircraft Fleet	23,305	7,012	Western and Russian-built Civil Jets	JP Airline-Fleets
Safety	33 accidents 504 fatalities	1 accident 6 fatalities	Commercial Airline Fatal Accidents & Fatalities	EASA

Foreword

The global air transport industry endured a year of mixed fortunes in 2011. On a positive note, air passenger traffic largely continued its upward trend from the 2010 recovery, and worldwide airlines built on the financial success of the previous year to post a collective net profit for the industry. This came despite the impact of the ongoing Eurozone economic/sovereign debt crisis engulfing ever more countries, affecting air cargo more than passenger traffic.

Although the industry as a whole was generally enjoying an upturn, there remained marked regional differences in performance of airlines in terms of operational growth and financial viability. European carriers collectively posted robust traffic growth but suffered financially in comparison to the most profitable airlines of the Asia Pacific region, recording on average less than one tenth of the total profits.

However, the industry again displayed its vulnerability to exogenous events with the North Africa/Middle East political turmoil and natural disaster in Japan severely impacting local, regional and inter-regional air traffic flows.

At the European level, the political revolutions sweeping through Egypt and Tunisia had the intriguing effect of diverting European leisure travellers from these countries to 'safer' destinations in the region, such as Cyprus, Spain and Turkey.

One of the key airport developments in the European Union was the opening of Frankfurt Main's fourth runway to increase capacity and position itself as a leading European hub airport. However, as soon as the new runway was open, a regional court immediately imposed a night-flight ban on the airport.

With the initiation of the SES II Performance Scheme, there has been progress in terms of setting up the structures for reporting and assessing European ATM performance, both through the activities of the Performance Review Body and through the establishment of the Network Management Function. But the European Commission has been swift to follow up with proposed corrective actions where States have shown shortfalls against the agreed targets in terms of performance or implementation.

Following the major and widespread disruption to European airspace in April 2010 due to the eruption of the Icelandic volcano, Eyjafjallajökull, procedures were introduced to mitigate the impacts of a similar event – notably, the European Aviation Crisis Coordination Cell (EACCC) was established. The EACCC was activated for the first time in May 2011 when another volcano in Iceland (Grimsvötn) erupted.

The European aviation industry continues to lead the way on safety. In 2011, according to analyses by EASA, Europe had zero Western-built jet hull losses, and now Europe matches North America in its 10 year average Fatal Accident Rate from 2001-2011.

For European consumers, improvements in on-time arrival performance for European scheduled carriers as a collective were offset by declining standards in long delays on the network carriers in Europe.

The salient points of the 2011 industry review are highlighted in the executive summary that follows.

Traffic

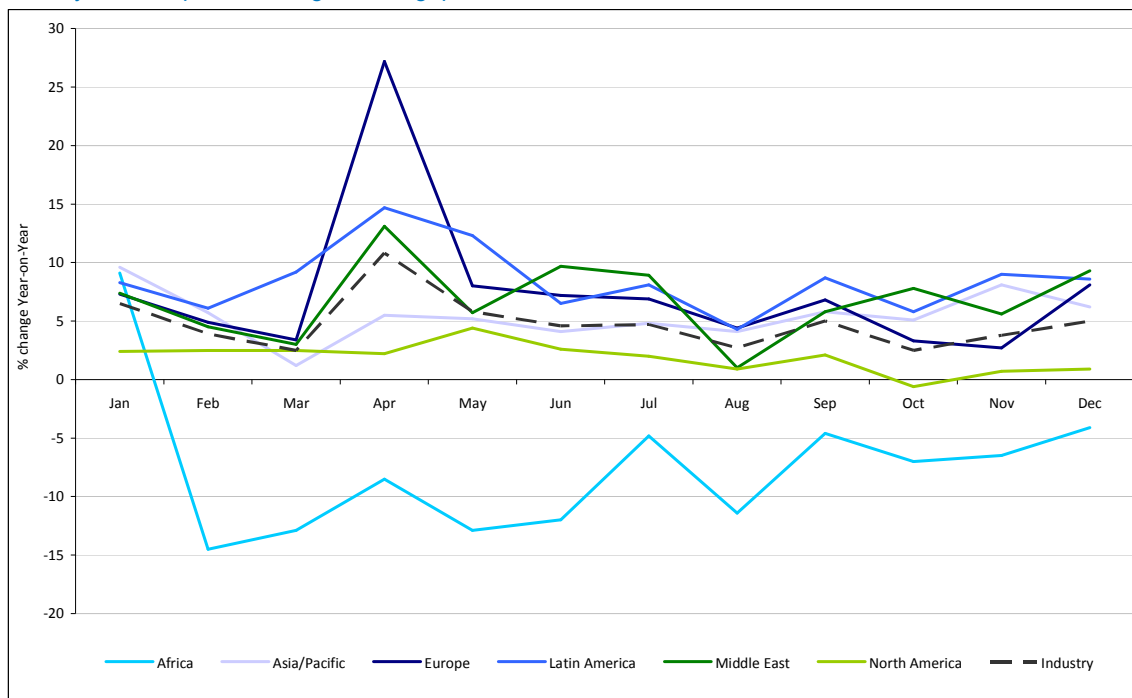
2011 largely continued the recovery in demand started in 2010, albeit at a slower rate.

The International Civil Aviation Organisation (ICAO) stated airlines of its 190 member states handled 2.7 billion passengers in 2011, a 5.6% year-on-year increase on 2010.

Airports Council International (ACI) reported that 5.4 billion passengers passed through its 1,345 member airports worldwide, an increase of 8.0% over 2010.

Although the passenger growth in 2011 is solid, it reflects a slowing down in growth compared to the previous year.

Monthly 2011 Airport Passenger Throughput Growth Rates



Source: ACI Monthly Worldwide Airport Traffic Reports, January-December 2011

The year began with the onset of political turmoil in some North African states, namely Tunisia and Egypt, spreading to Libya and some Middle East nations. Passenger demand growth progressively worsened through the first quarter of 2011 as the North African “revolutions” triggered civil unrest across the region into the Middle East. In March 2011, IATA reported that the political unrest was estimated to have suppressed global international traffic by as much as 1%¹.

In March, a catastrophic earthquake and tsunami hitting Japan severely dented air travel demand. IATA estimated that the impact of the Japanese disaster on global international traffic was a 1% loss in that

¹ IATA; Political Unrest Slows Global Growth; 29 March 2011

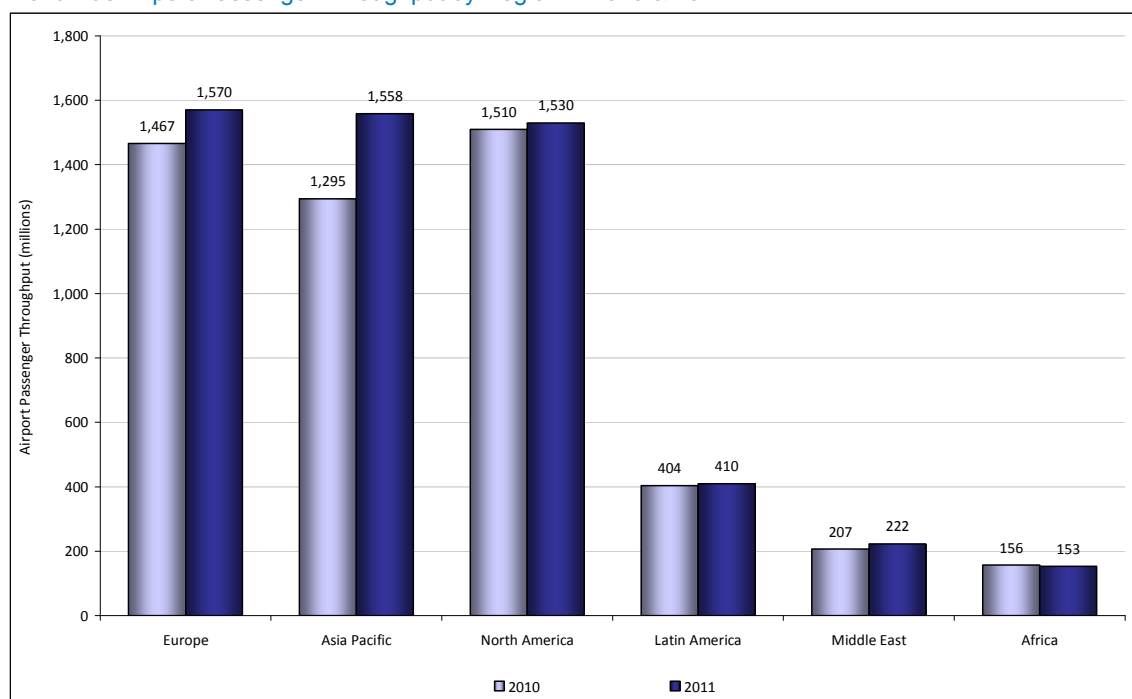
month, with Asia Pacific airlines bearing the brunt of the loss with demand hit by -2%, and Japan's domestic market decimated by 22% cut in demand². Other regions were not immune, as North American and European carriers recorded a 1% and 0.5% fall in demand, respectively.

The other major event impacting international air travel demand in 2011 – which was more of an ongoing development – was the Eurozone debt crisis, dampening demand within Europe but also on international traffic flows to and from the region. In Europe, the impact was felt more acutely on airline yields rather than on traffic volumes, as premium class travellers sought lower fares on alternative carriers.

As a collective, European airports performed well, achieving passenger throughput growth of 7% in 2011, albeit marginally below the world average. According to ACI's full year 2011 data³, European airport passenger throughput rose from 1.47 billion in 2010 to 1.57 billion in 2011.

The size of the European market actually supplanted the North American market as number one in terms of airport passenger throughput in 2011, and the Asia Pacific market claimed second spot ahead of it, such was the growth experienced in Europe and Asia Pacific compared to a stagnant North America during this year.

Worldwide Airport Passenger Throughput by Region in 2010 & 2011



Source: ACI Worldwide Airport Traffic Report

While the 7% growth of Europe's airports was significant, it lagged far behind the growth of 20% year-on-year recorded by Asia Pacific airports in 2011. Europe's growth did, however, substantially outpace that of

² IATA; Air travel shrinks in March – events in Japan and MENA impact air transport; 3 May 2011

³ ACI Worldwide Airport Traffic Report 2011

the static North American airports, which posted an aggregate increase of 1.3% over 2010, and kept pace with Middle Eastern competitors (7.4%).

Airport Financial Results

According to the ACI Economics Survey 2011, based on a response from 604 airports that collectively handled 3.12bn passengers in 2010, or some 62% of global traffic in that year, worldwide total airport income in FY 2011 reached USD 101.8 billion, an increase of 7% on FY 2010/11. Aeronautical revenues worldwide increased by 7.3% while non-aeronautical revenue sources generated around 7% more revenue when compared to 09/10.

The global airport industry enjoyed aeronautical revenues of USD 54.5bn in FY 2011, an increase of 7.3%. This figure includes revenues from ground handling activities. 34% of this revenue was from aircraft based charges, 49% from passenger based charges and 10% from ground handling activities.

Overall non-aeronautical revenues increased by 7% to USD 47.3bn in FY 2011. Retail remains the most significant revenue stream in terms of airport non aeronautical revenue followed by Property Income and Car Parking. European Airports receive 35% of non-aeronautical income through retail, slightly higher than the world average of 28%.

Airports worldwide in FY 2010/11 incurred operating expenses of USD 56bn or 55% of total revenue, a significant decline compared with 2009/10. ACI's hypothesis is that the decrease in Opex is a result of cost reductions and greater credit discipline in the wake of the Financial Crisis. The effects of which were still being felt in 2010/11.

Airlines

2011 saw a continued recovery in global air passenger traffic following the resurgence witnessed in 2010. IATA member airline passenger traffic (measured in Revenue Passenger Kilometres) grew by nearly 6% in 2011 compared to 2010.

Airlines were able to maintain a similar level of passenger load factor (PLF) in 2011 as they collectively achieved in 2010, although they were more inclined to increase capacity in 2011 than in the previous year, with available seat-kms increasing 6.3% over 2010. PLF's were not uniform throughout the year, however, as early in 2011 load factors were depressed by shocks hitting Japan and North Africa.

As in most previous years, the cost of jet fuel remained a key concern for airlines in protecting profitability in 2011. Jet fuel prices were volatile during the year with peaks and troughs, but prices remained consistently higher than 2010 levels.

In 2011, industry-wide net profits, at a global level, of some US\$ 8 billion are half of those recorded in the previous year, but still represents a reasonable outcome when compared against recent historical results. The core reason for the dip in net profits in 2011 is that the rise in costs (10.8% year-on-year) outstripped that of revenues (9.4%), with high fuel costs the main contributory factor accounting for 30% of total costs in 2011. Non-fuel expenses also rose to their highest level in the last seven years, to US\$405 billion.

At the regional level, according to ICAO⁴, "varying regional economic conditions and high jet fuel price volatility were the primary factors in the 2010–2011 global performance discrepancies. From a more regional standpoint, Asia/Pacific airlines posted the strongest financial performance during 2011, with net profits of \$10.8 billion. European airlines posted less than \$1 billion in net profit in 2011, while African operators registered a net loss of about \$100 million."

IATA reported that its European-based airlines achieved year-on-year passenger traffic increases of 9.5%, narrowly trailing the collective seat capacity increase of 10.2% in 2011. Average load factors dipped to 78.9% from 79.4% in 2010. These increases have been recorded despite the ongoing Eurozone financial/debt crisis throughout 2011.

IATA's North American-based airlines achieved a collective year-on-year RPK increase of 4.0% in 2011 over 2010, trailing a seat capacity increase of 6.0%. Average load factors dipped to 80.7% from 82.2% in 2010.

In 2011 legacy carriers in Asia Pacific further underlined the rapid growth in the region which has seen Asia-Pacific carriers increase in importance on the global scene. IATA reported that its Asia Pacific airlines members achieved year-on-year passenger traffic growth of 4.1% on seat capacity increases of 6.4%, with a resulting dip in average load factors from 77.6% to 75.9% in 2011. According to industry sources⁵ the top Chinese carriers, and the Chinese airline sector in general, have continued to contribute to the regions dynamic growth. In terms of revenues, the three major Chinese legacy carriers of Air China, China Southern and China Eastern are comfortably established within the top 20 in the world.

According to IATA figures, Middle Eastern carriers recorded strong passenger traffic growth in 2011. RPK demand increased by 8.6% over 2010. This compared to a capacity growth (ASK) of 9.1%, with a corresponding dip of 0.5 percentage points in passenger load factor to 75.5% for the year.

IATA reports Latin America as the strongest growth region for passenger traffic in 2011. Carriers in this region experienced passenger traffic (RPK) growth of 11.3% in the year on a capacity (ASK) growth of 9.8%. Despite traffic growth outstripping capacity, load factors for carriers in the region fell to 74.6% in 2011 from 76.7% the previous year.

Overall, African carriers reported a stagnation in passenger traffic growth (RPKs) of 0.5% in 2011, following a strong performance in 2010. Capacity increased 2.2% year-on-year, which meant load factors fell to an average of 67.6% from 69.1% a year earlier.

Global Air Cargo Growth

According to IATA, its member airlines collectively recorded an air cargo decline – measured in Freight Tonne Kilometres (FTKs) – of nearly 1% in 2011 over 2010 levels, due in large part to a slowdown in export demand from Asia Pacific to its major consumption markets in Europe and North America. In simple terms, the economic conditions in Europe and the U.S. in particular have dampened demand in these markets for Chinese, Korean and Thai goods. This is illustrated by the almost 5% reduction in FTKs for Asia Pacific

⁴ ICAO News Release 5th July 2012; COM 14/12

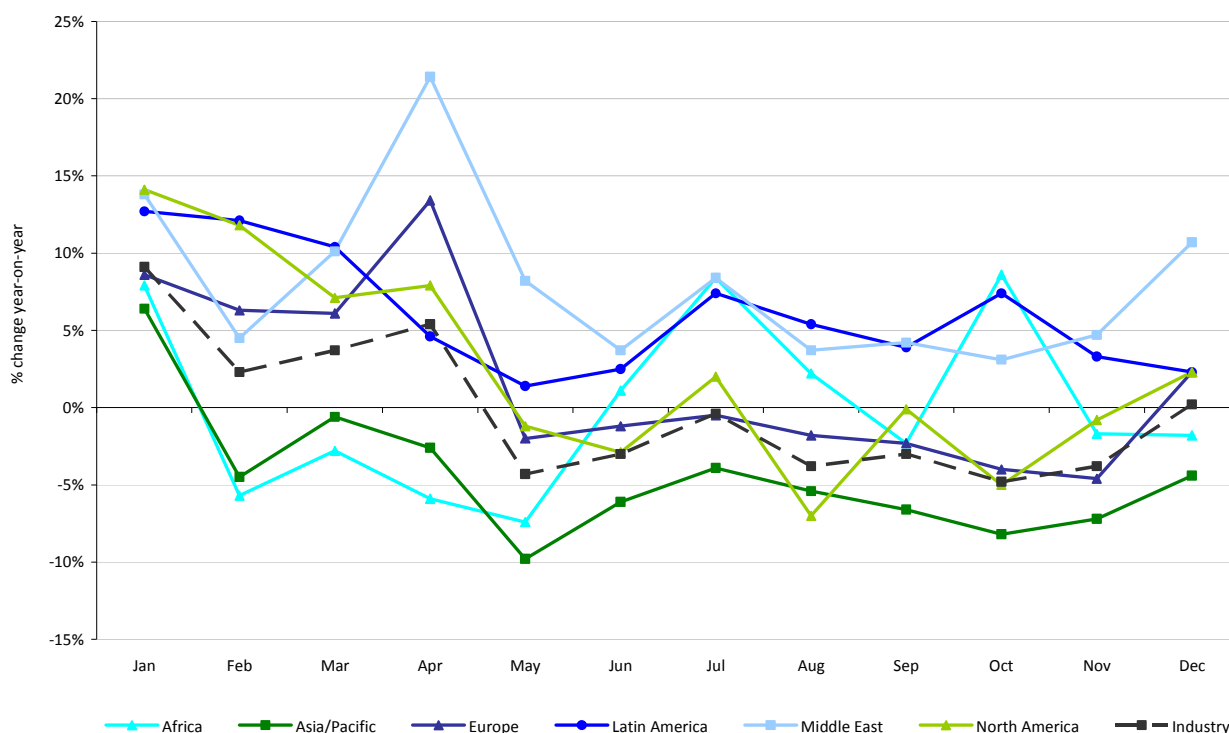
⁵ Airline Business, August 2012, p38-39

carriers in 2011, and a flat growth of 1.5% experienced by European and North American airlines. Asian airlines were also the ones most severely affected by the Japanese natural disaster in March and the subsequent months.

The decline witnessed by African carriers (-1.2% FTKs) is – again – attributable to the troubles experienced in the north of the African continent in the first half of 2011 especially. Latin America remained fairly insulated from the adverse trading conditions afflicting Europe, North America and Asia, as the freight airline sector posted 5.5% growth, driven mainly by LAN Airlines expansion. The Middle Eastern airlines recorded the highest growth in 2011 of 8.2% year-on-year on the back of the ever-growing fleet of widebody aircraft in the region, operated by Emirates, Qatar and Etihad.

The monthly pattern of growth reflects the full year results, with Middle Eastern carriers the stellar performers across the year. Asia Pacific airlines posted declines in every month following January. The peak in April in most markets is due to the distorting nature of the Icelandic volcanic eruption in the same period in the previous year, when air freight volumes (along with passengers) were devastated by airspace closures and flight cancellations.

Freight Tonne Kilometre (FTK) Growth by Region 2011 vs. 2010



Source: IATA

The industry average is heavily influenced by the Asia Pacific results, as this region's airlines command a 40% market share of air freight traffic.

Forecasts

In 2011, ICAO produced a passenger traffic forecast for the coming few years to 2014. ICAO measures growth in Passenger Kilometres Performed (PKP). The organisation forecasts that in 2012 global air traffic

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will continue to grow but at a slower rate than 2011 as oil prices are expected to remain at a higher level. In 2013 and 2014, global traffic is predicted to continue with positive growth.

The forecast traffic is dictated by the prevailing economic conditions on a regional basis and will vary by geographic region. From 2011-2014, the average annual growth rate (AAGR) ranges from 3% in North America to 10% in the Middle East. The AAGR for the world is 5.9%.

Airlines of mature markets such as North America and Europe are predicted to grow at a slower rate, whereas those in the Middle East, Asia/Pacific and Latin America/Caribbean are projected to experience growth significantly above the world average.

Of note is that ICAO projects air traffic to grow at a faster pace between 2011 and 2014 than it has averaged in the last ten years since 2001, driven by strong demand in Asia Pacific and the Middle East.

According to Boeing, airline passenger traffic will increase from almost 4.9 trillion RPKs in 2010 to 13.3 trillion in 2030. This represents an almost threefold increase with an average annual growth rate of 5.1%. Airbus points out in its forecast that historically (since the 1970s) air traffic has doubled every fifteen years and will do so again by 2025.

Based on the Boeing forecast, the highest growth will be concentrated in the Asia Pacific region with an annual average growth rate of 6.8%, followed by the Middle East (6.2%) and Latin America (5.9%). With Africa also experiencing substantial expansion (5.4%), these regional markets dominate growth compared to the mature economies of Europe (4.4%) and North America (3.2%).

Eurocontrol's medium term base case for flight movement growth in Europe is forecast to be 11.3 million movements in 2018, 16% higher than 2011. The average annual growth is relatively weak at 2.1%. Eurocontrol has also produced high and low traffic growth rates which differ in terms of methodology and input assumptions. Between them, the scenarios capture the most likely range of future growth in flight movements. The low case forecasts 10.6 million movements in 2018 with an annual growth of 1.1%. The high case forecasts 12.1 million movements in 2018 with an annual growth of 3.0%.

In its World Air Cargo Forecast 2012-2031, Boeing projects an average annual growth rate for global air cargo of 5.2% in the base case. The low and high cases forecast 4.5% and 5.6% respectively, measured in Revenue Tonne-Kilometres (RTKs), which is the amount of cargo carried multiplied by the distance it is transported.

Asia will continue to lead the world air cargo industry in average annual growth rates, with domestic China and intra-Asia markets expanding 8.0% and 6.9% per year, respectively. Latin America markets with North America and with Europe will grow at approximately the world average growth rate, as will Middle East markets with Europe. The more mature markets of North America and Europe reflect slower growth rates.

Aircraft Manufacturing & MRO

Based on the latest data available, the turnover of the European aeronautic sector in 2010 (civil and military aeronautics but excluding space activities, land and naval defence) totalled €106.6 billion, an increase of 6.2% over 2009. This represents a 3.9% CAGR in turnover since 2006⁶.

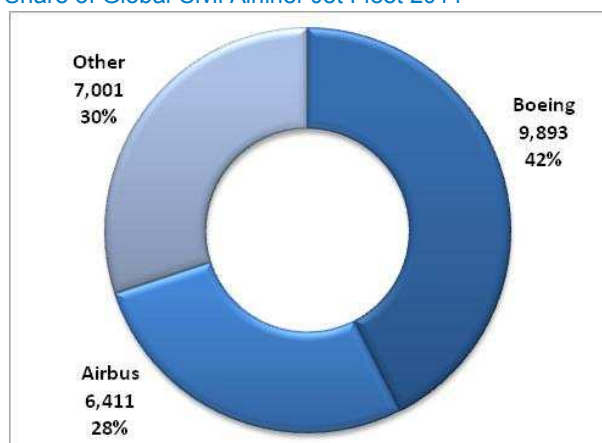
⁶ ASD Facts and Figures 2010

The number of persons employed in aeronautics reached 458,700, a decrease of 2% over 2009. This represents a CAGR of 0.9% since 2006. France was the only one of the major countries to record an increase in employment in 2010 compared with the previous year. Spain was particularly adversely affected recording a 27% reduction in employment in aeronautics, reflecting the country's overall high unemployment rate in 2011 of 21.7%⁷ as Spain struggled to contain its financial and economic problems.

Europe is a net exporter of aerospace and aviation products⁸. In 2011 aerospace exports to the world from EU27 countries totalled €53.8 billion. This represents a 5.5% increase on the previous year and a CAGR of 2.2% since 1999, although there have been cyclical peaks and troughs over the period. In 2010, the United Kingdom (11.3%) France (5.3%) and Germany (3.4%) all recorded increases in exports compared with 2010.

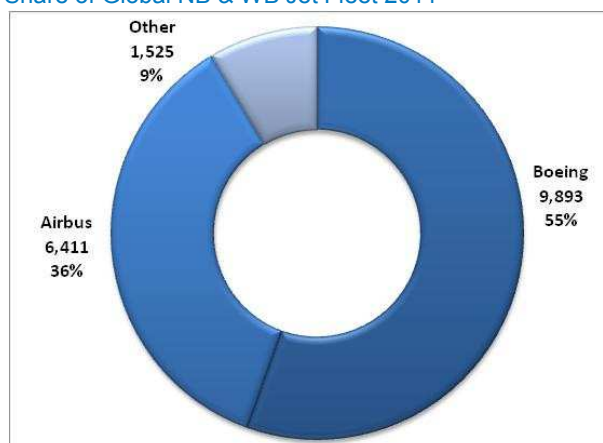
Of the current global jet fleet in service (to the end of 2011), Boeing and Airbus enjoys nearly three quarters of the global market share for civil airliner jets (which comprise regional, narrowbody and widebody aircraft, excluding turboprops), with Boeing accounting for a greater share of the total (42%) compared to Airbus (28%). The remaining 30% is dominated by Embraer and Bombardier in the regional jet sector.

Share of Global Civil Airliner Jet Fleet 2011



Source: JP Fleets (Regional, NB & WB Jets)

Share of Global NB & WB Jet Fleet 2011



Source: JP Fleets

The civil passenger turboprop aircraft market is smaller than the jet market but still significant. As of 31st December 2011, JP Airline Fleets International database recorded 4,460 civil passenger turboprop aircraft in service at a global level. Aircraft in this market range from an eight-seat Cessna 208 at one end of the scale to a seventy-seat ATR 72 at the other. These aircraft are typically used by small commercial and regional carriers on operations that do not support large passenger demand, and might serve airfields or airstrips that preclude jet operations because of rugged runway condition.

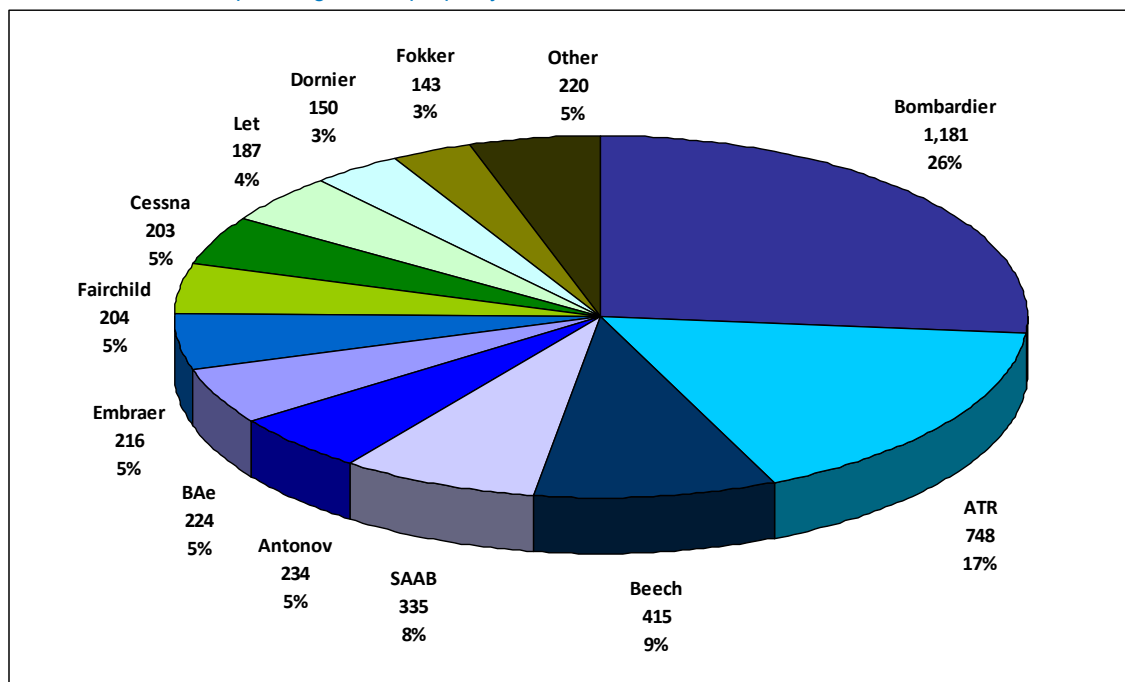
Numerous manufacturers compete in the civil passenger turboprop aircraft market. The top four combined – Bombardier, ATR, Beech and Saab – command 60% of the market.

⁷ Eurostat Unemployment Statistics: http://epp.eurostat.ec.europa.eu/statistics_explained/index.php/Unemployment_statistics

⁸ All aerospace import and export data in **Error! Reference source not found.** to **Error! Reference source not found.** uses Eurostat SITC codes applicable to aerospace activity, including sub-groups of SITC 714, 792 and 874.

⁹ Opportunities and Challenges in Today's MRO Market 2011-2021, TeamSAI, Aeroxchange Annual Conference, February 2012 304243/ITD/ITA/1/A 25 January 2013

Manufacturers of civil passenger turboprops by market share 2011



Source: JP Airline Fleets International database

The global market value of civil aeronautic MRO in 2011 was USD 46.9 billion, up 10.8% from the USD 42.3 billion achieved in 2010. The greatest proportion of MRO activity is due to engine maintenance, at 46%⁹.

The regional distribution of MRO activity is directly comparable to the global air transport market as a whole. While North America and Western Europe currently have the largest aircraft fleets and MRO markets, the growth areas lie in emerging regions – particularly China, India and Eastern Europe. These regions are growing quickly, but their overall size currently represents a small proportion of the total MRO market.

The 10.8% rise in global MRO spend in 2011 shows a rebound from the 7.4% reduction in 2010; and the drivers of this change are important to understand as this increase is made up of components showing individual trends.

In contrast to capacity reductions made by airlines during the economic recession in 2010, fleet renewal activity in 2011 drove a 3.2% increase alone. Aircraft utilisation rates also rose 1.5% for the year driving an MRO market increase of 0.4%.

A rise in component maintenance outpaced declines to airframe and line maintenance, resulting in a small net increase of 1.0%. In addition labour rates have reduced marginally, while engine MRO drove a significant 6.4% increase (1.6% in 2010)¹⁰.

⁹ Opportunities and Challenges in Today's MRO Market 2011-2021, TeamSAI, Aeroxchange Annual Conference, February 2012

¹⁰ Opportunities and Challenges in Today's MRO Market 2011-2021, TeamSAI, 22 September 2011

Air Traffic Management

The European Commission has adopted a Commission Decision¹¹ setting EU-wide performance targets and alert thresholds for the first reference period (RP1) 2012 to 2014. These targets cover route environment (in terms of route efficiency), capacity (in terms of en route delays) and cost efficiency (in terms of en route unit rates).

For the key performance indicators (KPIs) on cost efficiency¹², there will be a requirement to report annually on the actual and projected evolution of en route unit rates at the National or Functional Airspace Block (FAB) level during each reference period. The EU-wide cost efficiency targets are to achieve average ATM service unit rates of €57.88 in 2012, €55.87 in 2013 and €53.92 in 2014 (expressed in €2009).

In September 2011, EUROCONTROL (designated as the Performance Review Board [PRB]) published its first assessment of National/FAB performance plans for the period 2012 to 2014¹³. Volume I of the report presents the PRB's overall assessment of National/FAB Performance Plans for RP1, as well as PRB recommendations to the European Commission. The PRB's assessment of the 26 national and 2 FAB Performance Plans is found in Volume II.

In terms of the cost-efficiency target, the PRB assessed that there had been a solid start to the reference period with the total costs for 2012, in terms of determined unit rate, only 0.3% above target. However, it also assessed that the Performance Plans collectively would fall short of the EU-wide cost efficiency target for 2014 by 2.4%. In monetary terms, further savings of €256 million out of a total of €18,900 million are required in order to meet the EU-wide target and intermediate values over RP1.

The Internal Market & Competition

The EC acts to ensure that there is fair and open market competition throughout the EU Member States. At the same time, it recognises that the development of regional airports enhances the mobility of the general public and can provide an economic boost to the regions. The European Commission ensures a level playing field in the market by setting competition rules for State aid to airports and airlines.

In the context of changing market conditions, the Commission considered 2011 to be the right time to reflect on the previous application of the EU aviation guidelines from 1994 and 2005. To this end, the EC Directorate General for Competition carried out a public consultation between 7 April 2011 and 7 June 2011 to measure the impact so far of these two sets of guidelines. The Commission aimed to collect comments from all stakeholders allowing it to determine whether the guidelines need to be revised and if so, to what extent.

¹¹ Commission Decision setting the European Union-wide performance targets and alert thresholds for the provision of air navigation services for the years 2012 to 2014, 21 February 2011

¹² The SES II performance scheme covers environment, delays and safety as well cost effectiveness. These areas are dealt with in other chapters of this report. This chapter concentrates on ATM cost effectiveness.

¹³ SES II Performance Scheme, Assessment of National/FAB Performance Plans with Performance Targets for the period 2012-2014, prepared by the Performance Review Body (PRB) of the Single European Sky.

Since October 2004, the EU and U.S. have been contesting their Governments' respective support to their aerospace industries at the World Trade Organisation (WTO). Both WTO challenges relate to alleged WTO-incompatible support respectively to Airbus and Boeing over a twenty to thirty year period.

In the 'Airbus case', the WTO panel made its report public on 30 June 2010 followed by the Appellate Body (AB) report on 18 May 2011. The U.S. and EU agreed in February 2012 in Geneva on the next procedural steps in this WTO dispute. The EU has fully complied with its WTO obligations thanks to the comprehensive set of actions presented in December 2011.

In the 'Boeing case', the panel issued its final public report on 31 March 2011 followed by the Appellate Body report on 12 March 2012.

Environment

Since the agreement by States of Resolution A37-19, ICAO has actively assisted Member States with the development of their aviation-related climate change action plans.

The Organisation wrapped up a recent round of workshops in this regard, with five regional action plan training sessions in Mexico City, Bangkok, Dubai, Nairobi, and Paris being held between May and July 2011. A final action plan workshop was held in November 2011 in Montreal. ICAO encouraged States that had made progress in the development and implementation of their plans to showcase their activities and share their experiences with other States at this event.

In tandem, an ICAO Workshop on Aviation and Sustainable Alternative Fuels was organised in October 2011 as part of ICAO preparations for the United Nations Conference on Sustainable Development (Rio+20) taking place in Brazil in June 2012.

Eighteen out of twenty-five new AIRE projects were selected for co-funding during 2010 following a call for tender according to pre-established criteria – always projects entailing significant environmental benefits and strongly linked to implementation – resulting in a significant enlargement of the programme's geographical coverage and partners. These projects have a maximum duration of 15 months with the majority of them extending to the end of 2011. More than 5,000 trials are expected and other airlines will voluntarily join existing trials.

ACI Europe developed its 'Airport Carbon Accreditation' initiative to assess and recognise airport efforts to manage and reduce GHG emissions. It was launched in 2009 in Europe, and in late 2011 the scheme was rolled out to the Asia Pacific region in cooperation with ACI Asia Pacific, having already achieved significant results with this programme in Europe.

In Europe, the initiative is growing apace. In year one (2009-2010), 17 airports participated, representing 21% of European air traffic. By year two (2010-2011), 43 airports were involved, accounting for 43% of European air traffic.

Boeing delivered its first B787 Dreamliner to launch customer All Nippon Airways in September 2011. The all-new jetliner made from composite materials provides airlines with improved fuel economy and low operating costs than its predecessors. It also features a host of new technologies that are designed to enhance the passenger experience.

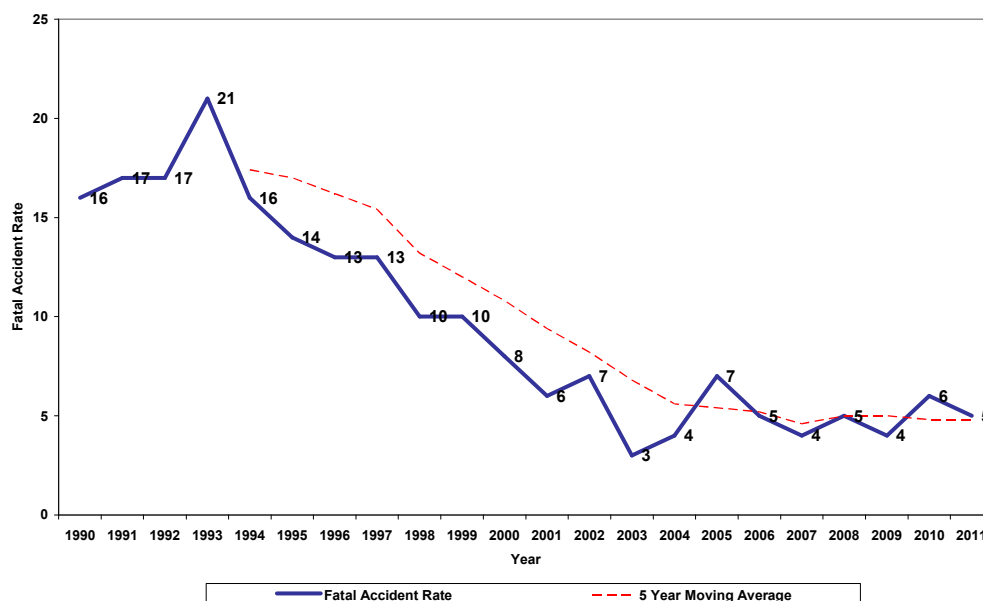
Airbus ended 2010 with the announcement of its A320neo, the A320 option with new fuel saving engines. Over 1,200 orders and commitments from more than 20 different customers have been placed. As well as offering the latest and most eco-efficient engine technologies, the A320neo will incorporate 'sharklets' – large fuel-saving wing tip devices. According to Airbus, the aircraft will deliver significant fuel savings of up to 15%, equating to up to 3,600 tonnes of CO₂ savings annually per aircraft, as well as reduce NO_x emissions. The A320neo is also expected to deliver noise reductions, through advances in engine design. Throughout 2011, Pratt & Whitney conducted initial ground testing on its 'PurePower' PW1000G series engine, selected for the launch of A320neo aircraft in 2015. According to PW, the redesigned engine uses an advanced gear system that allows the fan and compressor/turbine to operate at different speeds, resulting in up to 50% reduction in noise.

In Europe, German flag carrier Lufthansa has embarked upon a series of weight-saving initiatives on board its aircraft fleet in order to reduce fuel consumption. Firstly, Lufthansa is installing around 32,000 new seats on more than 180 aircraft in its short and medium-haul fleet – within the space of just one year – helping to reduce emissions. Each row of new seats is more than 12 kg lighter than the previous seat rows, equivalent to an almost 30% reduction in weight. Secondly, almost 30,000 new service trolleys will be introduced on Lufthansa flights over the next three years. The introduction of the 'Quantum Light Weight Trolley', which is one third lighter than its predecessor, will save about 9,000 tonnes of kerosene and 28,350 tonnes of CO₂ annually.

Safety

In 2011, there were 33 fatal commercial airline accidents worldwide causing the deaths of 504 passengers and crew with an additional 30 casualties on the ground. This spans all types of commercial airline operations, including scheduled and non-scheduled passenger flights, by jets and turboprop aircraft; and non-passenger operations such as cargo or positioning flights. In 2010 there were 26 fatal commercial airline accidents causing 817 deaths. The global twenty year trend in fatal accidents per 10 million flights takes into account the increase in traffic over that period.

Global Fatal Accident Rate (per 10 million Flights) 1990 to 2011



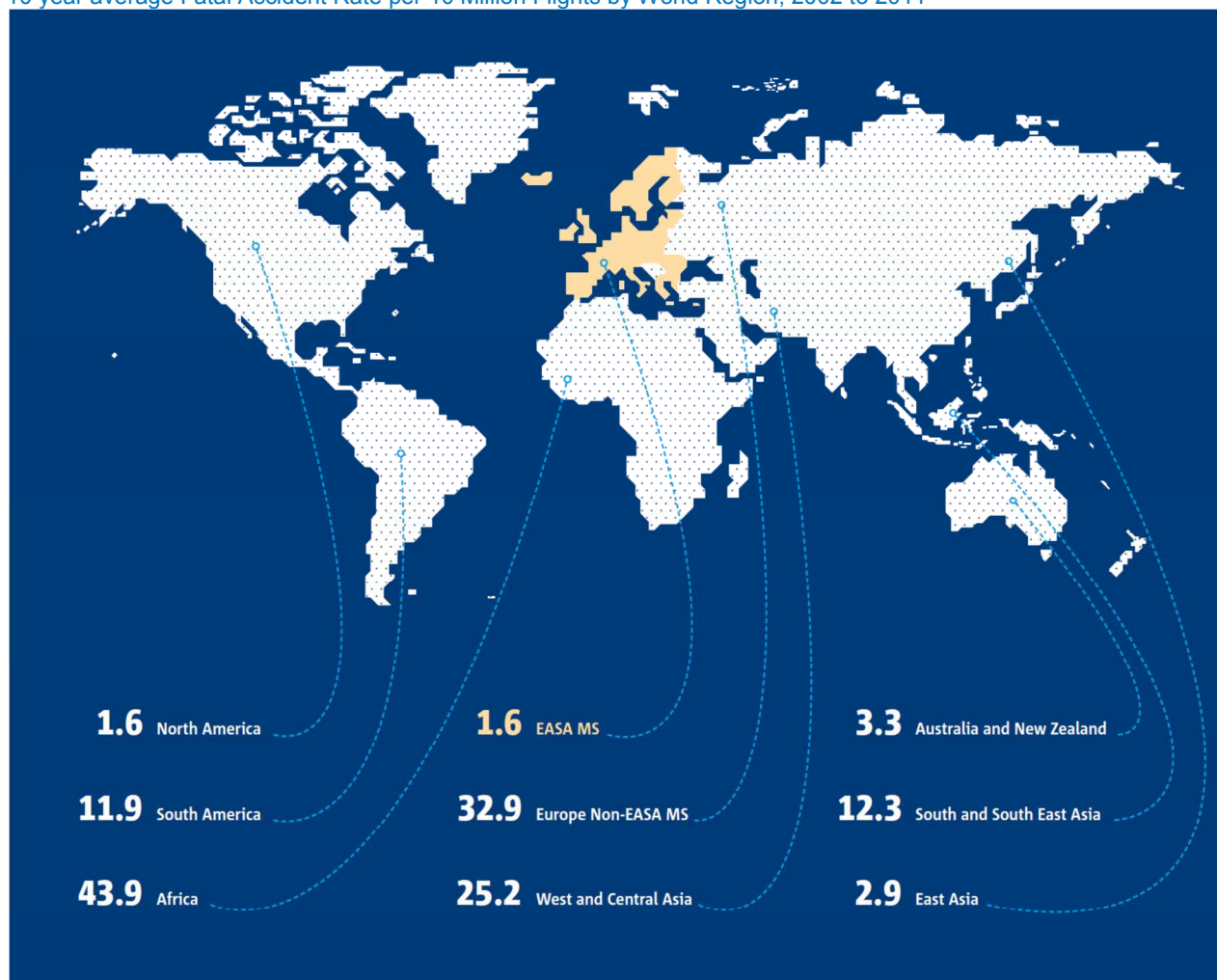
Annual Analyses of the EU Air Transport Market 2011

The year 2011 saw a rise in the number of identified world airline fatal accidents compared to 2010 but a decrease in the number of fatalities, reflecting the greater proportion of smaller regional aircraft, mostly turboprops in the 2011 accident list compared to fewer but, on average, larger aircraft types involved in fatal accidents in 2010.

In terms of western-built jet hull loss accidents, all regions performed better or the same in 2011 compared to 2010 with the exception of the Commonwealth of Independent States (CIS). Europe and North Asia had zero western-built jet hull losses. The same regional trends were evident when looking at all hull loss accidents, although for European (operated in EASA Member States) commercial turboprop operations, there was a fatal accident involving a Swearingen SA227. 6 of the 12 occupants on board received fatal injuries. Nevertheless, this was one of the lowest annual accident rates in Europe in the past decade.

As a result, compared to the EASA Annual Safety Review of 2010, the rate of accidents for EASA Member States has dropped from 3.3 to 1.6 fatal accidents. This change is mainly because of the exceptionally high European accident rate (11.7) in the year 2001. This year is not included in the EASA Review of 2011 which only covers the decade 2002 – 2011.

10 year average Fatal Accident Rate per 10 Million Flights by World Region, 2002 to 2011



Source: EASA Annual Safety Review 2011. Scheduled passenger and cargo operations only

Incidence or Occurrence Reporting

At the end of 2011 the ECR contained 625,267 occurrences, this was an increase of over 200,000 over the previous year (includes both incidents and accidents). This increase is not necessarily due to an increase in safety occurrences over the past 12 months, but is largely due to the endeavours of States in integrating their occurrence data into the ECR. Whilst this progress is to be applauded, there are still a large number of incidents reported with very sparse supporting information.

Air Cargo Security

More than 40%, by value, of the world's freight travels by air every year. The thwarted Yemen printer cartridge bomb plot in October 2010 has been described as air freight's 9/11. Within the EU, the current regulatory framework provides for a comprehensive set of rules on the security of air cargo and mail¹⁴, but the Yemeni event changed the way regulators view cargo security. In June 2011, ICAO and the World Customs Organisation (WCO) signed a Memorandum of Understanding (MOU)¹⁵ for increased cooperation to protect air cargo from acts of terrorism or other criminal activity and for speeding up the movement of goods by air worldwide.

On 1 July 2011, more stringent ICAO standards, under Annex 17, concerning air cargo become applicable. They include a new requirement for Member States to establish a supply-chain security process.

In August 2011, Regulation (EU) No 859/2011¹⁶ was adopted by the European Commission regarding security measures on cargo coming from non-EU countries. With the new regime Europe reaches out to other countries aviation security systems in order to benefit from security controls performed outside its own borders. Europe has thus created the nucleus of a worldwide secure supply chain programme and will further build upon it. Air carriers play a crucial role in providing the effective links between supply chain systems of different jurisdictions. Their security programmes will account for effective and seamless security controls undertaken outside Europe. In the future, independent validation will be based on commonly recognised ICAO standards of any actor in the supply chain worldwide - air carriers as well as regulated agents and known consignors. This will provide Europe and any other country that wishes to participate with the necessary comfort to trust each other's systems.

Punctuality and Delays

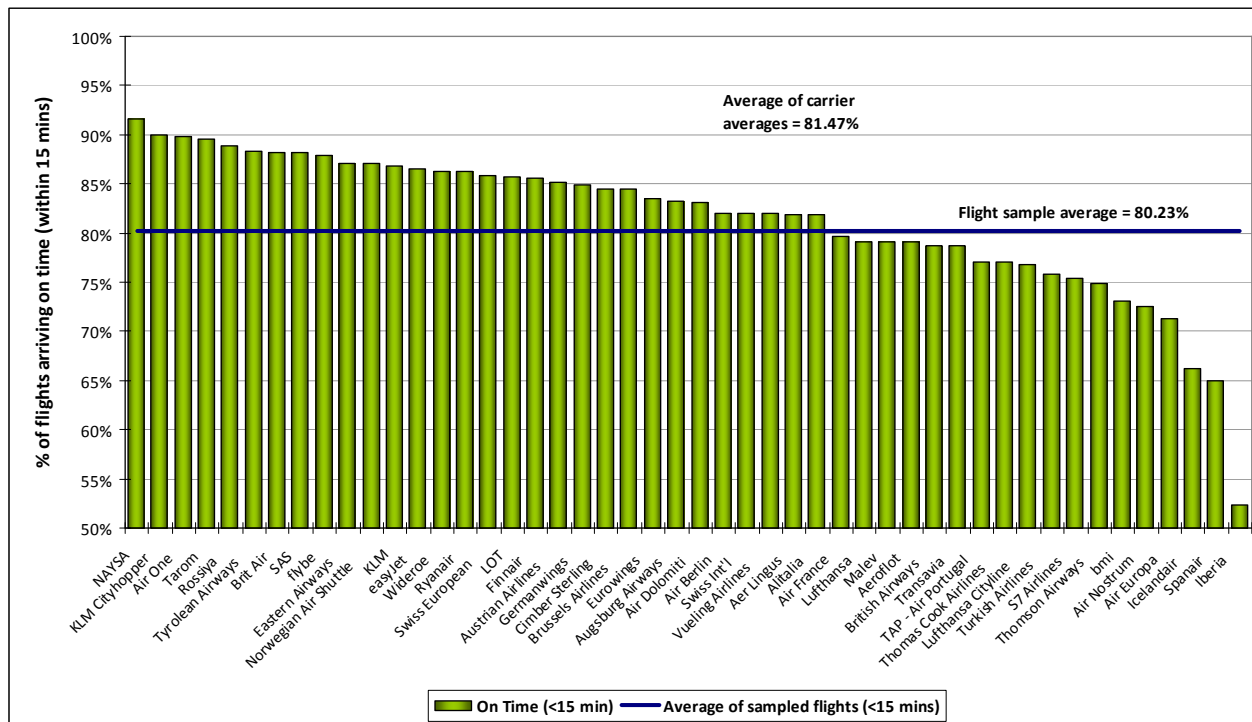
The annual European carrier arrival performance for scheduled flights for each airline sampled by FlightStats is shown in the graph below. While the average of all sampled flights in 2011 is 80.2% on time, the average of the individual carrier averages is 81.5%. The top five European airlines in terms of on-time punctuality recorded an average of 90% of flights on time, compared to the bottom five carriers achieving on-time punctuality averaging 65.4%; almost a 25 percentage point difference in on-time performance.

¹⁴ Notably Section 6 of the Annex to Reg. 300/2008, Parts A and F of the Annex to Reg. 272/2009, and Section 6 of the Annex to Reg. 185/2010.

¹⁵ ICAO News Release PIO 13/11, 27 June 2011

¹⁶ Commission Implementing Regulation (EU) No 859/2011 amending Regulation (EU) No 185/2010 laying down detailed measures for the implementation of the common basic standards on aviation security in respect of air cargo and mail, 25 August 2011

2011 European Carrier On Time Arrival Performance (Scheduled Passenger Flights within 15 min)



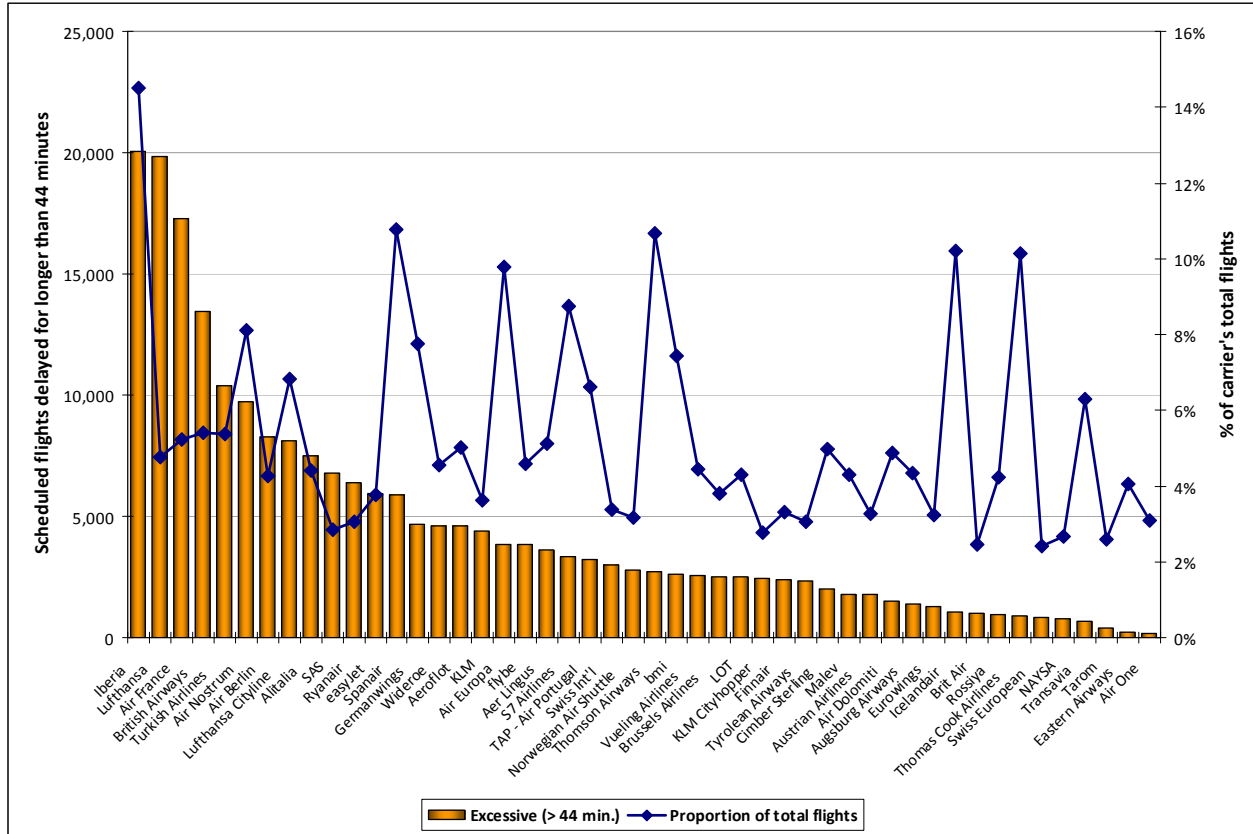
Source: www.flightstats.com

These figures represent an improvement in punctuality over 2010. The average of sampled flights improved by 6.9%, the individual carrier average improved by 3.0%, the top five European airlines achieved a marginally better result by 0.7% while the bottom five European carriers showed a 2.9% improvement in on time arrival performance.

Of the bottom ten European carriers, four of these are based in Spain (Iberia, Spanair, Air Europa and Air Nostrum) and two are UK carriers (bmi and Thomson Airways; bmi is primarily based at London Heathrow). The others are Turkish Airlines, Lufthansa Cityline, S7 Airlines and Icelandair.

In addition to data for on time arrivals (those arriving within 15 minutes of the scheduled time), FlightStats also collects data for longer delays and cancellations.

2011 European Carrier On Time Arrival Performance (Scheduled Passenger Flights Delayed >44min)



Source: www.flightstats.com

Airlines with the highest number of long delays were Iberia, Lufthansa, Air France and British Airways. These four carriers are full service network airlines operating a hub and spoke business model from major European hub airports. Airport delays can be attributed to the airports themselves due to airspace congestion in the surrounding area as well as runway and infrastructure capacity issues in some cases. However, these longer delays should be taken in the wider context of the proportion of flights operated. Of the four carriers mentioned, three incurred delays in excess of 44 minutes but this was less than 6% of their respective sampled total flights. Iberia however saw 14.5% of its total flights delayed in the same period.

In previous years AEA statistics have given an insight into airport punctuality across Europe, albeit limited to its airline members, but since 2009 such data is no longer available. However, FlightStats produces an analysis for the top 50 worldwide airports on a monthly basis as well as an annual analysis¹⁷ collating data from those airlines that provide punctuality statistics. To reiterate, the data is based on the sampling of reporting airlines and is not a complete record of punctuality of all scheduled carriers operating at a given airport.

In 2010 no European airports appeared in the top twenty; in 2011 this situation improved with London Stansted coming second after top global performer Tokyo Haneda, with Amsterdam and Munich also

¹⁷ 2011 Year-end Report on Airport and Airline On-time Performance, FlightStats, 4 January 2012

recording significant improvements. The main network carrier hub airports in Europe (Amsterdam, Frankfurt, Heathrow, Paris CDG and Madrid) achieved between them an average on-time departure punctuality of 73.6% in 2011, a collective improvement of over 6% on 2010. The best European 'hub' performance achieved was at Amsterdam with 81.3% of departures on time.

Glossary

AACO	Arab Air Carriers Organisation
AAGR	Average Annual Growth Rate
AAPA	Association of Asia Pacific Airlines
ACARE	Advisory Council for Aeronautics Research in Europe
ACAS	AirCRAFT Analytical System
ACCC	Australian Competition and Consumer Commission
ACI	Airports Council International
ACL	Airport Coordination Limited
AdP	Aéroports de Paris
ADS-B	Automatic Dependent Surveillance-Broadcast
AEA	Association of European Airlines
AED	UAE Dirham
AEG-SEC	APEC Aviation Security Sub Group
AFRAA	African Airlines Association
AFTK	Available Freight Tonne Kilometres
AIA	Aerospace Industries Association of America
AIAC	Aerospace Industries Association of Canada
AIRE	Atlantic Interoperability Initiative to Reduce Emissions
AIS	Aeronautical Information Service
ALTA	Latin American and Caribbean Air Transport Association
AMC	Acceptable Means of Compliance
AME	Aircraft Maintenance Engineer
ANS	Air Navigation Service
ANSP	Air Navigation Service Provider
APAM-AVSEC	Asia Pacific Ministerial Conference on Aviation Security
AP-ASAP	Asia-Pacific Aviation Security Action Plan
APD	Air Passenger Duty
APEC	Asia Pacific Economic Cooperation
APR	Air Passenger Rights
ASD	AeroSpace and Defence Industries Association of Europe
ASEAN	Association of Southeast Asian Nations
ASK	Available Seat Kilometre
ASPIRE	Asia Pacific Initiative to Reduce Emissions
ASR	Air Services Regulation
ASSA-I	Aviation Security Services Association – International
ATA	Air Transport Association of America
ATAG	Air Transport Action Group

ATC	Air Traffic Control
ATCO	Air Traffic Control Officer
ATFCM	Air Traffic Flow & Capacity Management
ATFM	Air Traffic Flow Management
ATI	Air Transport Intelligence
ATM (1)	Air Traffic Management
ATM (2)	Air Transport Movement
ATOL	Air Travel Organiser's Licence (UK)
ATR	Aerei da Trasporto Regionale or Avions de Transport Régional
ATS	Air Traffic Services
AVIC	China Aviation Industry Corporation
BA	British Airways
BAA	BAA Airports Ltd
BALPA	British Air Lines Pilot Association
BHX	Birmingham Airport
BMI	BMI British Midland
BRIC	Brazil, Russia, India & China
CAA	Civil Aviation Authority
CAAS	Civil Aviation Authority of Singapore
CAD	Canadian dollar
CAGR	Compounded Annual Growth Rate
CAN	Guangzhou Baiyun International Airport
CANSO	Civil Air Navigation Services Organisation
CAPA	Centre for Asia Pacific Aviation
CAT	Commercial Air Transport
CCD	Continuous Climb Departure
CDA	Continuous Descent Approach
CDG	Paris Charles de Gaulle Airport
CDM	Collaborative Decision Making
CEO	Chief Executive Officer
CFMU	EUROCONTROL Central Flow Management Unit
CFRP	Carbon Fibre Reinforced Plastic
CGK	Jakarta Soekarno-Hatta International Airport
CHF	Swiss franc
CLT	Charlotte Douglas International Airport
CNS	Communications, Navigation & Surveillance
CNY	Chinese yuan

CODA	EUROCONTROL Central Office for Delay Analysis
COMAC	Commercial Aircraft Corporation of China Ltd
CPA	Capacity Purchase Agreement
CRCO	EUROCONTROL Central Route Charges Office
CSU	Chargeable Service Units
CTTF	APEC Counter Terrorism Task Force
DBC	Denied Boarding Compensation'
DEN	Denver International Airport
DfT	UK Department for Transport
DGAC	Direction Générale de l'Aviation Civile
DHS	U.S. Department of Homeland Security
DKK	Danish krone
DME	Moscow Domodedovo International Airport
DOT	U.S. Department of Transportation
DSNA	Direction des Services de la Navigation Aérienne (France)
DXB	Dubai International Airport
EACCC	European Aviation Crisis Coordination Cell
EACP	European Aerospace Cluster Partnership
EADS	European Aeronautic Defence and Space Company N.V.
EAS	Essential Air Service
EASA	European Aviation Safety Agency
EBIT	Earnings Before Interest & Taxes
EBITDA	Earnings before interest, tax, depreciation & amortisation
EC	European Commission
ECAA	European Common Aviation Area
ECAC	European Civil Aviation Conference
ECR	European Central Repository for Aviation Occurrences
EDI	Edinburgh Airport
EEA	European Economic Area
EEC	European Economic Community (now the EU)
EGP	Egypt Pound
ELFAA	European Low Fares Airline Association
ENP	European Neighbourhood Policy
EOL	End of Service Life
EPZ	Enhanced Procedure Zone
EQF	European Qualification Framework
ERA	European Regions Airlines Association

ERAA	European Regions Airline Association
ETS	Emission Trading Scheme
EU	European Union
FAA	Federal Aviation Administration
FAB	Functional Airspace Block
FCO	Leonardo da Vinci-Fiumicino Airport
FHS	Flight Hour Services
FIR	Flight Information Region
FMS	Flight Management System
FTK	Freight Tonne Kilometres
FYROM	Former Yugoslav Republic of Macedonia
GAO	U.S. Government Accountability Office
GBP	British Pound Sterling
GDP	Gross Domestic Product
GDS	Global Distribution Systems
GHG	Greenhouse Gas
GIG	Rio de Janeiro-Galeão International Airport
GLA	Glasgow Airport
GM	Guidance Material
GPS	Global Positioning System
GSIC	IATA Global Safety Information Centre
GSIE	Global Safety Information Exchange programme
HKD	Hong Kong dollar
HKG	Hong Kong International Airport
HMV	Heavy Maintenance Visit
IACA	International Association of Charter Airlines
IAG	International Airlines Group
IATA	International Air Transport Association
IAVW	International Airways Volcano Watch
ICAO	International Civil Aviation Organisation
IFE	In-flight Entertainment System
IFR	Instrument Flight Rules
IMF	International Monetary Fund
INECO	Ingeniería y Economía del Transporte
INR	Indian rupee
IOSA	IATA Operational Safety Audit
IPO	Initial Public Offering

IPSOA	IATA Implementation Programme for Safety Operations in Africa
IVATF	International Volcanic Ash Task Force
JAL	Japan Airlines
JAXA	Japan Aerospace Exploration Agency
JCAB	Japan Civil Aviation Bureau
JFK	John F. Kennedy International Airport
JTI	Joint Technology Initiative
KPI	Key Performance Indicator
LAGs	Liquids, aerosols & gels
LAN	Línea Aérea Nacional de Chile (LAN Chile)
LCC	Low Cost Carrier
LCY	London City Airport
LGW	London Gatwick Airport
LHR	London Heathrow Airport
LP	Low pressure
LTN	London Luton Airport
MAD	Madrid Barajas Airport
MAG	Manchester Airports Group
MAN	Manchester Airport
MBM	Market Based Measures
MINT	Minimum CO ₂ in the TMA
MLITT	Japanese Ministry of Land, Infrastructure, Transport & Tourism
MLW	Maximum Landing Weight
MM	Mott MacDonald
MRO	Maintenance, Repair & Overhaul
MTOW	Maximum Take-off Weight
MUC	Munich Franz Josef Strauss International Airport
MWO	Meteorological Watch Office
NAS	National Airspace System
NASA	U.S. National Aeronautics and Space Administration
NAT	North Atlantic Track
NATS	NATS Ltd (UK)
NB	Narrowbody Aircraft
NCL	Newcastle International Airport
NEB	National Enforcement Body
NFZ	No Fly Zone
NGSP	Next Generation Screening Process

NPRM	Notice of Proposed Rulemaking
NRT	Tokyo Narita International Airport
NSA	National Supervisory Authority
NTSB	National Transportation Safety Board
NWA	Northwest Airlines
OAG	Official Airline Guide
OECD	Organisation for Economic Co-operation and Development
OEM	Original Equipment Manufacturer
OFT	UK Office of Fair Trading
ORD	Chicago O'Hare International Airport
ORY	Paris Orly Airport
PBN	Performance Based Navigation
PEK	Beijing Capital International Airport
PETN	Pentaerythritol tetranitrate
PRB	SES Performance Review Body
PRC	EUROCONTROL Performance Review Commission
PRM	Person of Reduced Mobility
PRR	EUROCONTROL Performance Review Report
PSO	Public Service Obligation
PVG	Shanghai Pudong International Airport
R&D	Research & Development
RETACDA	Reduction of Emissions in Terminal Areas (TMA) using Continuous Descent Approaches (CDA)
RLA	Repayable Launch Aid
RPK	Revenue Passenger Kilometre
SAFA	EC Safety Assessment of Foreign Aircraft
SAFUG	Sustainable Aviation Fuel Users Group
SARS	Severe Acute Respiratory Syndrome
SDG	Steer Davies Gleave
SES	Single European Sky
SESAR	Single European Sky ATM Research
SFO	San Francisco International Airport
SIB	Safety Information Bulletin
SIN	Singapore Changi International Airport
SITC	Standard Industry Trade Classification
SJAC	The Society of Japanese Aerospace Companies
SME	Small and Medium-Sized Enterprises

STN	Stansted Airport
SWAFEA	Sustainable Way for Alternative Fuel and Energy in Aviation
SWIM	System Wide Information Management
SYD	Sydney Airport
TAM	TAM Linhas Aéreas (TAM Airlines)
TAWS	Terrain Awareness and Warning System
THB	Thai baht
TJFTZ	Tianjin Free Trade Zone
TLZ	Time-Limited Zone
TMA	Terminal Manoeuvring Area
TRY	Turkish Lira
TSA	Transportation Security Administration
TSU	Total Service Unit
U.S.	United States of America
UAC	United Aircraft Corporation
UAE	United Arab Emirates
UK	The United Kingdom
UNFCCC	United Nations Framework Convention on Climate Change
USAP	Universal Security Audit Programme
USD	U.S. Dollars
USOAP	Universal Safety Oversight Audit Programme
UTC	Coordinated Universal Time
VAAC	Volcanic Ash Advisory Centre
VAT	Value Added Tax
WB	Widebody Aircraft
WTO	World Trade Organization
YoY	Year-on-Year
ZAR	South African Rand